

Installing webMethods and Intelligent Business Operations Products

Version 9.8

April 2015

This document applies to webMethods Product Suite Version 9.8 and to all subsequent releases.

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

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Table of Contents

About this Guide.....	11
Document Conventions.....	11
Online Information.....	12
How to Use This Guide, Recommendations, and Product Licenses.....	13
How to Use This Guide.....	14
Recommendations.....	14
Product Licenses.....	14
Installing and Uninstalling API-Portal, CentraSite, and Mediator.....	15
Typical Development Installation.....	16
Administration Installation.....	16
Software and Hardware Support and Requirements.....	17
Operating System and Browser Support.....	17
Software Requirements and Considerations.....	17
Hardware Requirements.....	17
Minimum and Recommended Hardware Requirements.....	17
Additional Hardware Requirements.....	18
Shut Down Products.....	19
Prepare Your Machine.....	20
Prepare to Install API-Portal on a UNIX System.....	20
Prepare to Install CentraSite on a UNIX System.....	20
Prepare to Install Integration Server on a UNIX System.....	20
Database Connection Information.....	21
Install Products.....	21
Start the Installer, Provide General Information, and Choose the Products to Install.....	21
Supply Product Configuration Information.....	23
Sudo.....	23
API-Portal.....	24
CentraSite.....	25
Command Central.....	26
Integration Server.....	27
Platform Manager.....	29
Complete the Installation.....	30
Change Default Passwords.....	30
Install Latest Fixes.....	30
Register Daemons and Set File Permissions.....	30
Complete the CentraSite Installation.....	30
Set Internet Browser.....	30
Complete the Integration Server Installation on a Mac OS X or Other UNIX System.....	30
Uninstall Products.....	31

Installing and Uninstalling ApplinX.....	33
Typical Development Installation.....	34
Software and Hardware Support and Requirements.....	34
Operating System and Browser Support.....	34
Software Requirements.....	34
Hardware Requirements.....	35
Shut Down Products.....	35
Install ApplinX.....	36
Prepare Your Machine.....	36
Start the Installer, Provide General Information, and Choose ApplinX Components.....	36
Supply Product Configuration Information.....	37
ApplinX.....	37
Complete the Installation.....	38
Install Latest Fixes.....	38
Set Environment Variable.....	38
Uninstall ApplinX.....	39
Installing and Uninstalling EntireX.....	41
Typical Development Installation.....	42
Software and Hardware Support and Requirements.....	42
Operating System and Browser Support.....	42
Software Requirements.....	42
Hardware Requirements.....	43
Shut Down Products.....	43
Install EntireX.....	44
Prepare Your Machine.....	44
Start the Installer, Provide General Information, and Choose EntireX Components.....	45
Supply Product Configuration Information.....	46
System Management Hub.....	46
Sudo.....	47
EntireX.....	49
Complete the Installation.....	50
Install Latest Fixes.....	50
Register Daemons and Set File Permissions.....	50
Set Environment Variables.....	51
Uninstall EntireX.....	51
Installing and Uninstalling All Other webMethods Products.....	53
Typical Development Installations.....	54
Deployment Installation.....	55
Administration Installation.....	55
Software and Hardware Support and Requirements.....	56
Operating System and Browser Support.....	56
Software Requirements and Considerations.....	56
Hardware Requirements.....	58

Minimum and Recommended Hardware Requirements.....	58
Additional Hardware Requirements.....	60
Shut Down Products.....	61
Prepare Your Machine.....	62
Prepare to Install webMethods Broker on a UNIX System.....	62
Prepare to Install Collaboration or MashZone on a Linux System.....	63
Prepare to Install Integration Server on a Mac OS X or Other UNIX System.....	64
Prepare to Install My webMethods Server.....	64
Database Connection Information.....	65
Install Products.....	65
Start the Installer, Provide General Information, and Choose the Products to Install.....	65
Supply Product Configuration Information.....	67
Sudo.....	67
ActiveTransfer Server.....	68
AgileApps.....	69
webMethods Broker.....	70
Command Central.....	73
Content Service Platform Server.....	74
Integration Server.....	75
MashZone.....	77
Mobile Designer.....	78
Mobile Support.....	79
My webMethods Server.....	80
OneData.....	81
Platform Manager.....	84
Rules Engine.....	85
Trading Networks Server.....	86
Create Database Components.....	86
Complete the Installation.....	87
Change Default Passwords.....	87
Install Latest Fixes.....	87
Register Daemons and Set File Permissions.....	87
Complete the AgileApps Installation.....	87
Complete the webMethods Broker Installation.....	87
Make Sure Broker Server is Running and the Default Broker Exists.....	87
Enable Full Core Dumps on an AIX System.....	88
Complete the Content Service Platform Installation.....	88
Complete the Integration Server Installation on a Mac OS X or Other UNIX System.....	88
Complete the Locate Installation.....	89
Complete the MashZone Installation.....	89
Complete the Mobile Installation.....	89
Complete the Mobile Administrator Installation.....	89
Complete the My webMethods Server Installation.....	90
Set Up Automatic Startup on a UNIX System.....	90
Connect Products to Each Other.....	91

Uninstall Products.....	91
Uninstall Mobile Administrator.....	91
Uninstall All Other Products.....	91
Installing and Uninstalling IBO.....	95
Overview.....	96
Typical Development Installations.....	96
Deployment Installation.....	96
Administration Installation.....	97
Software and Hardware Support and Requirements.....	98
Operating System and Browser Support.....	98
Software Requirements and Considerations.....	98
Hardware Requirements.....	98
Minimum and Recommended Hardware Requirements.....	98
Additional Hardware Requirements.....	99
Shut Down Products.....	101
Prepare Your Machine.....	102
Prepare to Install Process Performance Manager.....	102
Prepare to Install Process Performance Manager on a Windows System.....	102
Prepare to Install Process Performance Manager on a Linux System.....	102
Prepare to Install Optimize.....	102
Database Connection Information.....	103
Install Products.....	103
Start the Installer, Provide General Information, and Choose the Products to Install.....	103
Supply Product Configuration Information.....	104
Sudo.....	104
Command Central.....	106
Optimize.....	107
Optimize Infrastructure Data Collector.....	108
Platform Manager.....	109
Presto.....	110
Process Performance Manager.....	111
Process Performance Manager Analysis GUI.....	112
Terracotta.....	113
Universal Messaging.....	114
Create Database Components.....	117
Complete the Installation.....	117
Change Default Passwords.....	117
Install Latest Fixes.....	117
Register Daemons and Set File Permissions.....	117
Complete the Process Performance Manager Installation.....	118
Complete the Terracotta Installation.....	118
Complete the Universal Messaging Installation.....	118
Enable High-Performance Spin Locks.....	118
Add License.....	118

Connect Products to Each Other.....	118
Uninstall Products.....	119
Creating and Dropping Database Components.....	121
Database Components.....	122
Database Drivers.....	122
Data Storage.....	123
Integration Server Data Storage.....	123
Embedded Database versus External RDBMS.....	124
Using the Embedded Database.....	125
Using the External RDBMS.....	125
My webMethods Server Data Storage.....	126
Embedded Database versus External RDBMS.....	126
Using the Embedded Database.....	126
Using an External RDBMS.....	127
Product Database Component Descriptions and Installation Requirements.....	127
ActiveTransfer Database Component.....	127
Archive Database Component.....	127
BPM.....	128
Blaze Database Component.....	128
BusinessRules Database Component.....	128
ProcessAudit Database Component.....	128
ProcessEngine Database Component.....	129
CloudStreamsEvents Database Component.....	129
Software AG Designer.....	129
Integration Server.....	129
MediatorEvents Database Component.....	129
MobileSupport Database Component.....	130
My webMethods Server.....	130
OneDataMetadata, OneDataWorkArea, OneDataReleaseArea Database Components.....	130
Optimize.....	130
Analysis Database Component.....	130
CentralConfiguration Database Component.....	130
ProcessAudit Database Component.....	131
ProcessTracker Database Component.....	131
Staging and Reporting Database Components.....	131
Trading Networks.....	131
TradingNetworks Database Component.....	131
TradingNetworksArchive Database Component.....	132
Infrastructure Database Components.....	132
Preparing for Database Component Creation.....	132
Database User.....	132
Storage.....	133
Database Administrator Account.....	133

Character Set and Sort Order.....	134
Oracle.....	134
SQL Server.....	134
DB2 for LUW.....	135
Page and Block Size.....	135
Set Database Options.....	136
Oracle.....	136
SQL Server.....	136
Install the Database Component Configurator and Database Scripts.....	136
Use the Database Component Configurator Graphical User Interface.....	138
Create Database Components, Database User, and Storage.....	138
Start the Database Component Configurator GUI.....	138
Choose the Action to Perform.....	139
Specify the Connection to the RDBMS.....	140
Create Database Components, Database User, and Storage.....	141
Execute the Specified Action.....	143
Drop Database Components.....	143
Drop the Storage and Revoke Database User Permissions.....	144
Use the Database Component Configurator Command Line Interface.....	145
Database Component Configurator Command.....	146
Main Parameters.....	146
Additional Parameters.....	149
Examples.....	150
Create the Database User and Storage.....	151
Drop the Storage and Revoke Database User Permissions.....	151
Create Database Components.....	152
Drop Database Components.....	152
Use the Database Scripts.....	153
Modify Storage Convention.....	153
Run the Database Scripts.....	154
Create a Database User and Storage.....	154
Drop Storage and Revoke Database User Permissions.....	154
Create Database Components.....	154
Drop Database Components.....	155
Connect Products to Database Components.....	155
Database Connections for Integration Server and Hosted Products.....	156
Define an Integration Server Connection Pool.....	157
Point Integration Server Functions at Connection Pools.....	158
Drop Redundant Database Component.....	158
Register Daemons to Automatically Start and Shut Down Products on UNIX Systems.....	159
Overview.....	160
Register Daemons for Products that Provide rc-scripts and daemon.sh.....	160
Register Daemons for Products that Provide rc-scripts but not daemon.sh.....	162
Manually Register a Daemon on an AIX System.....	163

Manually Register a Daemon on an HP-UX System.....	163
Manually Register a Daemon on a Solaris System.....	164
Manually Register a Daemon on a SUSE Enterprise Server System.....	164
Manually Register a Daemon on a Red Hat Enterprise Linux 6.x System.....	165
Manually Register a Daemon on a Red Hat Enterprise Linux 7.x System.....	165
Manually Register a Daemon on a Mac OS X System.....	166
International Operating Environments.....	169
Overview.....	170
Language Packs.....	170
Software AG Designer Language Packs.....	170
Extended Character Set.....	171
Configure Browsers and JRE Font.....	171
Configure the Proper Locale.....	172
Running in a Virtualized Environment.....	173
Overview.....	174
Running Your Products in an Amazon Elastic Compute Cloud Environment.....	174
Overview.....	174
Configuring a DNS Server.....	174
Logging In to Amazon Web Services.....	174
Creating a Security Group.....	175
Creating a Key Pair.....	175
Creating and Launching an EC2 Instance.....	176
Connecting to the Linux EC2 Instance.....	177
Connecting to the Windows EC2 Instance.....	177
Installing Your Products on the EC2 Instance.....	178
Clustering Your Products on EC2 Instances.....	179
Obtaining an Elastic IP Address and Associating It with an EC2 Instance.....	179
Maintaining and Securing EC2 Instances.....	180
Running Your Products in a VMWare Virtualized Environment.....	180
Overview.....	180
Configuring a DNS Server.....	180
Setting Up a VMWare Guest OS.....	180
Connecting to the VMWare Guest OS.....	181
Installing Your Products on the VMWare Guest OS.....	181
Clustering Your Products on VMWare Guest OSs.....	181
Securing VMWare Guest OSs.....	181

About this Guide

This guide provides pre-installation, installation, and uninstallation instructions for webMethods and Intelligent Business Operations 9.8 products.

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.

Convention	Description
	Separates two mutually exclusive choices in a syntax line. Type one of these choices. Do not type the symbol.
[]	Indicates one or more options. Type only the information inside the square brackets. Do not type the [] symbols.
...	Indicates that you can type multiple options of the same type. Type only the information. Do not type the ellipsis (...).

Online Information

Software AG Documentation Website

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

Software AG Empower Product Support Website

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

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

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

Software AG TECHcommunity

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

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

1 How to Use This Guide, Recommendations, and Product Licenses

■ How to Use This Guide	14
■ Recommendations	14
■ Product Licenses	14

How to Use This Guide

This guide 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 describes JDK support for the installer, the uninstaller, and the products, and explains installation and uninstallation logging.

Recommendations

Software AG strongly recommends that you create installation images of your 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*.

Product Licenses

You must provide license files to install and, later, to start some products. Software AG sends these license files with your installation message; save the license files in a directory whose name and path do not contain any spaces.

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 API-Portal, CentraSite, and Mediator

■ Typical Development Installation	16
■ Administration Installation	16
■ Software and Hardware Support and Requirements	17
■ Shut Down Products	19
■ Prepare Your Machine	20
■ Database Connection Information	21
■ Install Products	21
■ Complete the Installation	30
■ Uninstall Products	31

Typical Development Installation

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

- CentraSite Registry Repository and Application Server Tier
- Mediator, hosted on an Integration Server

If you intend to publish Mediator events (that is, runtime performance data and policy events) to a relational database or the Integration Server audit log, you must create certain *database components*. A database component is a grouping of database objects that is used by one or more products. You must create the MediatorEvents database component, and all of the database components for the Integration Server that hosts Mediator. For complete information about each database component, see ["Creating and Dropping Database Components" on page 121](#).

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

Administration Installation

You can manage multiple installations of supported Software AG products from Command Central. You can use Command Central to install products and fixes; create and configure product instances; and start, stop and monitor runtime components. You can also create new environments and clone existing installations using templates.

Install one Command Central to manage all of your development and test environments, and one Command Central to manage all of your production environments. Install Command Central by itself on a machine that does not host other Software AG products, but that can access all the machines in the environment that do host the Software AG products you want to manage. Restrict access to the machine to only those people who need to use Command Central (for example, release managers, infrastructure engineers, system administrators, and operators).

Install the latest release of Command Central to manage installations of supported Software AG products that are release 9.0 or later.

Platform Manager is an agent that enables Command Central users to remotely administer products that can be managed by Command Central. When you install products that can be managed by Command Central using Software AG Installer, Platform Manager is automatically installed with the products. However, you can instead install Platform Manager on target machines and then install products remotely using Command Central. For UNIX systems, you can install Platform Manager remotely from Command Central. For Windows systems, Command Central provides a simple

shell command you can use install Platform Manager. For details, see *Software AG Command Central Help*.

Software and Hardware Support and Requirements

Operating System and Browser Support

For information on operating system and browser support for your products, see the *webMethods and Intelligent Business Operations System Requirements*.

For information on supported database drivers, see "[Database Components](#)" on page 122.

Software Requirements and Considerations

Product	Software Requirements and Considerations
All	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.
CentraSite	<ul style="list-style-type: none"> ■ If you are going to install on a Linux system, the library libcrypt.so must be present to support the 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.

Hardware Requirements

Minimum and Recommended Hardware Requirements

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

Mediator has minimal or no hardware requirements beyond its host Integration Server.

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. They do not include the additional requirements listed in ["Additional Hardware Requirements" on page 18](#). 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
API-Portal	20GB	8GB	4
CentraSite			
Registry Repository*	2.25GB (3GB)	64-bit 4GB (8GB)	1 (2)
Application Server Tier*	2.25GB (3GB)	4GB (8GB)	1 (2)
Command Central	500MB	512mb (1GB for 100 nodes)	1 (2)
Database Component Configurator	60MB		
Integration Server	300MB (500MB)	1GB (2GB)	1 (2)
Platform Manager	500MB	128MB	1

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

Additional Hardware Requirements

Product	Additional Hardware Requirements
Command Central	Command Central needs additional hard drive space if you use the template-based provisioning functionality. The space required depends on the total size of template-generated files, such as images, configuration files to store, upload, and download.

Product	Additional Hardware Requirements
Platform Manager	Platform Manager needs additional hard drive space if you use Command Central's template-based functionality. The space required depends on the total size of template-generated files, such as images, configuration files to store, upload, and download.

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 products into an existing Software AG product installation directory (that contains products from the same release), running 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 the Software AG Runtime service and the CentraSite Registry Repository 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 <code>product release</code> .
Terracotta Server Array	Run the <code>bin/stop-tc-server.{bat sh}</code> command. If you are running a mirror group, shut down the passive server and then the active server.

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 API-Portal on a UNIX System

- Check the setting for shared memory (kernel parameter `shmmax`) by executing the command `sysctl -a | fgrep kernel.shmmax`. If the value is less than 629145600, log on as root user and increase the value by executing `sysctl -w kernel.shmmax=629145600` or `echo "kernel.shmmax=629145600" >> /etc/sysctl.conf`, then activate the new value by executing `sysctl -p`.
- Check the settings for the system-wide maximum number of file descriptors (kernel parameter `fs.file-max`) by executing the command `sysctl -a | fgrep fs.file-max`. If the value is less than 200000, log on as the root user and increase the value by executing `sysctl -w fs.file-max=200000` or `echo "fs.file-max=200000" >> /etc/sysctl.conf`, then activate the new value by executing `sysctl -p`.
- Check the user, group, and process settings for the maximum number of open file descriptors by executing the command `ulimit -Hn` and `ulimit -Sn`, where `-Hn` is the hard limit and `-Sn` is the soft limit. If the value is less than 200000, log on as a non-root user and increase the value by executing `ulimit -n 200000`. To permanently save this setting for the user, execute:


```
echo "<user name> soft nofile 200000" >> /etc/security/limits.conf
echo "<user name> hard nofile 200000" >> /etc/security/limits.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`.

Prepare to Install CentraSite 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 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 `nofiles` to 8192. For more information about setting and displaying the ulimits, read the man page or ask your system administrator.
- Set the `shmmax` parameter to the memory (RAM) that is physically available on your machine. Otherwise you might have problems during CentraSite startup.

Prepare to Install Integration Server on a UNIX 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 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.

Database Connection Information

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

- Most products use the DataDirect Connect JDBC 5.1 driver. For information about options supported by this 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 Website](#).
- 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. This connection option improves performance by caching prepared statements.
- 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

As you go through the Software AG Installer, you will be asked for various types of information, such as product license files and database connection parameters. Scan the

pages in this chapter that show the installer panels you will encounter, and gather the information you will need before starting the installer.

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 how to use the product selection tree.

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

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

- You can install the CentraSite Registry Repository and Application Server Tier on different machines, or in the same directory on the same machine. 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 Application Server Tier or Registry Repository on the same machine.

- CentraSite offers Eclipse plug-ins that let you work with and generate reports about CentraSite assets. You can install these plug-ins as part of Software AG Designer by selecting them on the product selection tree, or you can add the plug-ins to your own Eclipse environment later using instructions in the CentraSite documentation.
- If you want Platform Manager to publish management and monitoring events about products that are managed by Command Central, such as when products are installed or uninstalled, or when products start or stop, select Infrastructure > Platform Manager Plug-ins > Event Publishing.

On the language pack selection tree, if you select the CentraSite Application Server Tier language pack, you must also select the CentraSite Shared Files language pack.

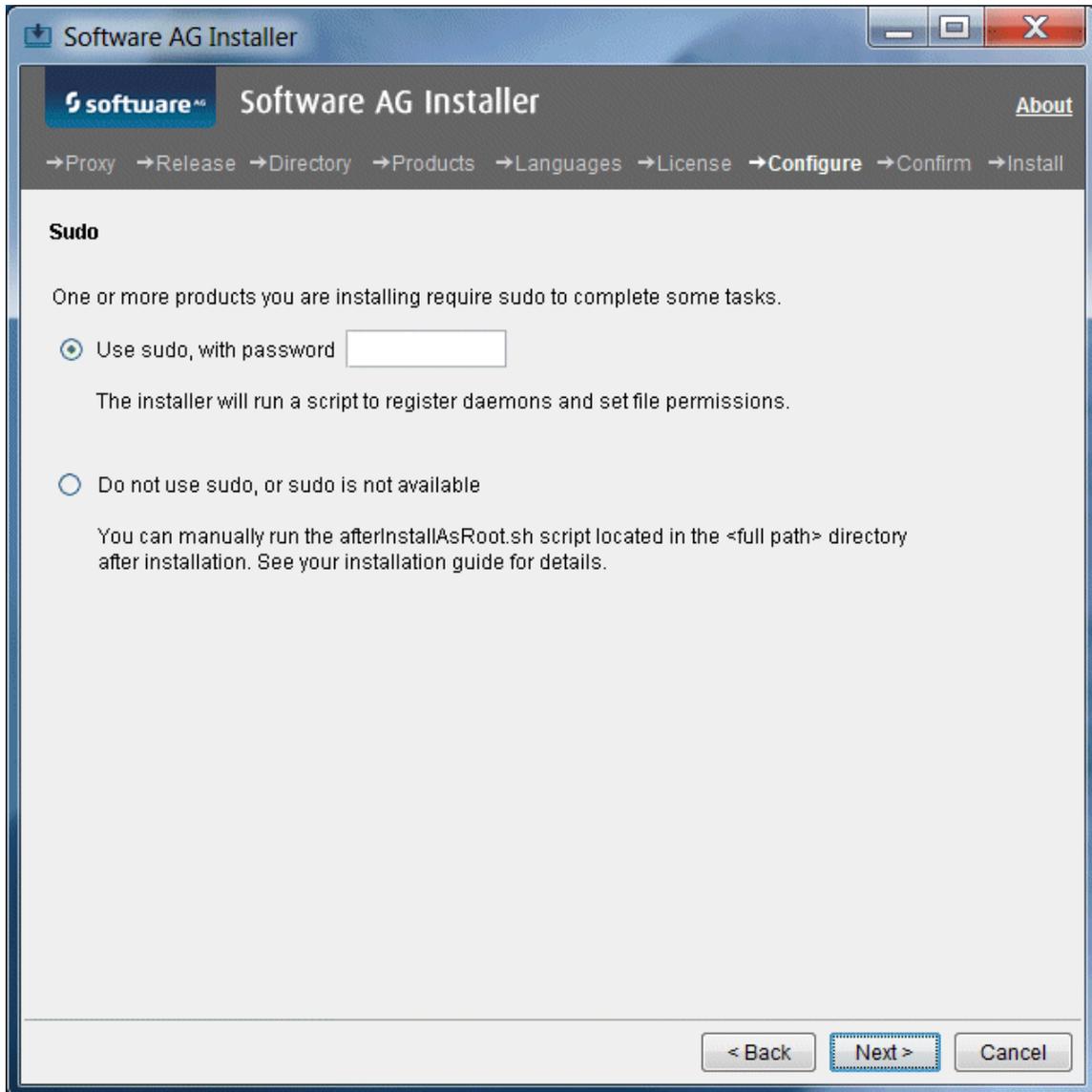
After the product selection tree, the installer displays the language pack selection tree. For information on language packs, see the international operating environments appendix in this guide. The installer then displays panels (GUI mode) or prompts (console mode) that ask for product configuration information. 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.

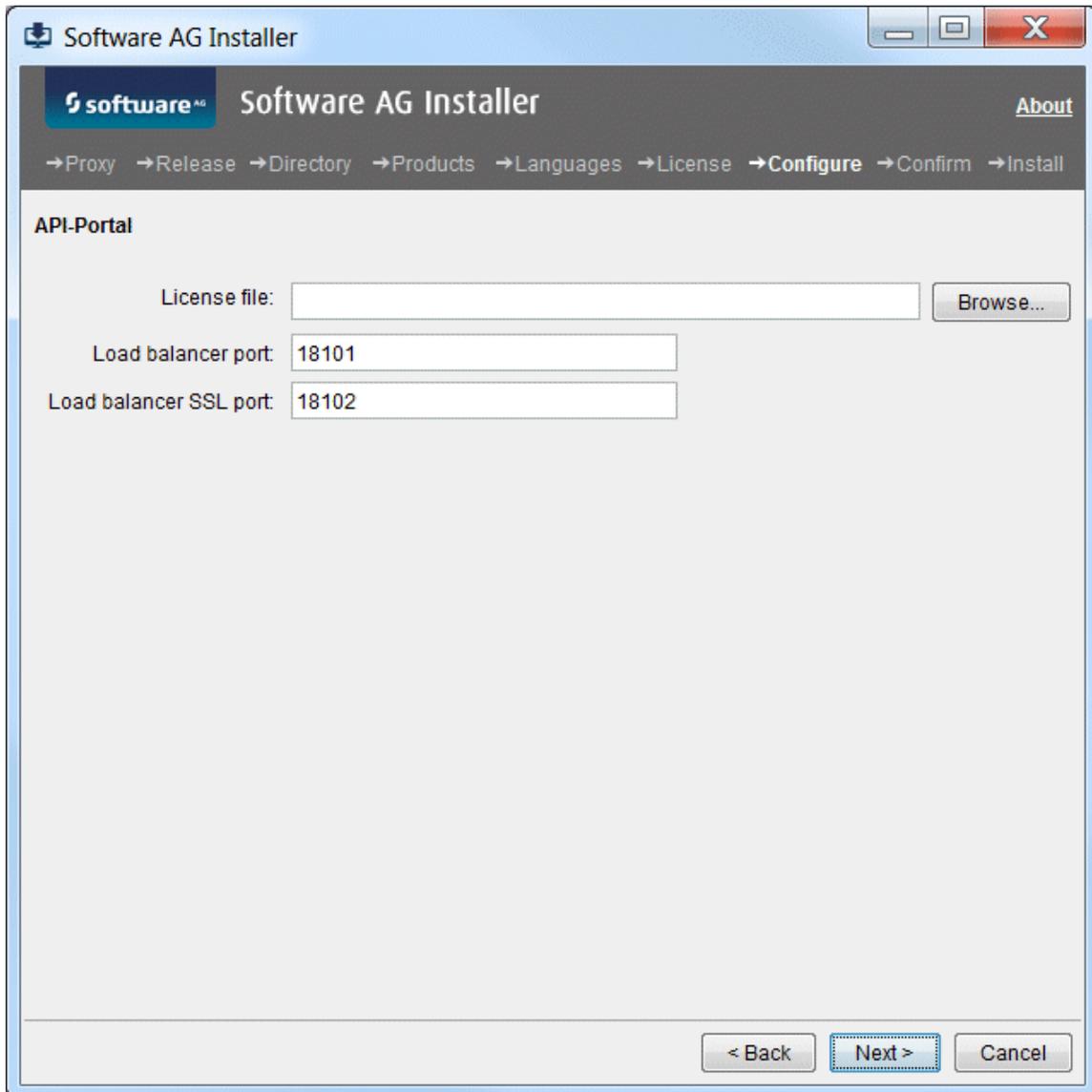


You must either have the installer execute the `afterInstallAsRoot.sh` script, or you must run the script manually after installation as explained later in this chapter. If you want to have the installer execute the script, the user under which you are running the installer must be in the `sudoers` configuration.

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.

API-Portal



The screenshot shows the 'Software AG Installer' window. The title bar reads 'Software AG Installer'. The main window has a dark header with the 'software' logo and the text 'Software AG Installer'. A breadcrumb trail at the top reads: '→Proxy →Release →Directory →Products →Languages →License →Configure →Confirm →Install'. The 'Configure' step is currently active. Below the breadcrumb, the section is titled 'API-Portal'. It contains three input fields: 'License file:' with a 'Browse...' button, 'Load balancer port:' with the value '18101', and 'Load balancer SSL port:' with the value '18102'. At the bottom of the window, there are three buttons: '< Back', 'Next >', and 'Cancel'.

CentraSite

The screenshot shows the 'Software AG Installer' window for CentraSite. The window title is 'Software AG Installer' and it has a breadcrumb trail: →Proxy →Release →Directory →Products →Languages →License →Configure →Confirm →Install. The 'Configure' step is currently active. The 'CentraSite' section contains the following fields:

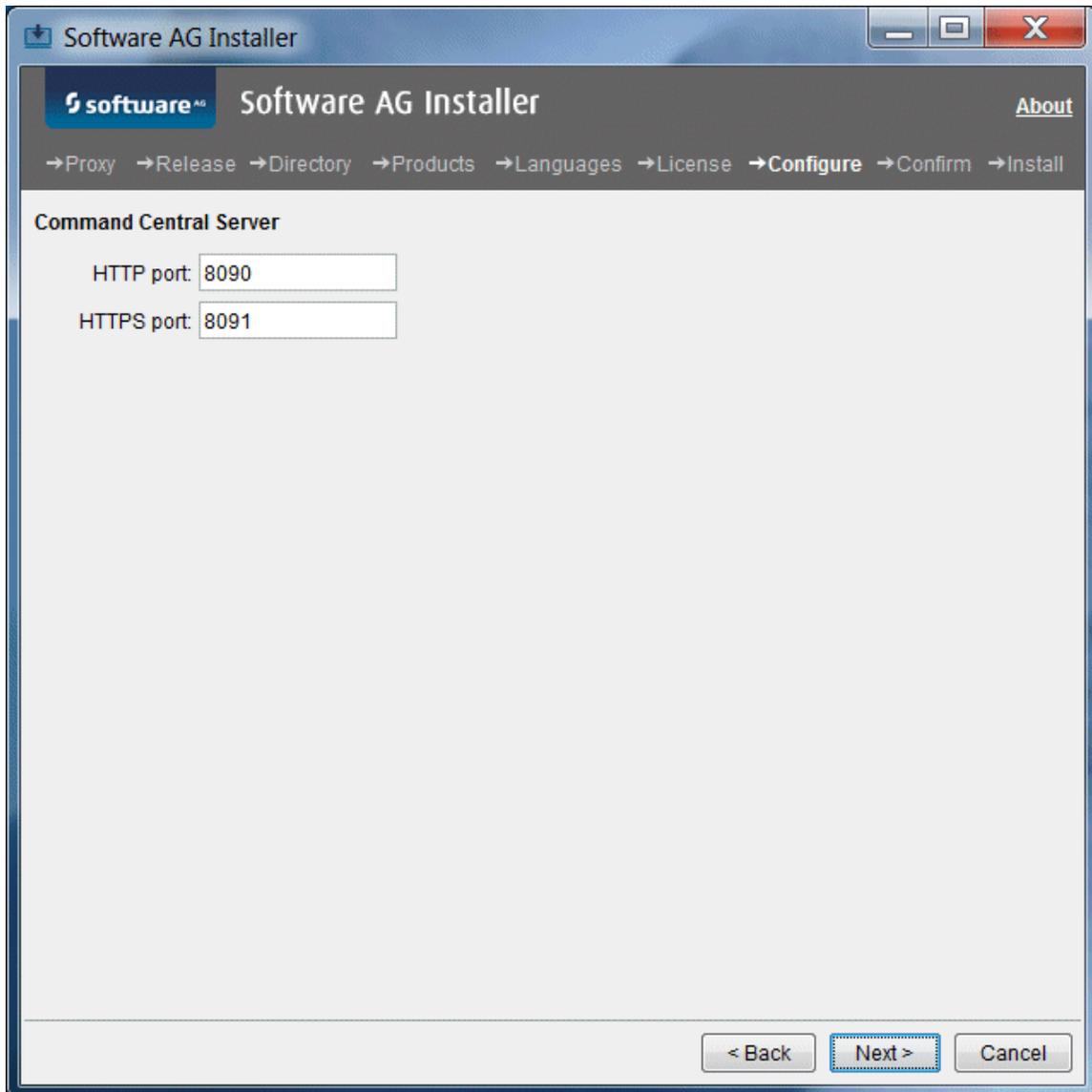
- License file:** An empty text box with a 'Browse...' button to its right.
- Registry Repository:**
 - Administration port: 53303
 - HTTPS port: 53313
- Application Server Tier:**
 - HTTP server port: 53305
 - Web application server port: 53307
 - SSL port: 53308
- Remote Registry Repository:**
 - Host or IP address: mymachine.mydomain.com
 - HTTPS port: 53313

At the bottom right, there are three buttons: '< Back', 'Next >', and 'Cancel'. The 'Next >' button is highlighted with a dashed border.

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 Software AG Web Server based on Apache Tomcat.

Field	Entry
Remote Registry Repository fields	Required when installing the Application Server Tier if the Registry Repository is on a different machine. Do not use localhost.

Command Central



The screenshot shows the 'Software AG Installer' window. The title bar reads 'Software AG Installer'. The main window has a dark header with the 'software' logo and the text 'Software AG Installer'. Below the header is a breadcrumb trail: '→Proxy →Release →Directory →Products →Languages →License →Configure →Confirm →Install'. The 'Configure' step is currently active. The main content area is titled 'Command Central Server' and contains two input fields: 'HTTP port: 8090' and 'HTTPS port: 8091'. At the bottom right, there are three buttons: '< Back', 'Next >', and 'Cancel'.

Integration Server

Software AG Installer

software^{AG} Software AG Installer [About](#)

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

Integration Server (Default Instance)

License file:

Primary port: Diagnostic port:

Install as: Application Service

Packages

Packages selected on the product tree are installed in a package repository.

Install the packages on the default instance as well.

Database Connection

You must specify the database connection or Integration Server will not work.

External RDBMS Embedded database

RDBMS:

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

Connection name:

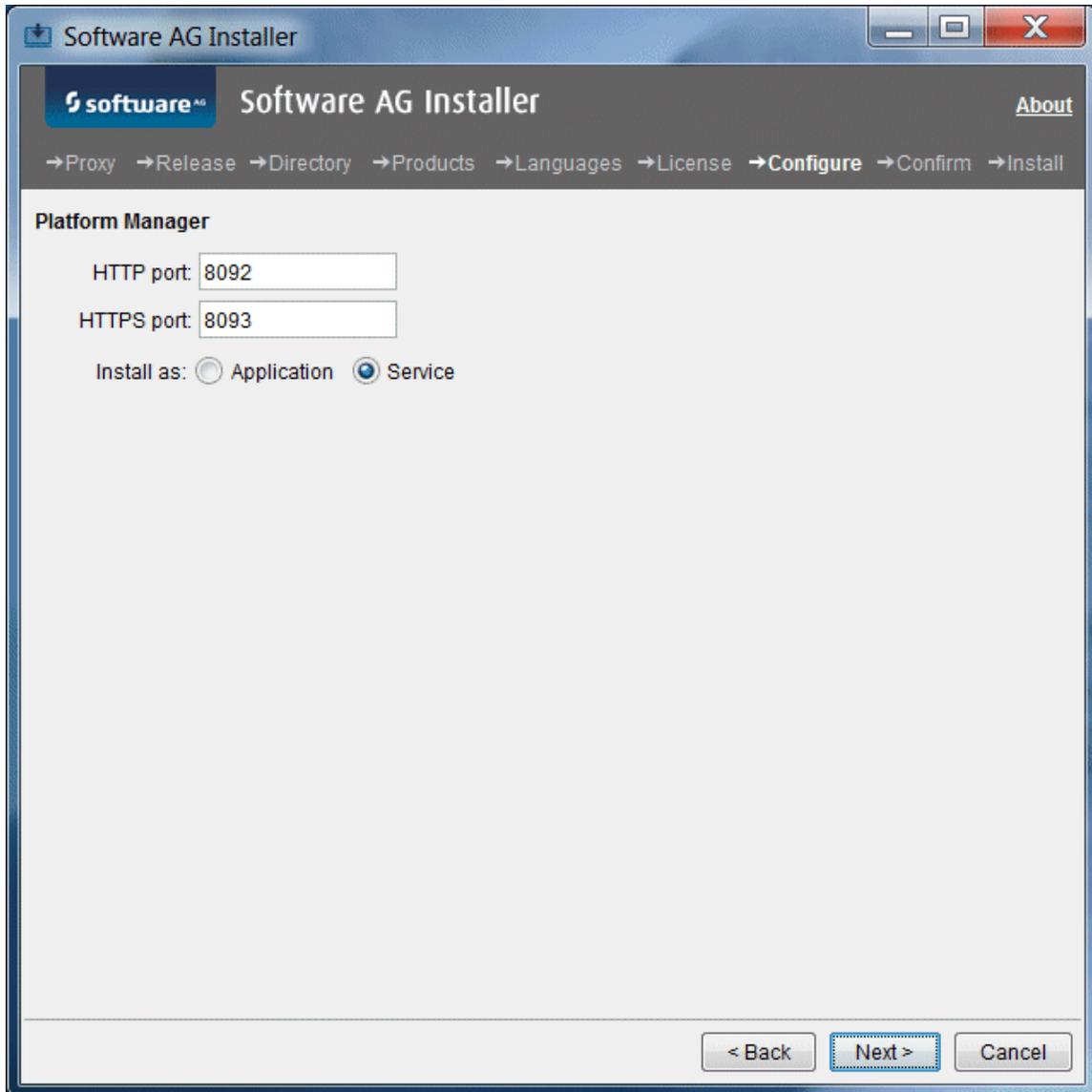
URL:

Database user: Password:

Field	Entry
License file	Specify the full path to the Mediator license file. The license for Mediator allows only partial Integration Server functionality. Install Mediator on its own host Integration Server. Do not install other products on an Integration Server that hosts Mediator, or those other products might not work properly.

Field	Entry
Install all packages...	The installer will copy the Mediator package you selected on the product selection tree into the package repository in the Integration Server installation, and will create a default Integration Server instance. If you want the installer to install Mediator on the default instance, select the check box.
Database Connection	Available when you select External RDBMS . You must decide where to store data written by Integration Server and Mediator. For complete information, see " Data Storage " on page 123.

Platform Manager



The screenshot shows the 'Software AG Installer' window with the 'Platform Manager' configuration panel. The window title is 'Software AG Installer' and it includes standard Windows window controls (minimize, maximize, close). The software logo and name are in the top left, and an 'About' link is in the top right. A breadcrumb trail at the top reads: →Proxy →Release →Directory →Products →Languages →License →Configure →Confirm →Install. The 'Platform Manager' section contains two text input fields: 'HTTP port:' with the value '8092' and 'HTTPS port:' with the value '8093'. Below these is the 'Install as:' section with two radio buttons: 'Application' (unselected) and 'Service' (selected). At the bottom right of the window are three buttons: '< Back', 'Next >' (highlighted with a dashed border), and 'Cancel'.

Platform Manager is an agent that enables Command Central users to remotely administer one or more of the products you are installing. If you plan to use Command Central, install Platform Manager as a service. If not, install Platform Manager as an application to conserve system resources.

Make a note of the ports you specify on this panel. You will need them to register this installation with Command Central.

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.

Change Default Passwords

Products are installed with default passwords. For security reasons, you should change these passwords as soon as possible. For instructions, see the product documentation.

Install Latest Fixes

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

Register Daemons and Set File Permissions

If the sudo panel appeared during installation on a UNIX system and you did not use sudo, the installer was not able to register daemons and set file permissions for these 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 the products might not work correctly.

You can register daemons for other products. For instructions, see "[Register Daemons to Automatically Start and Shut Down Products on UNIX Systems](#)" on page 159.

Complete the CentraSite Installation

Set Internet Browser

Clear your browser's cache to avoid JavaScript errors and make sure the browser is set up to allow JavaScript to execute.

Complete the Integration Server Installation on a Mac OS X or Other UNIX 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).

Uninstall Products

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

8. Uninstalling CentraSite does not delete the CentraSite database (that is, the Registry Repository). There are many circumstances in which you should retain the database after uninstalling CentraSite; for example, when the database contains information that is important for your enterprise. If you do want to delete the CentraSite database, Software AG strongly recommends making a backup copy of its contents first. Then delete the *Software AG_directory/CentraSite/data* directory.

3 Installing and Uninstalling ApplinX

- Typical Development Installation 34
- Software and Hardware Support and Requirements 34
- Shut Down Products 35
- Install ApplinX 36
- Uninstall ApplinX 39

Typical Development Installation

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

Software and Hardware Support and Requirements

Operating System and Browser Support

For information on operating system and browser support for ApplinX, see the *webMethods and Intelligent Business Operations System Requirements*.

Software Requirements

- 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 Linux x86_64 system, install the rpm package compat-libstdc++ from your operating system distribution using the vendor instructions.

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 products into an existing Software AG product installation directory (that contains products from the same release), running 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 the Software AG Runtime service and the CentraSite Registry Repository 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 <code>product release</code> .
Terracotta Server Array	Run the <code>bin/stop-tc-server.{bat sh}</code> command. If you are running a mirror group, shut down the passive server and then the active server.

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

Install ApplinX

Prepare Your Machine

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 Software AG Runtime 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.

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

As you go through the Software AG Installer, you will be asked for various types of information, such as product license files and database connection parameters. Scan the pages in this chapter that show the installer panels you will encounter, and gather the information you will need before starting the installer.

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 how to use the product selection tree.

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

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

After the product selection tree, the installer displays the language pack selection tree. For information on language packs, see the international operating environments appendix in this guide. The installer then displays panels (GUI mode) or prompts (console mode) that ask for product configuration information. 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.

Software AG Installer

software™ Software AG Installer [About](#)

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

ApplinX

License file:

Install as: Application Service

Migrate previous ApplinX data

Location of previous ApplinX installation:

Ports

If you specify multiple instances of an ApplinX component on the same machine, you must specify unique ports for each instance.

ApplinX server port: SSL port:

HTTP server port:

Administration port:

AJP port:

Complete the Installation

Install Latest Fixes

Install the latest fixes to ApplinX. Fixes are available from the Empower Product Support website. Each fix includes a readme file that contains instructions on installing the fix.

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.

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

■ Typical Development Installation	42
■ Software and Hardware Support and Requirements	42
■ Shut Down Products	43
■ Install EntireX	44
■ Uninstall EntireX	51

Typical Development Installation

The Software AG Installer offers typical development installations of products that enable you to perform a certain task. When you select a typical development installation, the installer automatically selects all 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
- Software AG Designer Eclipse with the EntireX plug-in

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

Software and Hardware Support and Requirements

Operating System and Browser Support

For information on operating system and browser support for EntireX, see the *webMethods and Intelligent Business Operations System Requirements*.

Software Requirements

- 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 Linux system, the library `libcrypt.so` must be present to support the 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`.

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-in	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 products into an existing Software AG product installation directory (that contains products from the same release), running 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 the Software AG Runtime service and the CentraSite Registry Repository 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 <code>product release</code> .
Terracotta Server Array	Run the <code>bin/stop-tc-server.{bat sh}</code> command. If you are running a mirror group, shut down the passive server and then the active server.

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

Install EntireX

Prepare Your Machine

- 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 `nofiles` 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.

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

As you go through the Software AG Installer, you will be asked for various types of information, such as product license files and database connection parameters. Scan the pages in this chapter that show the installer panels you will encounter, and gather the information you will need before starting the installer.

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 how to use the product selection tree.

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

On the product 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 EntireX Broker, Broker Agent, and Authorization Rules, 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.

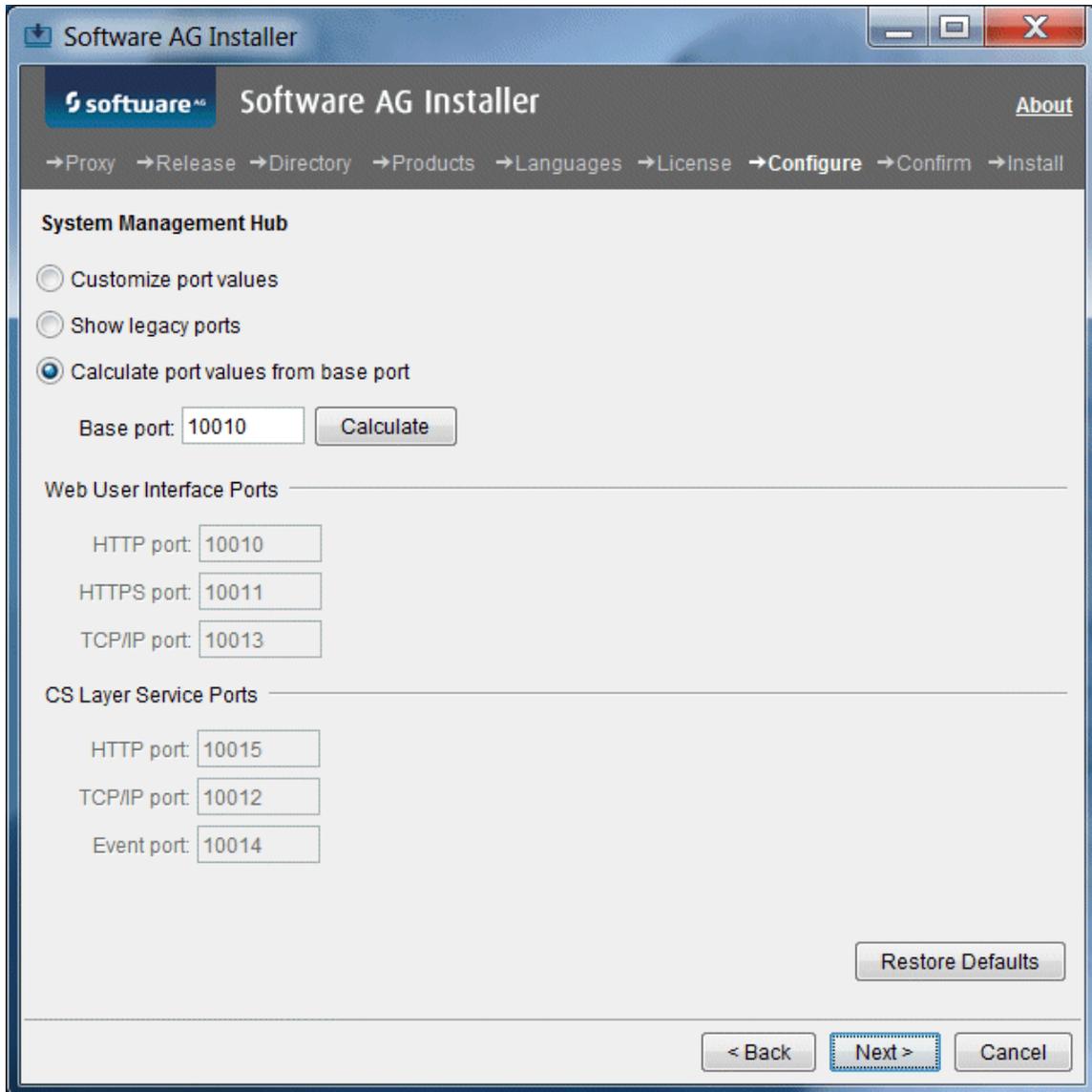
After the product selection tree, the installer displays the language pack selection tree. For information on language packs, see the international operating environments appendix in this guide. The installer then displays panels (GUI mode) or prompts (console mode) that ask for product configuration information. 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.



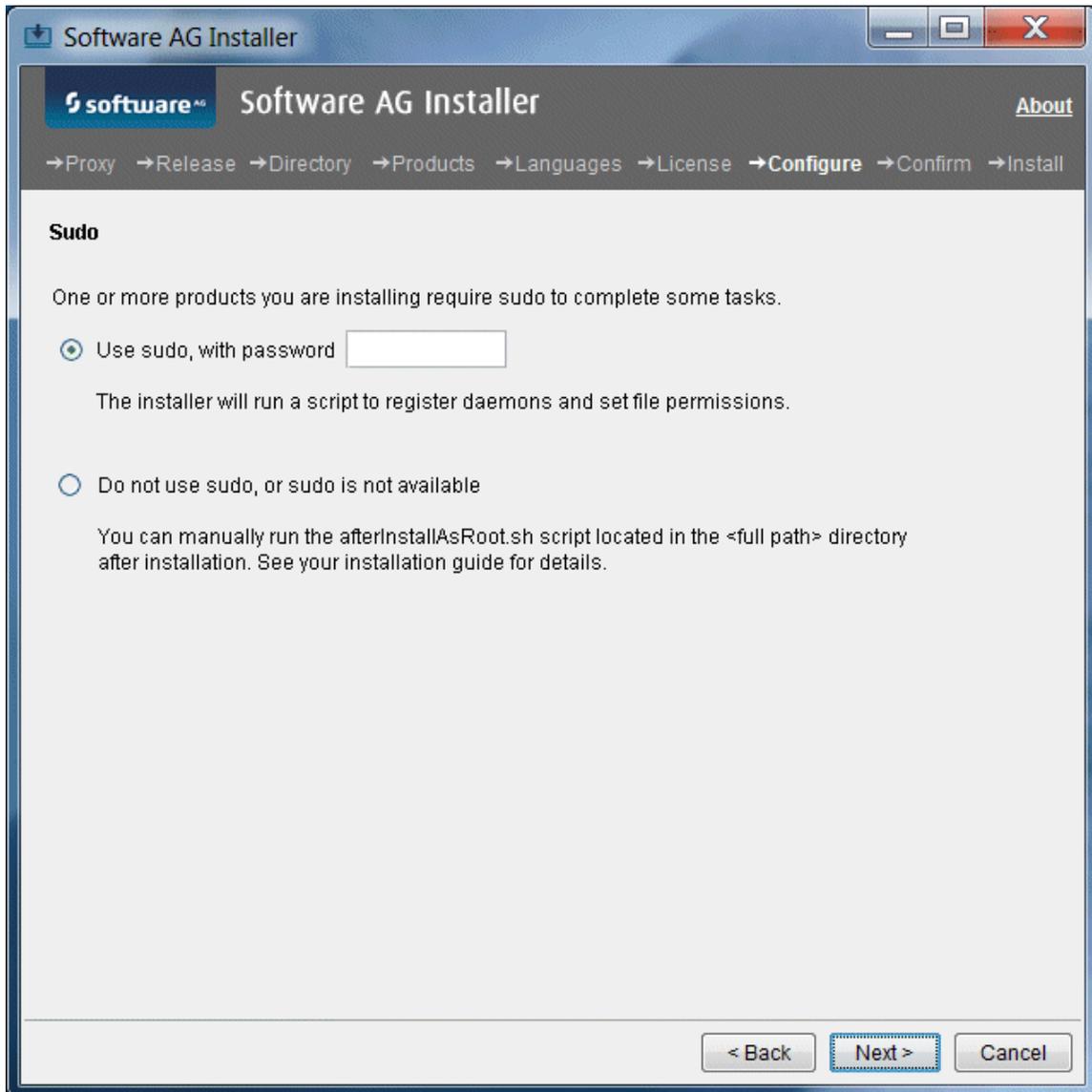
The screenshot shows the 'Software AG Installer' window with the 'System Management Hub' configuration panel. The window title is 'Software AG Installer' and it includes a breadcrumb trail: →Proxy →Release →Directory →Products →Languages →License →Configure →Confirm →Install. The 'System Management Hub' section has three radio buttons: 'Customize port values', 'Show legacy ports', and 'Calculate port values from base port' (which is selected). Below these is a 'Base port' input field containing '10010' and a 'Calculate' button. The 'Web User Interface Ports' section has three input fields: 'HTTP port: 10010', 'HTTPS port: 10011', and 'TCP/IP port: 10013'. The 'CS Layer Service Ports' section has three input fields: 'HTTP port: 10015', 'TCP/IP port: 10012', and 'Event port: 10014'. At the bottom right is a 'Restore Defaults' button. At the bottom center are three buttons: '< Back', 'Next >', and 'Cancel'.

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 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	When you install EntireX Broker: <ul style="list-style-type: none"> ■ TCP/IP and SSL ports to use for the Broker.

Field	Entry
SSL ports, and Autostart	<ul style="list-style-type: none"> Whether the installer should start the default Broker after installation and turn on the Autostart option so the Broker will start automatically whenever you start your system.
Application Monitoring Data Collector port and Autostart	<ul style="list-style-type: none"> Port to use for the Data Collector. Whether the installer should start the Data Collector automatically after installation and whenever you start your system.
System Management Hub EntireX administrator and Administration TCP/IP and SSL ports	<p>When you install the EntireX Administration component:</p> <ul style="list-style-type: none"> Administrator name to use to connect to 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 (see the EntireX documentation). TCP/IP and SSL ports to use for administration.

Complete the Installation

Install Latest Fixes

Install 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*. Each fix includes a readme file that contains instructions on installing the fix.

Register Daemons and Set File Permissions

If you installed EntireX on a UNIX system and did not use sudo:

- The installer was not able to register daemons and set file permissions for EntireX and System Management Hub. 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.

- 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.
- 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.

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.

Uninstall EntireX

1. Shut down all EntireX Brokers, RPC Servers, and customer applications that use EntireX libraries. For instructions, see the product documentation.
2. 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.
3. 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.
4. 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.
5. 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.

6. Run the Software AG Uninstaller as instructed in *Using the Software AG Installer*. Choose to uninstall both EntireX and System Management Hub.
7. Reboot your system.
8. 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

■ Typical Development Installations	54
■ Deployment Installation	55
■ Administration Installation	55
■ Software and Hardware Support and Requirements	56
■ Shut Down Products	61
■ Prepare Your Machine	62
■ Database Connection Information	65
■ Install Products	65
■ Create Database Components	86
■ Complete the Installation	87
■ Connect Products to Each Other	91
■ Uninstall Products	91

Typical Development Installations

The Software AG Installer offers typical development installations of products that enable you to perform a certain task. When you select a typical development installation, the installer automatically selects all products that make up that installation. For detailed information on how the products in each typical development installation work together, see *Understanding webMethods and Intelligent Business Operations Products*.

For some typical development installations, you must create certain *database components*. A database component is a grouping of database objects that is used by one or more products. The table below lists these database components. For complete information about each database component, see "[Creating and Dropping Database Components](#)" on [page 121](#).

For some typical development installations, you might want to install additional optional items. You can select these items after the installer selects the products that make up your selected typical development installation. The table below lists the additional optional items.

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

Typical Installation	Database Components	Additional Optional Items
Application Platform Development	All for Integration Server	Integration Server VSS, ClearCase, or Subversion Support to maintain Software AG Designer elements
ActiveTransfer	ActiveTransfer, and all for Integration Server and My webMethods Server	
Application Integration Development	All for Integration Server, My webMethods Server, and Trading Networks	Integration Server VSS, ClearCase, or Subversion Support to maintain Software AG Designer elements
Business Process Development	All for Integration Server, BPM, and My webMethods Server; optionally, Staging and Reporting	Same as Application Integration Central CentraSite Registry Repository to support collaboration

Typical Installation	Database Components	Additional Optional Items
CloudStreams Service Development	CloudStreamsEvents, and all for Integration Server	
Composite Application Development	All for My webMethods Server	Central CentraSite Registry Repository to support collaboration
Mobile Application Development	MobileSupport, and all for Integration Server	

Deployment Installation

You can deploy Software AG assets from one environment to another. For example, you can deploy assets you have developed on servers in a development environment to servers in a test or production environment. You can use either run-time deployment or repository-based deployment.

In runtime-based deployment, you use Deployer to deploy assets from servers in the source environment to servers in the target environment. If no firewall separates the environments, install Deployer on a machine that can access all source and target servers. If a firewall does separate the environments, install one Deployer on a machine in the source environment that can access all source servers and install another Deployer on a machine in the target environment that can access all target servers.

In repository-based deployment, you use the Asset Build Environment to copy assets from servers or a version control system (VCS) in the source environment to a file-based repository, and then use Deployer to deploy the assets from the repository to servers in the target environment. Install the Asset Build Environment on a machine that can access all source servers or the VCS, and also the file system that will host the repository. Install Deployer on a machine that can access all target servers, and also the file system that will host the repository.

In both types of deployment, you can deploy assets from any release of the supported products to target servers of the same release.

Administration Installation

You can manage multiple installations of supported Software AG products from Command Central. You can use Command Central to install products and fixes; create

and configure product instances; and start, stop and monitor runtime components. You can also create new environments and clone existing installations using templates.

Install one Command Central to manage all of your development and test environments, and one Command Central to manage all of your production environments. Install Command Central by itself on a machine that does not host other Software AG products, but that can access all the machines in the environment that do host the Software AG products you want to manage. Restrict access to the machine to only those people who need to use Command Central (for example, release managers, infrastructure engineers, system administrators, and operators).

Install the latest release of Command Central to manage installations of supported Software AG products that are release 9.0 or later.

Platform Manager is an agent that enables Command Central users to remotely administer products that can be managed by Command Central. When you install products that can be managed by Command Central using Software AG Installer, Platform Manager is automatically installed with the products. However, you can instead install Platform Manager on target machines and then install products remotely using Command Central. For UNIX systems, you can install Platform Manager remotely from Command Central. For Windows systems, Command Central provides a simple shell command you can use install Platform Manager. For details, see *Software AG Command Central Help*.

Software and Hardware Support and Requirements

Operating System and Browser Support

For information on operating systems, RDBMSs, and browsers that are supported by your products, see the *webMethods and Intelligent Business Operations System Requirements*.

For information on supported database drivers, see "[Database Components](#)" on page 122.

Software Requirements and Considerations

Product	Software Requirements and Considerations
All	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.
AgileApps	Download the following to the same directory anywhere on the machine:

Product	Software Requirements and Considerations
	<ul style="list-style-type: none"> ■ Java Transaction API (JTA) library jar 1.0.1a (jta.jar). ■ MySQL database driver 5.1.24 (mysql-connector-java-5.1.24-bin.jar).
webMethods Broker	<ul style="list-style-type: none"> ■ On Windows and Linux systems, Software AG offers dedicated 64-bit and 32-bit versions of Broker Server. The 64-bit version is installed on 64-bit systems, while the 32-bit version is installed on 32-bit systems. ■ On Solaris, HP-UX, and AIX systems, Software AG offers 64-bit and 32-bit (LP32 Object Code) versions of the webMethods Broker C API. If you select the C API for installation, the installer installs both versions, in the <i>Software AG_directory/Broker/lib</i> and <i>/lib32</i> directories, respectively. ■ If you are going to install on a Solaris 10 system, install the SUNWxcu4 package. ■ If you are going to install on a Solaris 11 system, install the system/xopen/xcu4 package. ■ If you are going to install on a Linux system, the library libcrypt.so must be present to support the 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.
Integration Server	On Mac OS X systems, Integration Servers cannot connect to webMethods Brokers using SSL.
Locate	On Windows systems, install Microsoft Visual C++ Runtime 2005 or higher in any directory on the machine that will host Locate.
Mobile Administrator	<ul style="list-style-type: none"> ■ When installing Mobile Administrator on a physical machine, you need some common development tools. Install those tools by running the appropriate commands below. <ul style="list-style-type: none"> ■ Red Hat Enterprise Linux / CentOS: <pre>yum install gettext make gcc gcc-c++ openssl-devel \ libicu-devel zlib-devel readline-devel autoconf \ perl-ExtUtils-MakeMaker</pre>

Product	Software Requirements and Considerations
	<ul style="list-style-type: none"> ■ Debian: <pre>apt-get install gettext make gcc g++ libssl-dev curl \ libicu-dev zlib1g-dev libreadline6-dev autoconf \ libmodule-build-perl libmodule-install-perl libc6-dev \ libmysql++-dev libsqlite3-dev build-essential \ libssl-dev</pre> ■ SuSE Enterprise Linux Server: <pre>zypper install gettext-tools make gcc libopenssl-devel \ curl libicu-devel zlib-devel readline-devel autoconf \ perl-ExtUtils-PkgConfig libxslt-devel libMagickWand1 \ libcurl-devel p7zip ImageMagick-Devel libxml2-devel \ libmysqlclient-devel apache2-worker \ apache2-mod_xsendfile mysql-client gcc-c++ mysql</pre> ■ When installing Mobile Administrator on a virtual machine (used when hosting Mobile Administrator in the cloud or running Mobile Administrator for demos), install Oracle VM VirtualBox or Vagrant.
Mobile Designer	<ul style="list-style-type: none"> ■ Install an integrated development environment (IDE). Software AG recommends using the Eclipse provided with Software AG Designer on the Software AG Installer. ■ If you are going to use Mobile Designer separately from Software AG Designer, install Apache ANT 1.8 or higher using the instructions in the vendor documentation.

Hardware Requirements

Minimum and Recommended Hardware Requirements

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

Most products that are hosted by Integration Server (for example, CloudStreams or Process Engine) or by My webMethods Server (for example, Business Console and Task Engine) have minimal or no hardware requirements beyond the host product.

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. They do not include the additional requirements listed in "[Additional Hardware Requirements](#)" on page 60. 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
AgileApps	20GB	8GB	1
webMethods Broker	750MB (1.2GB)	512MB (2GB)	1
Collaboration	1.3GB	2GB (3GB)	2 (4)
Command Central	500MB	512MB (1GB for 100 nodes)	1 (2)
Content Service Platform Server	1GB	2GB	1
Database Component Configurator	60MB		
Software AG Designer with all Software AG plug-ins	5GB	1.5GB (2GB)	1 (2)
Integration Server	300MB (500MB)	1GB (2GB)	1
Locate	20GB (40GB)	512MB (4GB)	1 (3)
MashZone	10GB	7GB (16GB)	2 (4)
Mobile			
Mobile Administrator	300MB	4GB	2
Mobile Designer	1GB	1GB	1
My webMethods Server	300MB (500MB)	1GB (2GB)	1
OneData			

Product	Hard Drive Space	RAM	CPUs
Server	512MB	2GB (4GB)	1 (2)
MDR Modules	50MB		
Customer MDM Template	20MB		
Platform Manager	500MB	128MB	1
Trading Networks Server	50MB		1

Additional Hardware Requirements

Product	Additional Hardware 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.
AgileApps	AgileApps needs additional hard drive space for its database and document storage. A quad-core AMD Opteron 2214 or better CPU is recommended for use with AgileApps.
webMethods Broker	webMethods Broker might need additional hard drive space if your documents are large, or if your clients use many guaranteed documents.
Command Central	Command Central needs additional hard drive space if you use the template-based provisioning functionality. The space required depends on the total size of template-generated files, such as images, configuration files to store, upload, and download.
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.
Software AG Designer	<i>Using the Software AG Installer</i> lists free space the Software AG Installer requires in its system temp (Windows) or temporary

Product	Additional Hardware Requirements
	(UNIX) directory. For Software AG Designer Eclipse, the installer needs 700MB additional free hard drive space in that directory.
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.
Locate	The hard disk space for Locate must be in a RAID configuration. The range of hardware requirements in the table is intended to accommodate your needs up to the largest dataset you could install (see " Complete the Locate Installation " on page 89).
Mobile Administrator	You will need additional hard drive space depending on the number of applications you plan to add, the size of their source code, builds, screen shots, and logs.
Mobile Designer	You will need additional hard drive 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.
Platform Manager	Platform Manager needs additional hard drive space if you use Command Central's template-based functionality. The space required depends on the total size of template-generated files, such as images, configuration files to store, upload, and download.
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> .

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 products into an existing Software AG product installation directory (that contains products from the same release), running 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 the Software AG Runtime service and the CentraSite Registry Repository 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 <code>product release</code> .
Terracotta Server Array	Run the <code>bin/stop-tc-server.{bat sh}</code> command. If you are running a mirror group, shut down the passive server and then the active server.

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 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

Limit	Value
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 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 Collaboration or MashZone on a Linux System

- Check the setting for shared memory (kernel parameter `shmmx`) by executing the command `sysctl -a | fgrep kernel.shmmx`. If the value is less than 629145600, log on as root user and increase the value by executing `sysctl -w`

```
kernel.shmmax=629145600 or echo "kernel.shmmax=629145600" >> /etc/
sysctl.conf, then activate the new value by executing sysctl -p.
```

- Check the settings for the system-wide maximum number of file descriptors (kernel parameter `fs.file-max`) by executing the command `sysctl -a | fgrep fs.file-max`. If the value is less than 200000, log on as the root user and increase the value by executing `sysctl -w fs.file-max=200000` or `echo "fs.file-max=200000" >> /etc/sysctl.conf`, then activate the new value by executing `sysctl -p`.
- Check the user, group, and process settings for the maximum number of open file descriptors by executing the command `ulimit -Hn` and `ulimit -Sn`, where `-Hn` is the hard limit and `-Sn` is the soft limit. If the value is less than 200000, log on as a non-root user and increase the value by executing `ulimit -n 200000`. To permanently save this setting for the user, execute:


```
echo "<user name> soft nofile 200000" >> /etc/security/limits.conf
echo "<user name> hard nofile 200000" >> /etc/security/limits.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`.

Prepare to Install Integration Server on a Mac OS X or Other UNIX 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 Mac OS X or other UNIX 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 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 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.

Database Connection Information

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

- Most products use the DataDirect Connect JDBC 5.1 driver. For information about options supported by this 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 Website](#).
- 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

As you go through the Software AG Installer, you will be asked for various types of information, such as product license files and database connection parameters. Scan the pages in this chapter that show the installer panels you will encounter, and gather the information you will need before starting the installer.

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 how to use the product selection tree.

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

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

- If you want Platform Manager to publish management and monitoring events about products that are managed by Command Central, such as when products are installed or uninstalled, or when products start or stop, select Infrastructure > Platform Manager Plug-ins > Event Publishing.
- If you select packages for Integration Server, the installer will copy the packages into a package repository in the Integration Server installation. “Packages” include the products listed under Integration Server in the tree as well as products that are hosted by Integration Server but listed elsewhere, such as adapters, eStandards Modules, and CloudStreams. The installer will also create a default Integration Server instance and will ask whether to install all packages in the package repository on the default instance. On the language pack selection tree, the installer will copy all language packs you select into the package repository and install them on the default Integration Server instance. After installation, you can create additional instances and install packages and language packs from the package repository on those instance and the default instance. For instructions, see the *webMethods Integration Server Administrator’s Guide*.
- If you install My webMethods Server, and later install Business Console, 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.

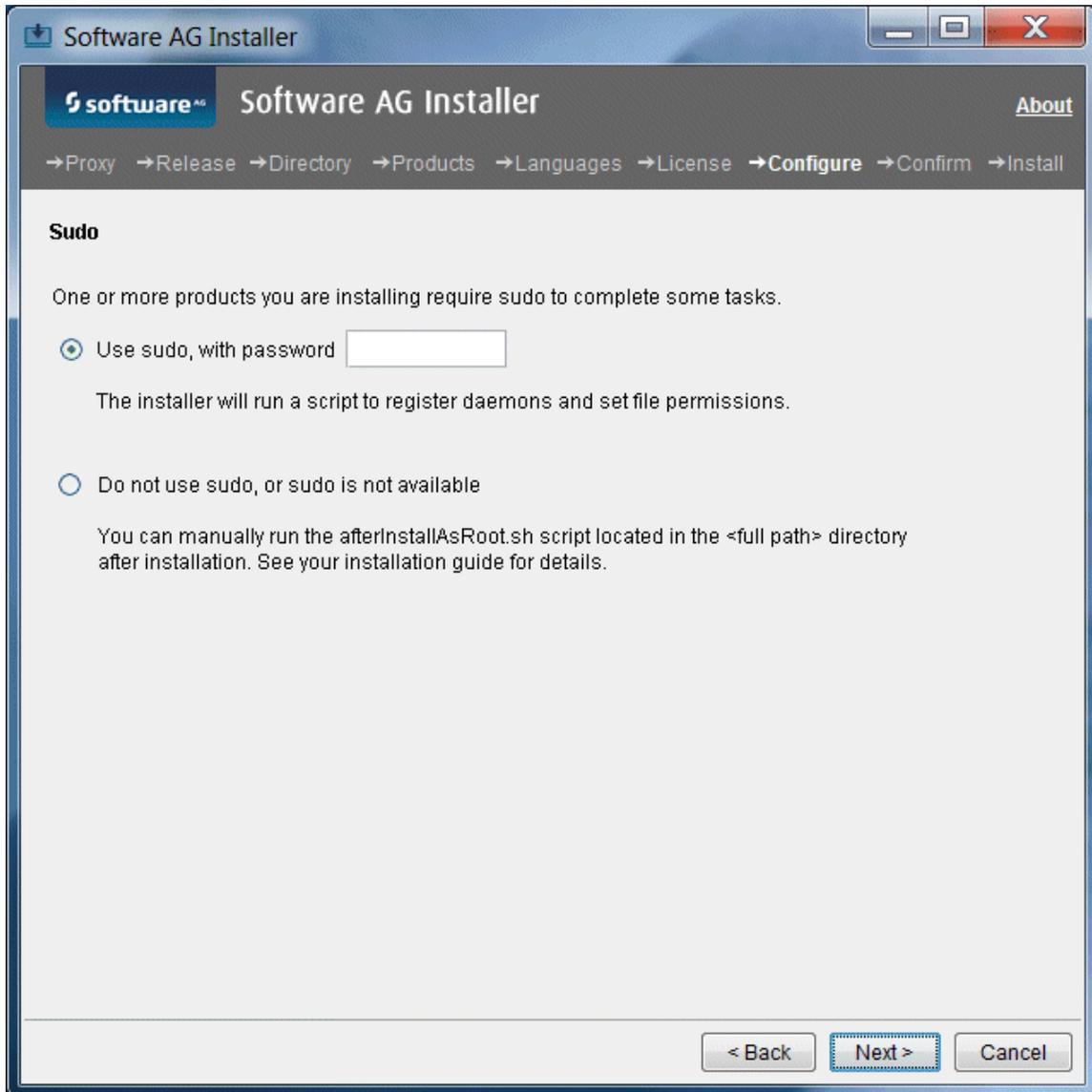
After the product selection tree, the installer displays the language pack selection tree. For information on language packs, see the international operating environments appendix in this guide. The installer then displays panels (GUI mode) or prompts (console mode) that ask for product configuration information. 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 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

Field	Entry
	run ActiveTransfer Server as a Gateway, specify the full path to the license file that permits that functionality.
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.

AgileApps

Software AG Installer

software™ Software AG Installer [About](#)

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

AgileApps

License file:

JTA library jar:

MySQL driver jar:

Database Connection

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

Host:

Port:

Database user:

Password:

< Back Installing webMethods and Intelligent Business Operations Products Version 9.8

Field	Entry
JTA library jar	Full path to the JTA library you downloaded.
MySQL driver jar	Full path to the MySQL driver jar file you downloaded.
Database Connection	AgileApps uses a database to store assets such as custom objects, JSPs, Java code, business processes, and templates.

webMethods Broker

Software AG Installer

software^{AG} Software AG Installer [About](#)

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

Broker

Broker Monitor

Port: 6850

IP address to bind to: ALL

Create a Broker Server configuration

License file:

Port: 6849

SSL ports: 6848 6847 Parallel ports: 6846 6845

Data directory: C:\SoftwareAGxyz\Broker\data\lawbrokers96\default

Storage size: Small (64MB log file, 1GB storage file)
 Medium (256MB log file, 4GB storage file)
 Large (512MB log file, 8GB storage file)

When you install webMethods Broker, you install the following:

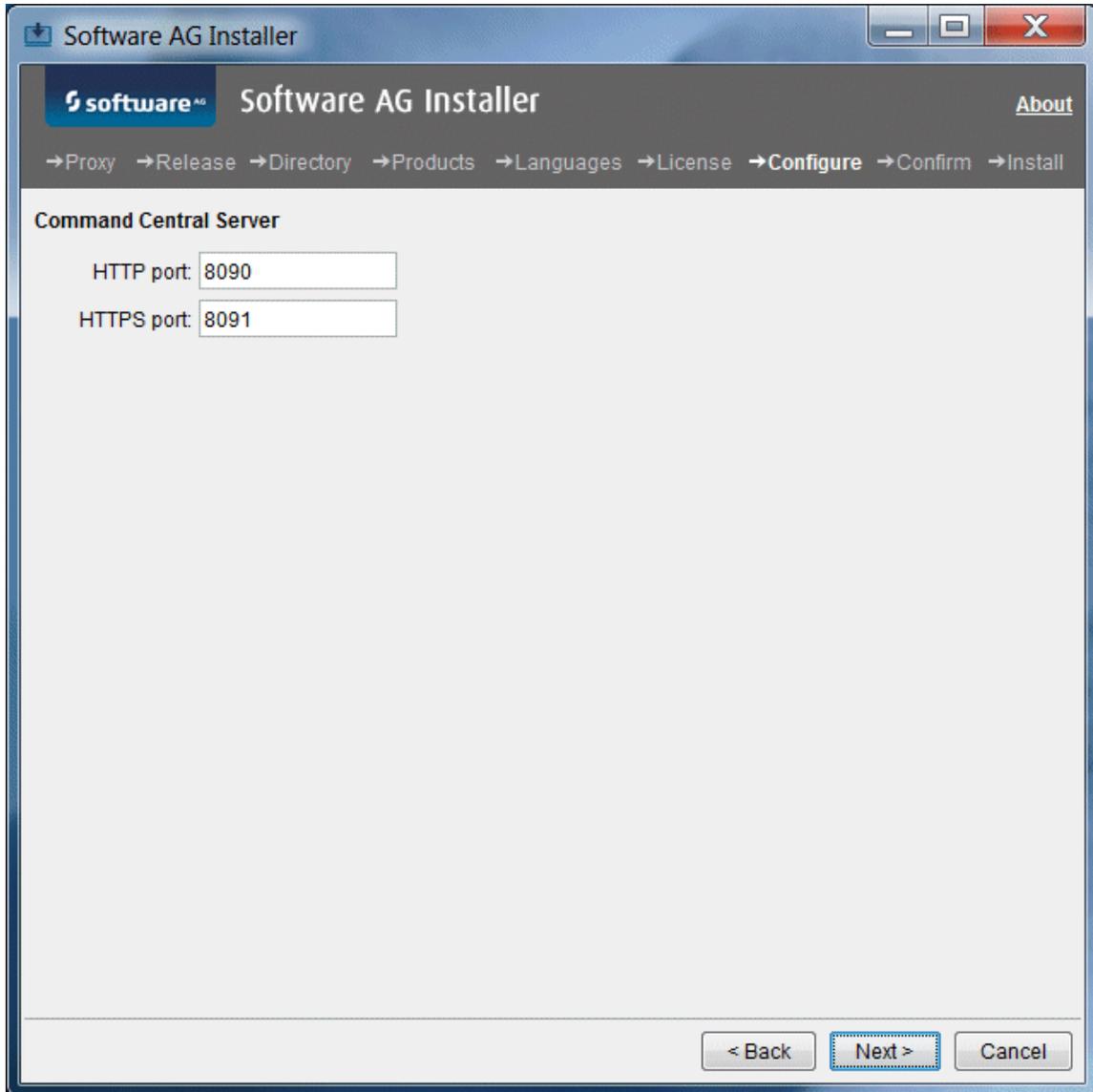
- A default Broker. Brokers execute client messaging requests.
- Optionally, a Broker Server. Broker Servers host Brokers; they receive client requests, send them to Brokers, and return responses to clients. They also manage memory and disk resources for the Brokers they host.
- A Broker Monitor. Broker 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 by the installer or if you want to create a combined storage session for configuration and run-time data. If you do not need to back up configuration data without shutting down your Broker Server, using a combined session might save you a small amount of disk space. If you choose to not create the Broker Server configuration at this time, you must create it after installation is complete, using instructions in <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 by the installer and you want to create separate storage sessions for configuration (metadata) and run-time data. Using separate storage sessions minimizes the risk of corruption that goes with a combined storage location and enables you to back up configuration data without having to shut down your Broker Server.</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>

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

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

Command Central



Content Service Platform Server

Software AG Installer

software™ Software AG Installer [About](#)

→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.

Integration Server

Field	Entry
Install as	If you are installing Integration Server with the Application Platform package and Software AG Designer with the Application Platform plug-ins in the same installation directory for development purposes, install Integration Server as an application. The Application Platform plug-ins invoke scripts that start and stop Integration Server from Software AG Designer.

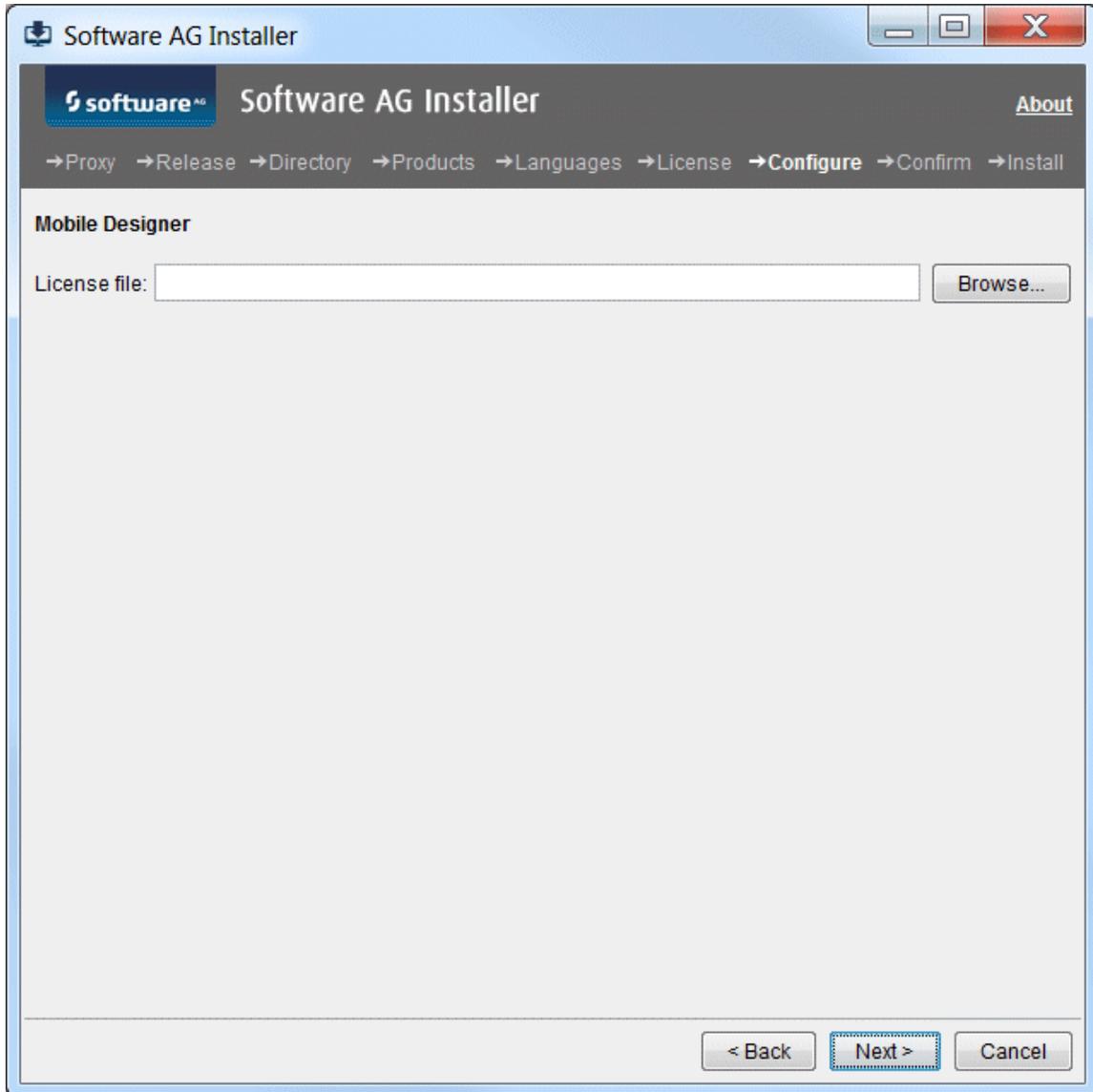
Field	Entry
License file	<p>The license file you specify varies based on the product you are installing. Specify the full path to the license file indicated below.</p> <ul style="list-style-type: none">■ Installing a production Integration Server - full path to the Integration Server production license file.■ Installing Integration Server as an Enterprise Gateway - full path to the Enterprise Gateway license file.■ Installing CloudStreams when you have not licensed Integration Server - full path to the CloudStreams license file. <p>The licenses for Enterprise Gateway and CloudStreams allow only partial Integration Server functionality. Install each of these products on its own host Integration Server. Do not install other products on an Integration Server that hosts Enterprise Gateway or CloudStreams, or those other products might not work properly.</p>
Install all packages...	<p>The installer will copy the packages you selected on the product selection tree into the package repository in the Integration Server installation, and will create a default Integration Server instance. If you want the installer to install all the packages in the package repository on the default instance, select the check box.</p>
Database Connection	<p>Available when you select External RDBMS. You must decide where to store data written by Integration Server. For complete information, see "Data Storage" on page 123.</p>

MashZone

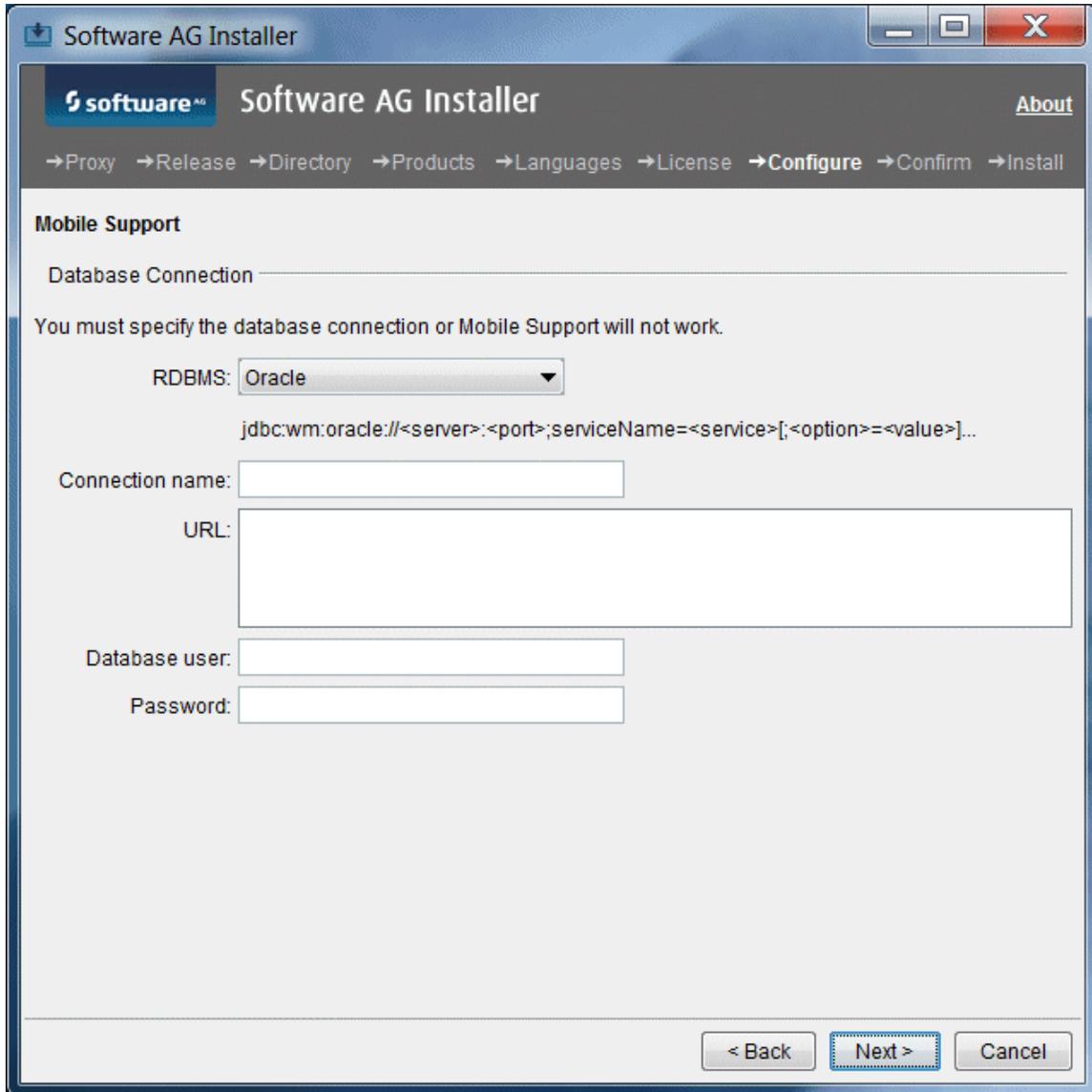
Select a system configuration for MashZone that can handle your expected usage needs.

System Configuration	RAM	CPUs
Small	4GB	2
Medium	16GB	4
Large	64GB	8

Mobile Designer



Mobile Support



The screenshot shows the 'Software AG Installer' window with the 'Mobile Support' configuration page. The window title is 'Software AG Installer' and it has standard Windows window controls. The main title bar contains the 'software' logo and 'Software AG Installer', with an 'About' link on the right. A breadcrumb trail at the top reads: →Proxy →Release →Directory →Products →Languages →License →Configure →Confirm →Install. The 'Configure' step is currently active.

Mobile Support

Database Connection _____

You must specify the database connection or Mobile Support will not work.

RDBMS:

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

Connection name:

URL:

Database user:

Password:

At the bottom right, there are three buttons: '< Back', 'Next >' (which is highlighted with a dashed border), and 'Cancel'.

My webMethods Server

Software AG Installer

software™ Software AG Installer [About](#)

→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

You must specify the database connection or My webMethods Server will not start.

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 RDBMS . You must decide where to store data written by My webMethods Server. For complete information, see " Data Storage " on page 123.

OneData

The screenshot shows the 'Software AG Installer' window with the 'OneData' configuration page. The window title is 'Software AG Installer' and it has standard Windows window controls. The installer is currently on the 'Configure' step, as indicated by the breadcrumb trail: '→Proxy →Release →Directory →Products →Languages →License →Configure →Confirm →Install'. The 'OneData' section contains the following fields and options:

- License file:** A text input field with a 'Browse...' button to its right.
- HTTP port:** A text input field containing the value '9090'.
- HTTPS port:** A text input field containing the value '9091'.
- Install as:** Two radio buttons: 'Application' (unselected) and 'Service' (selected).
- Repository:** A section header followed by two text input fields: 'Repository ID:' and 'Repository name:'.
- Database Connection Part 1:** A section header followed by a warning message: 'You must specify the database connection or OneData will not start.' Below this is a dropdown menu for 'RDBMS:' set to 'Oracle'. Underneath is a text input field for a JDBC connection string with the placeholder: 'jdbc:wm:oracle://<server>:<port>;serviceName=<service>[,<option>=<value>]...'. Below that is a text input field for 'Connection prefix:'.

At the bottom right of the window, there are three buttons: '< Back', 'Next >', and 'Cancel'. The 'Next >' button is highlighted with a dashed border, indicating it is the active option.

Software AG Installer

software™ Software AG Installer [About](#)

→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:

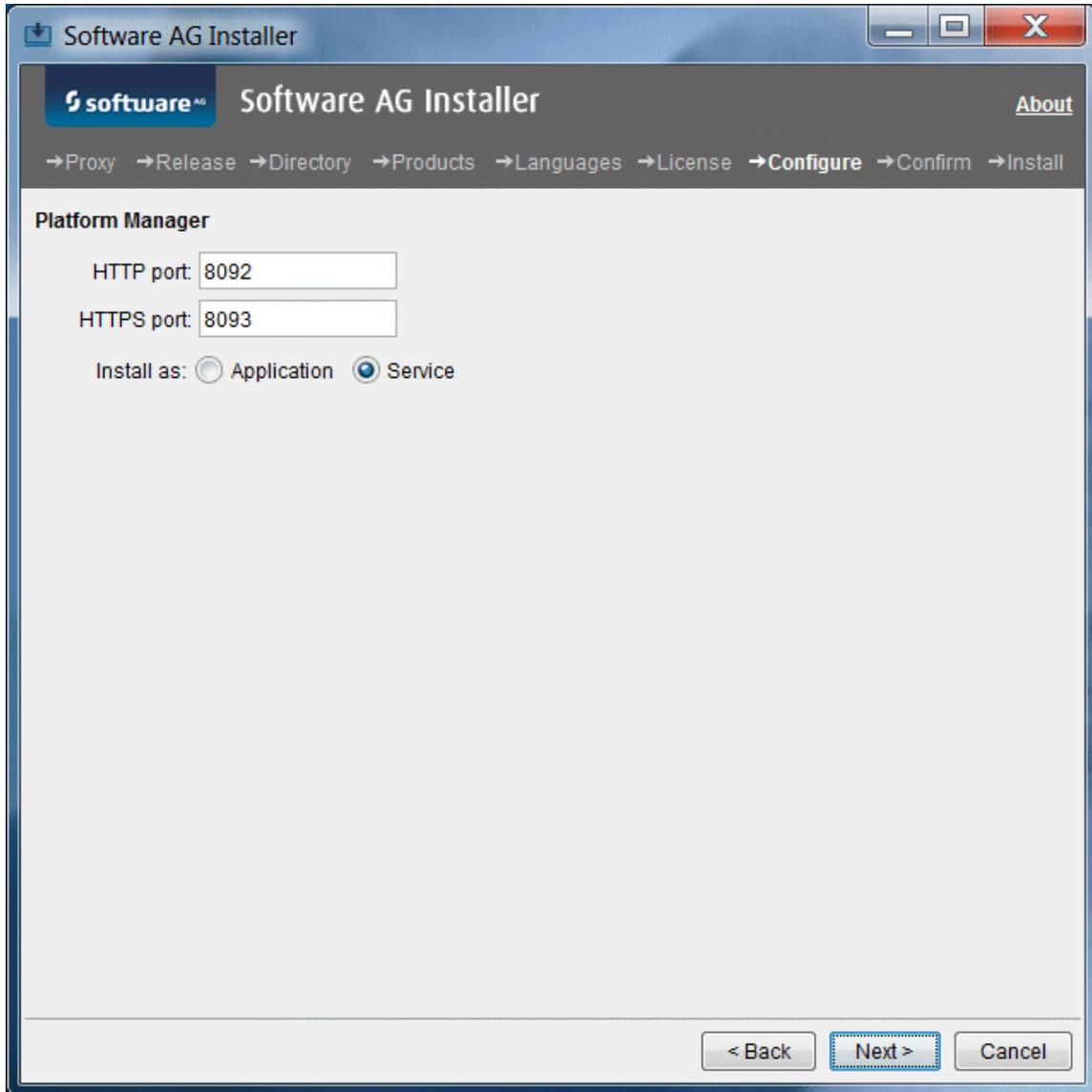
Schema name:

< 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

Field	Entry
	Area after you start OneData. For instructions, see the OneData documentation.
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>

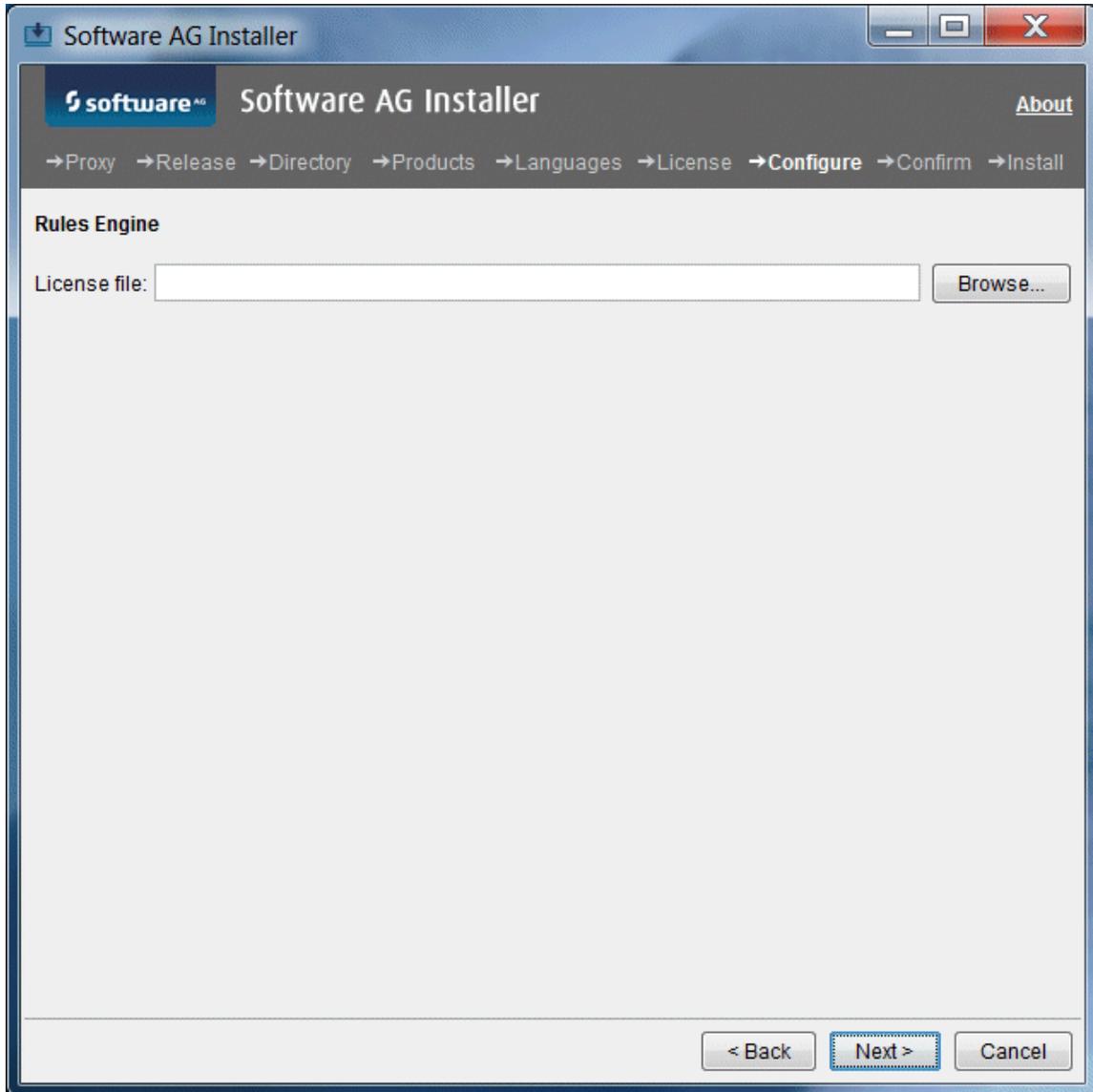
Platform Manager



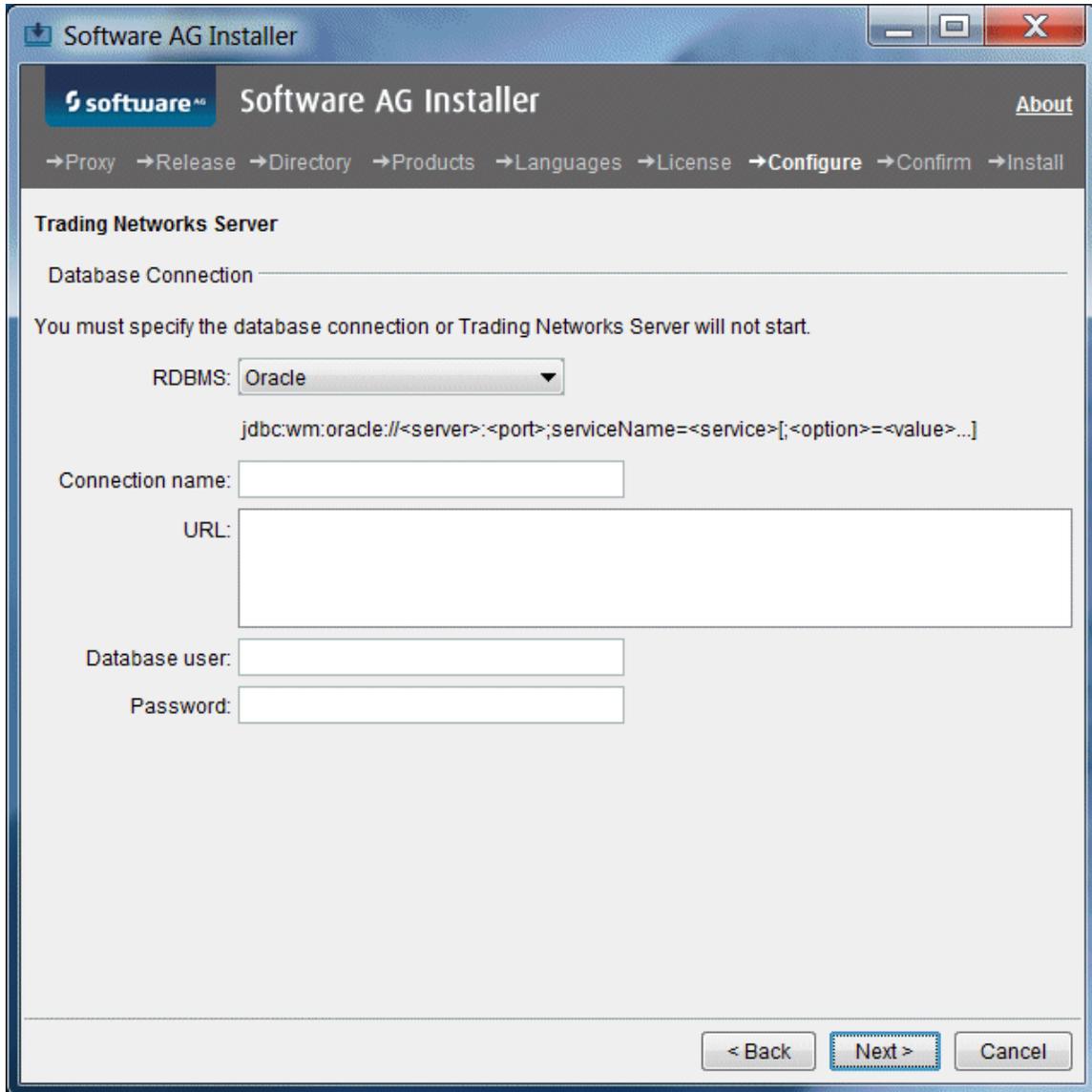
Platform Manager is an agent that enables Command Central users to remotely administer one or more of the products you are installing. If you plan to use Command Central, install Platform Manager as a service. If not, install Platform Manager as an application to conserve system resources.

Make a note of the ports you specify on this panel. You will need them to register this installation with Command Central.

Rules Engine



Trading Networks Server



The screenshot shows the 'Software AG Installer' window for the 'Trading Networks Server'. The window title is 'Software AG Installer' and it has standard Windows window controls. The main title bar says 'software Software AG Installer' with an 'About' link. A breadcrumb trail at the top reads: '→Proxy →Release →Directory →Products →Languages →License →Configure →Confirm →Install'. The current step is 'Trading Networks Server'. Below this, the section is 'Database Connection'. A message states: 'You must specify the database connection or Trading Networks Server will not start.' The configuration options are: 'RDBMS:' with a dropdown menu set to 'Oracle'; a text field for the JDBC URL with the placeholder 'jdbc:wm:oracle://<server>:<port>;serviceName=<service>[;<option>=<value>...]'; 'Connection name:' with an empty text field; 'URL:' with a large empty text area; 'Database user:' with an empty text field; and 'Password:' with an empty text field. At the bottom right, there are three buttons: '< Back', 'Next >', and 'Cancel'.

Create Database Components

Many products require you to create database components. For a list of such products and instructions, see ["Creating and Dropping Database Components" on page 121](#).

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.

Change Default Passwords

Products are installed with default passwords. For security reasons, you should change these passwords as soon as possible. For instructions, see the product documentation.

Install Latest Fixes

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

Register Daemons and Set File Permissions

If the sudo panel appeared during installation on a UNIX system and you did not use sudo, the installer was not able to register daemons and set file permissions for these 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 the products might not work correctly.

You can register daemons for other products. For instructions, see "[Register Daemons to Automatically Start and Shut Down Products on UNIX Systems](#)" on page 159.

Complete the AgileApps Installation

AgileApps requires you to install and configure a MySQL database and Memcached. For instructions, see the AgileApps documentation.

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:

```
cspsconfigurator.{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` file. 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 `msp install` to complete the installation of the service and create Windows Start menu entries.

Complete the Integration Server Installation on a Mac OS X or Other UNIX 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 Locate Installation

You must now download datasets that contain address reference data for a specific country or region to use with Locate. Go to the Empower Product Support website. Under Download Products, click Software Downloads, and then click Software Download Center (SDC). In the Releases menu, click Software AG Product Suite 9.8. In the Products menu, click Locate Datasets - *country* Geocode/Verify_ *date* . Download all dataset files listed under Product Items to the *Software AG_directory \Locate\data* directory. The file name for each dataset indicates its size after decompressing.

If you have access to both Geocode and Verify dataset links for a licensed country, use these criteria to download datasets:

- Geocoding is a process for translating a location map based on geographic data such as street addresses or postal codes to specific coordinates on the earth's surface. Geocode datasets are needed only when geocoding information; that is, when latitudinal and longitudinal coordinates have to be added to addresses. Country-specific geocode links also contain Verify datasets, so you need not explicitly download the verify links.
- If you only require address verification and not geocoding, ignore the geocode datasets and download datasets using the country-specific Verify links.

Complete the MashZone Installation

The MashZone 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/bin* directory and run the call `./CloudAgentApp.sh install` with sudo or root privileges.

Complete the Mobile Installation

Complete the Mobile Administrator Installation

This step varies depending on whether you installed Mobile Administrator on a physical or virtual machine.

- If you installed on a physical machine, go to the *Software AG_directory/MobileAdministrator* directory and run the command `./install.sh` as root. If the installation is successful, you will see the message `Notice: Finished catalog run in 2594.71 seconds`, and the installed Mobile Administrator will be available via HTTP or HTTPS at the IP address of the host machine. If an error occurs, you will see the complete error message.

If Mobile Administrator cannot connect to the Apache web server on ports 80 (HTTP) and 443 (HTTPS), make sure your firewall is configured correctly. If the host machine has SELinux enabled, go to the `/var/www/appfresh/log` directory and open the `apache_error.log` file. If you see error messages similar to `(13) Permission`

denied: proxy: HTTP: attempt to connect to 127.0.0.1:5000 (localhost)
failed, run the command below as root:

```
# setsebool -P httpd_can_network_connect 1
```

- If you installed on a virtual machine, the Mobile Administrator virtual installer is a Vagrantfile. The installer sets up a virtual machine with a Linux distribution and installs Mobile Administrator. Go to the *Software AG_directory/MobileAdministrator* directory and execute Vagrantfile by running the appropriate command below.

Distribution	Command
Debian 6.0.7	<code>vagrant up standalone</code>
SuSE Enterprise Linux Server 11	<code>APPFRESH_LINUX=sles vagrant up standalone</code>
CentOS 6.5	<code>APPFRESH_LINUX=centos vagrant up standalone</code>
Distribution	Command

If the installation is successful, you will see the message `Notice: Finished catalog run in 2594.71 seconds`, and the installed Mobile Administrator will be available at `https://192.168.10.10`. If an error occurs, you will see the complete error message.

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*.

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 Products

Uninstall Mobile Administrator

To uninstall Mobile Administrator from a virtual machine, follow the Oracle VM VirtualBox or Vagrant instructions.

To uninstall Mobile Administrator from a physical machine, follow the instructions below.

1. Back up your data files (for example, application binaries or screenshots that have been generated by Mobile Administrator). The data files are stored in the `/var/www/appfresh/public/datafiles` directory.
2. Export your MySQL database. For instructions, see the vendor documentation.
3. Go to the *Software AG_directory* /MobileAdministrator directory.
4. Stop Mobile Administrator by running the command `/etc/init.d/appfresh-mobile stop`
5. Remove the appfresh directory by running the command `rm -rf /var/www/appfresh`
6. Remove the appfresh-mobile directory by running the command `rm -rf /var/run/appfresh-mobile`
7. Remove the database by running the command `mysql -uroot -e 'drop database appfreshmobile'`
8. Remove the Apache virtual host by running the command `rm /etc/apache2/sites-enabled/25-appfresh*`

Uninstall All Other Products

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, 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 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.

7. Uninstall the products using the Software AG Uninstaller. For instructions, see *Using the Software AG Installer*.

Note: For Integration Server, if you want to uninstall only certain packages from the package repository and from all instances, select those packages on the product selection tree. If you want to uninstall all packages from the package repository and uninstall all instances, select Integration Server > Server on the tree.

8. Reboot your system.
9. 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 *Snumber brokerrelease* (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).

10. 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 Installing and Uninstalling IBO

■ Overview	96
■ Typical Development Installations	96
■ Deployment Installation	96
■ Administration Installation	97
■ Software and Hardware Support and Requirements	98
■ Shut Down Products	101
■ Prepare Your Machine	102
■ Database Connection Information	103
■ Install Products	103
■ Create Database Components	117
■ Complete the Installation	117
■ Connect Products to Each Other	118
■ Uninstall Products	119

Overview

The information provided in this chapter for Terracotta Server Array and Universal Messaging applies to when you are using those products with webMethods products. For information on Terracotta Server Array and Universal Messaging in other contexts, see the Terracotta BigMemory Max and Universal Messaging product documentation, respectively.

Typical Development Installations

The Software AG Installer offers typical development installations of products that enable you to perform a certain task. When you select a typical development installation, the installer automatically selects all products that make up that installation. For detailed information on how the products in each typical development installation work together, see *Understanding webMethods and Intelligent Business Operations Products*.

For some typical development installations, you must create certain *database components*. A database component is a grouping of database objects that is used by one or more products. The table below lists these database components. For complete information about each database component, see ["Creating and Dropping Database Components" on page 121](#).

For some typical development installations, you might want to install additional optional items. You can select these items after the installer selects the products that make up your selected typical development installation. The table below lists the additional optional items.

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

Typical Installation	Database Components	Additional Optional Items
Intelligent Business Operations	All for Integration Server, My webMethods Server, and Optimize	

Deployment Installation

You can deploy Software AG assets from one environment to another. For example, you can deploy assets you have developed on servers in a development environment to

servers in a test or production environment. You can use either run-time deployment or repository-based deployment.

In runtime-based deployment, you use Deployer to deploy assets from servers in the source environment to servers in the target environment. If no firewall separates the environments, install Deployer on a machine that can access all source and target servers. If a firewall does separate the environments, install one Deployer on a machine in the source environment that can access all source servers and install another Deployer on a machine in the target environment that can access all target servers.

In repository-based deployment, you use the Asset Build Environment to copy assets from servers or a version control system (VCS) in the source environment to a file-based repository, and then use Deployer to deploy the assets from the repository to servers in the target environment. Install the Asset Build Environment on a machine that can access all source servers or the VCS, and also the file system that will host the repository. Install Deployer on a machine that can access all target servers, and also the file system that will host the repository.

In both types of deployment, you can deploy assets from any release of the supported products to target servers of the same release.

Administration Installation

You can manage multiple installations of supported Software AG products from Command Central. You can use Command Central to install products and fixes; create and configure product instances; and start, stop and monitor runtime components. You can also create new environments and clone existing installations using templates.

Install one Command Central to manage all of your development and test environments, and one Command Central to manage all of your production environments. Install Command Central by itself on a machine that does not host other Software AG products, but that can access all the machines in the environment that do host the Software AG products you want to manage. Restrict access to the machine to only those people who need to use Command Central (for example, release managers, infrastructure engineers, system administrators, and operators).

Install the latest release of Command Central to manage installations of supported Software AG products that are release 9.0 or later.

Platform Manager is an agent that enables Command Central users to remotely administer products that can be managed by Command Central. When you install products that can be managed by Command Central using Software AG Installer, Platform Manager is automatically installed with the products. However, you can instead install Platform Manager on target machines and then install products remotely using Command Central. For UNIX systems, you can install Platform Manager remotely from Command Central. For Windows systems, Command Central provides a simple shell command you can use install Platform Manager. For details, see *Software AG Command Central Help*.

Software and Hardware Support and Requirements

Operating System and Browser Support

For information on operating systems, RDBMSs, and browsers that are supported by your products, see the *webMethods and Intelligent Business Operations System Requirements*.

For information on supported database drivers, see "[Database Components](#)" on page 122.

Software Requirements and Considerations

Product	Software Requirements and Considerations
All	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.
Process Performance Manager	You cannot install Process Performance Manager on integrated network drives or on substituted drives.
Universal Messaging	<ul style="list-style-type: none"> ■ 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.

Hardware Requirements

Minimum and Recommended Hardware Requirements

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

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. They do not include the additional requirements listed in

"Additional Hardware Requirements" on page 99. 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
Command Central	500MB	512MB (1GB for 100 nodes)	1 (2)
Optimize			
Analytic Engine	1GB	4GB (8GB)	2 (4)
Infrastructure Data Collector	300MB	2GB*	1
Web Service Data Collector	100MB	256MB	1
Platform Manager	500MB	128MB	1
Presto	650MB	8GB	1
Process Performance Manager	10GB	7GB (16GB)	2 (4)
Process Performance Manager Analysis GUI	5GB	4GB	1
Terracotta Server Array used with webMethods products	200MB (500MB)	3GB	1
Universal Messaging realm server used with webMethods products	500MB	1GB	1

Additional Hardware Requirements

Product	Additional Hardware Requirements
Command Central	Command Central needs additional hard drive space if you use the template-based provisioning functionality. The space required depends on the total size of template-generated

Product	Additional Hardware Requirements
	files, such as images, configuration files to store, upload, and download.
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.
Platform Manager	Platform Manager needs additional hard drive space if you use Command Central's template-based functionality. The space required depends on the total size of template-generated files, such as images, configuration files to store, upload, and download.
Process Performance Manager	You 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.
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>

Product	Additional Hardware Requirements
	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.

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 products into an existing Software AG product installation directory (that contains products from the same release), running 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 the Software AG Runtime service and the CentraSite Registry Repository 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 <code>product release</code> .
Terracotta Server Array	Run the <code>bin/stop-tc-server.{bat sh}</code> command. If you are running a mirror group, shut down the passive server and then the active server.

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 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 Process Performance Manager on a Linux System

- Check the setting for shared memory (kernel parameter `shmmax`) by executing the command `sysctl -a | fgrep kernel.shmmax`. If the value is less than 629145600, log on as root user and increase the value by executing `sysctl -w kernel.shmmax=629145600` or `echo "kernel.shmmax=629145600" >> /etc/sysctl.conf`, then activate the new value by executing `sysctl -p`.
- Check the settings for the system-wide maximum number of file descriptors (kernel parameter `fs.file-max`) by executing the command `sysctl -a | fgrep fs.file-max`. If the value is less than 200000, log on as the root user and increase the value by executing `sysctl -w fs.file-max=200000` or `echo "fs.file-max=200000" >> /etc/sysctl.conf`, then activate the new value by executing `sysctl -p`.
- Check the user, group, and process settings for the maximum number of open file descriptors by executing the command `ulimit -Hn` and `ulimit -Sn`, where `-Hn` is the hard limit and `-Sn` is the soft limit. If the value is less than 200000, log on as a non-root user and increase the value by executing `ulimit -n 200000`. To permanently save this setting for the user, execute:


```
echo "<user name> soft nofile 200000" >> /etc/security/limits.conf
echo "<user name> hard nofile 200000" >> /etc/security/limits.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`.

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 supported database drivers are shown in the product panels. Keep in the mind the following:

- Most products use the DataDirect Connect JDBC 5.1 driver. For information about options supported by this 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 Website](#).
- 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.
- 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

As you go through the Software AG Installer, you will be asked for various types of information, such as product license files and database connection parameters. Scan the pages in this chapter that show the installer panels you will encounter, and gather the information you will need before starting the installer.

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 how to use the product selection tree.

If you are installing Process Performance Manager on Windows 2008 Server, Windows 7, or Windows 8/8.1, 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.

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

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

If you want Platform Manager to publish management and monitoring events about products that are managed by Command Central, such as when products are installed or uninstalled, or when products start or stop, select Infrastructure > Platform Manager Plug-ins > Event Publishing.

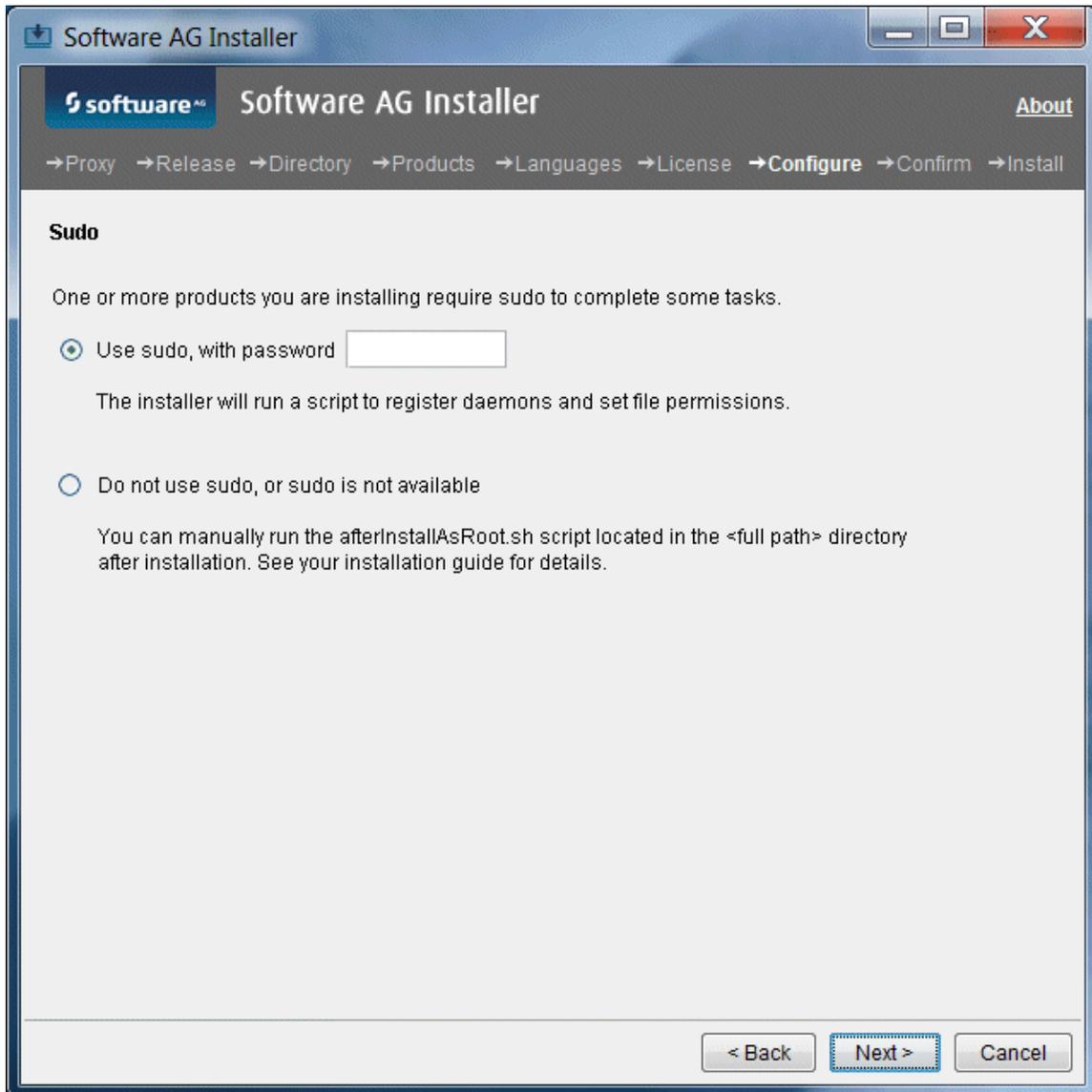
After the product selection tree, the installer displays the language pack selection tree. For information on language packs, see the international operating environments appendix in this guide. The installer then displays panels (GUI mode) or prompts (console mode) that ask for product configuration information. 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

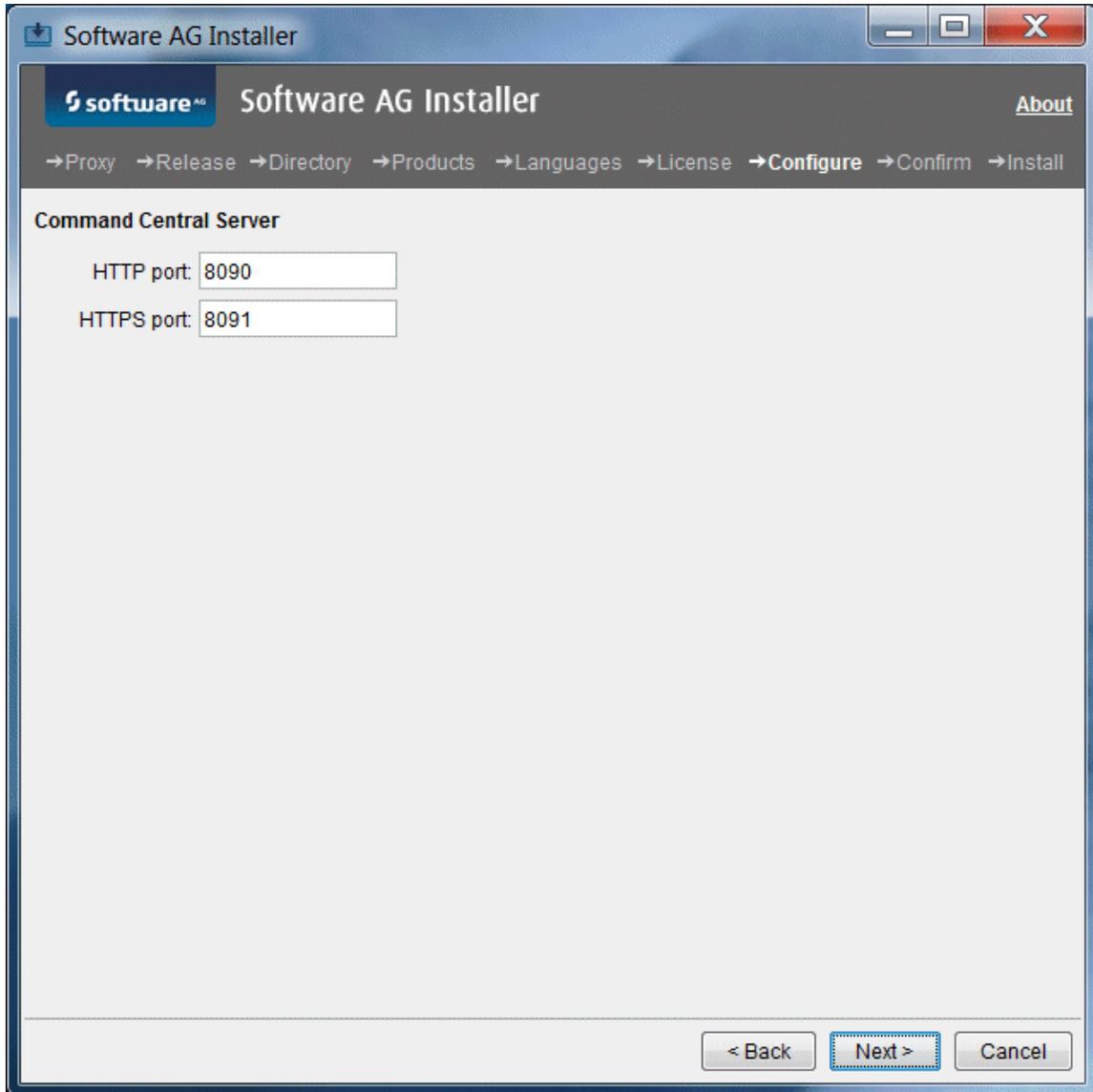
When you install on a UNIX system, the panel below might appear.



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 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.

Command Central



The screenshot shows the 'Software AG Installer' window. The title bar reads 'Software AG Installer'. The main window has a dark header with the 'software' logo and the text 'Software AG Installer'. A breadcrumb trail at the top includes: →Proxy →Release →Directory →Products →Languages →License →**Configure** →Confirm →Install. The 'Configure' step is active. Below the breadcrumb, the section is titled 'Command Central Server'. It contains two input fields: 'HTTP port:' with the value '8090' and 'HTTPS port:' with the value '8091'. At the bottom right, there are three buttons: '< Back', 'Next >', and 'Cancel'. The 'Next >' button is highlighted with a dashed border.

Optimize

Software AG Installer

software™ Software AG Installer [About](#)

→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

< Back Next > Cancel

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 Infrastructure Data Collector

The screenshot shows a window titled "Software AG Installer" with a breadcrumb trail: →Proxy →Release →Directory →Products →Languages →License →Configure →Confirm →Install. The current step is "Optimize Infrastructure Data Collector".

Port:

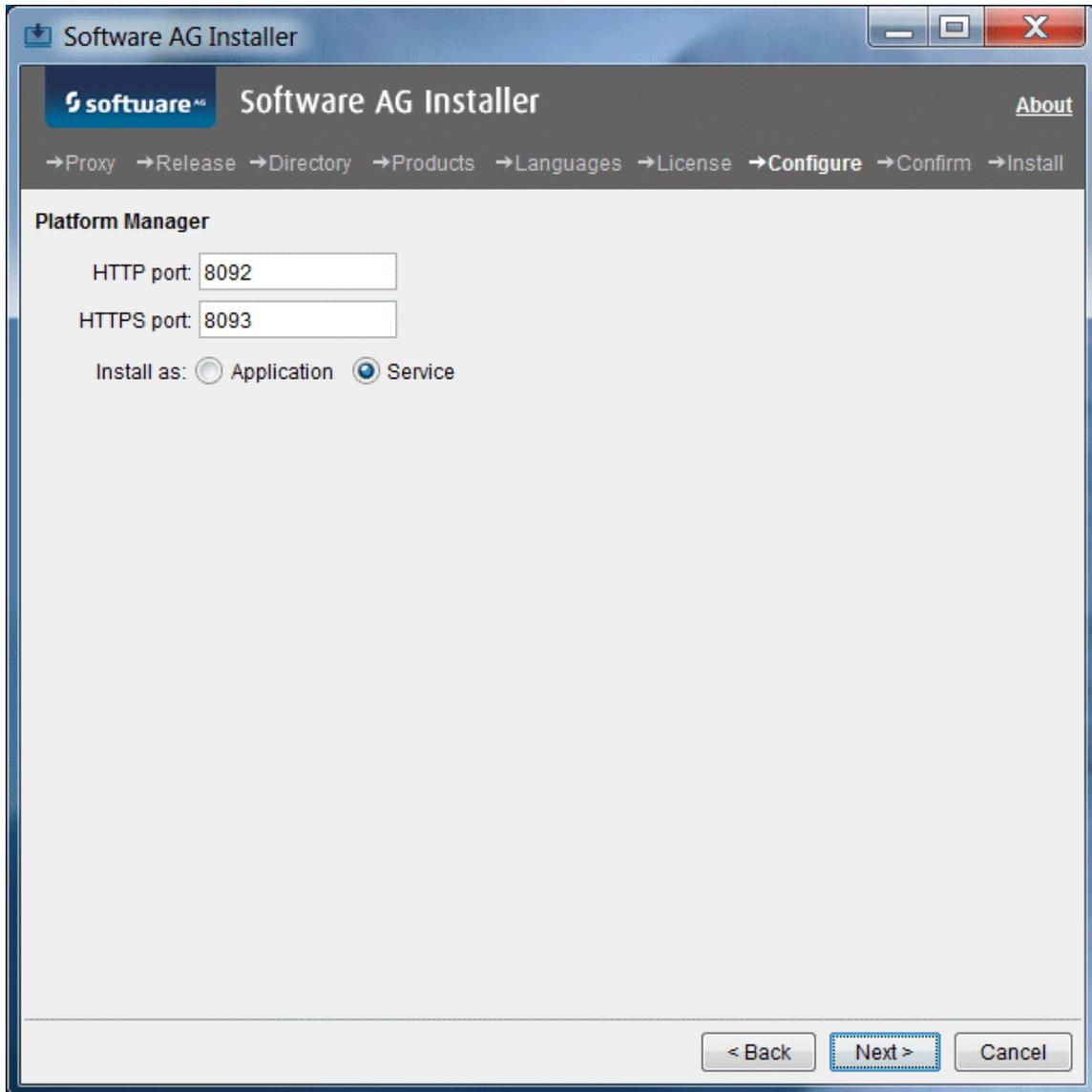
Install as: Application Service

Specify the port for the Central Configurator to use to communicate with Infrastructure Data Collector. If you install multiple Infrastructure Data Collectors on the same machine, you must specify a unique port for each.

Configuration port:

Navigation buttons: < Back, Next >, Cancel

Platform Manager

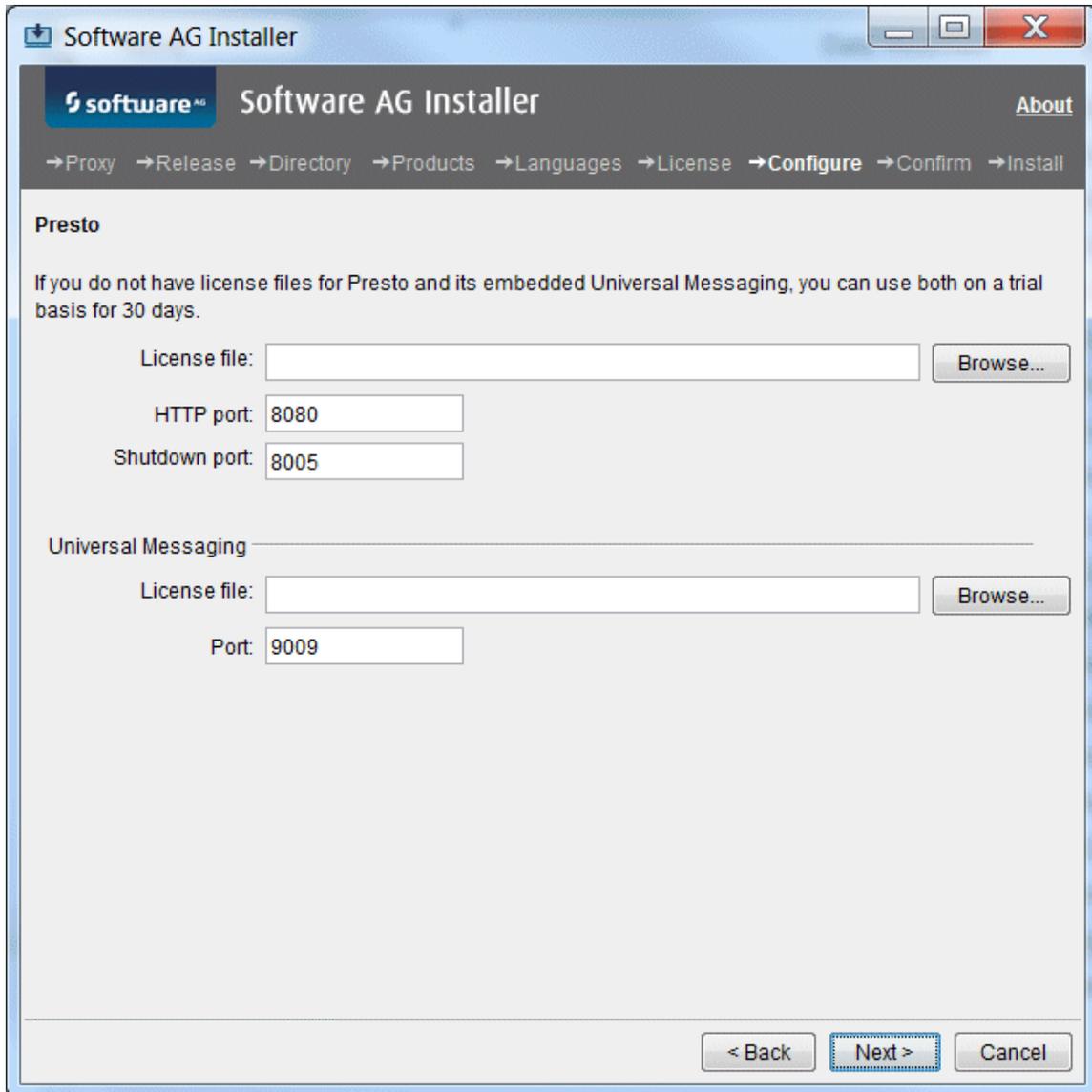


The screenshot shows the 'Software AG Installer' window with the 'Platform Manager' configuration panel. The window title is 'Software AG Installer' and it includes standard Windows window controls (minimize, maximize, close). The software logo and name are in the top left, and an 'About' link is in the top right. A breadcrumb trail at the top reads: →Proxy →Release →Directory →Products →Languages →License →Configure →Confirm →Install. The 'Platform Manager' section contains two text input fields: 'HTTP port:' with the value '8092' and 'HTTPS port:' with the value '8093'. Below these is the 'Install as:' section with two radio buttons: 'Application' (unselected) and 'Service' (selected). At the bottom right of the window are three buttons: '< Back', 'Next >', and 'Cancel'.

Platform Manager is an agent that enables Command Central users to remotely administer one or more of the products you are installing. If you plan to use Command Central, install Platform Manager as a service. If not, install Platform Manager as an application to conserve system resources.

Make a note of the ports you specify on this panel. You will need them to register this installation with Command Central.

Presto



The screenshot shows the 'Software AG Installer' window. The title bar reads 'Software AG Installer'. The window has a dark header with the 'software' logo and the text 'Software AG Installer'. A navigation bar below the header contains the following steps: →Proxy →Release →Directory →Products →Languages →License →Configure →Confirm →Install. The 'Configure' step is highlighted. The main content area is titled 'Presto' and contains the following text: 'If you do not have license files for Presto and its embedded Universal Messaging, you can use both on a trial basis for 30 days.' Below this text are three input fields: 'License file:' with a 'Browse...' button, 'HTTP port:' with the value '8080', and 'Shutdown port:' with the value '8005'. A horizontal separator line follows. Below the separator is the 'Universal Messaging' section, which includes a 'License file:' field with a 'Browse...' button and a 'Port:' field with the value '9009'. At the bottom of the window are three buttons: '< Back', 'Next >', and 'Cancel'. The 'Next >' button is highlighted with a dashed border.

Presto comes with an embedded Universal Messaging.

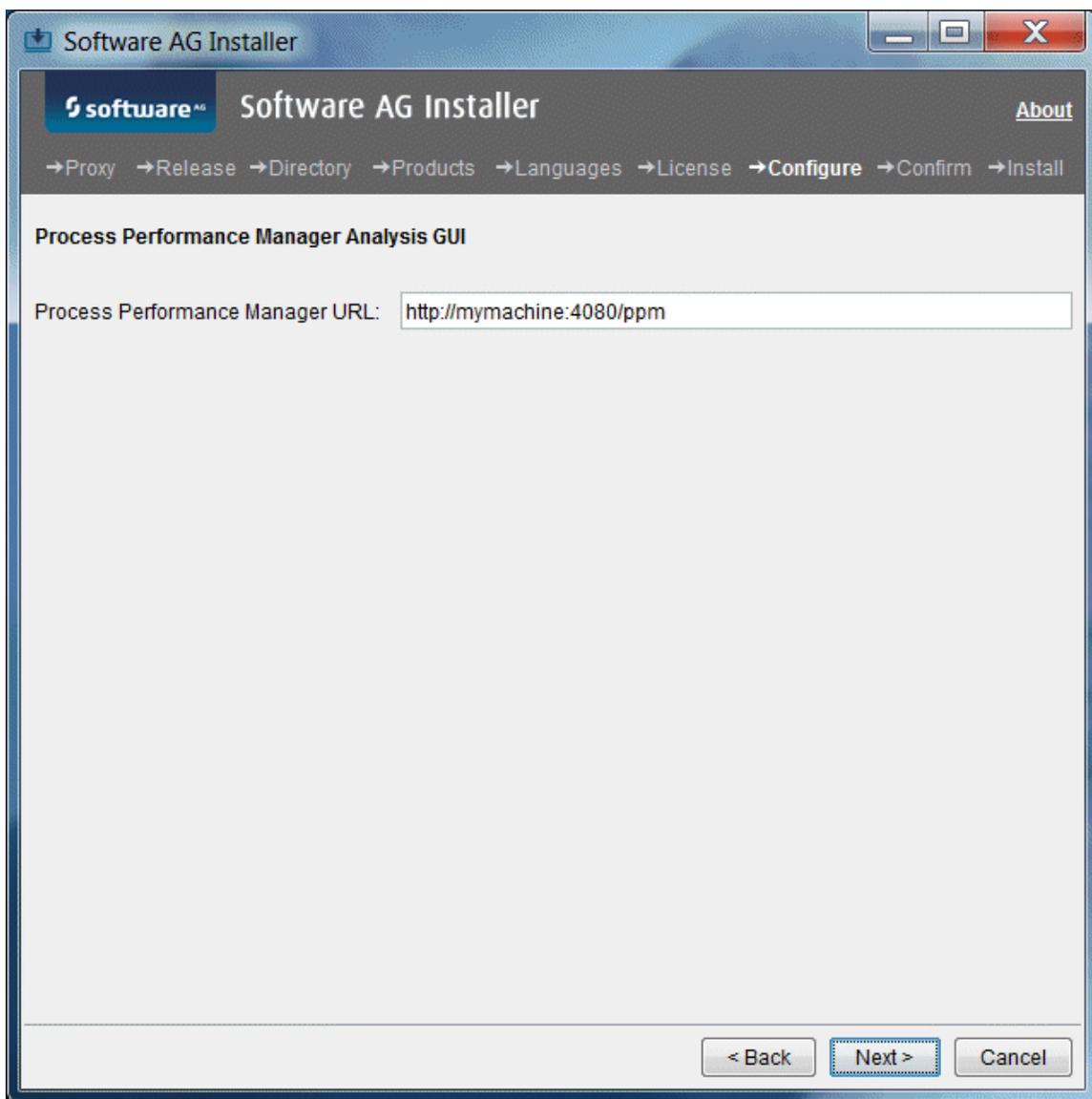
Process Performance Manager

Select a system configuration for 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 database is not included in the estimate.

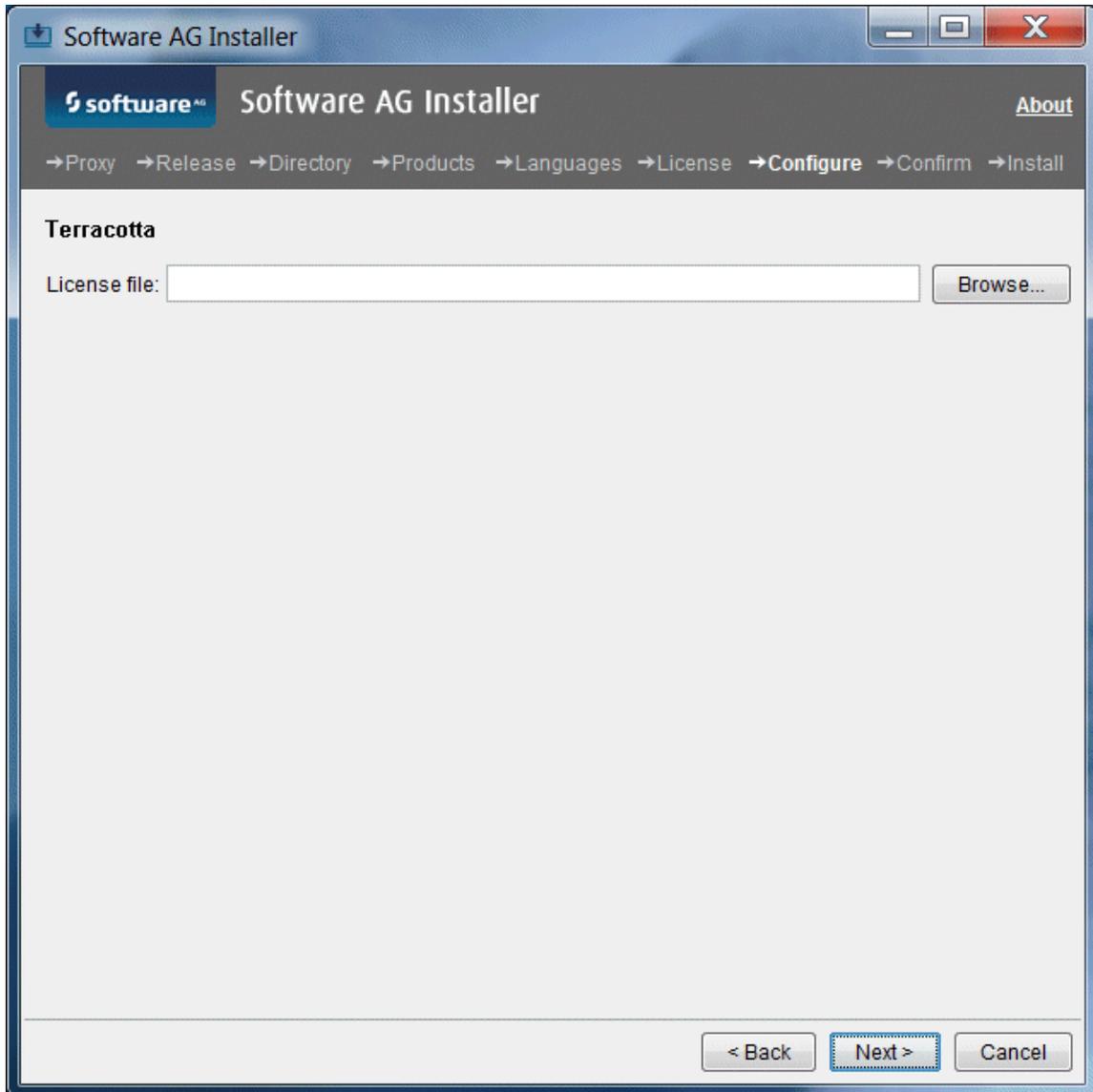
System Configuration	PPM Clients	Users	System Hardware
Small	1	Up to 5	20 GB free hard drive space, 4 GB RAM, 2 CPUs

System Configuration	PPM Clients	Users	System Hardware
Medium	1	Up to 10	Depends on PPM customization
Large	Several	Up to 100	Depends on PPM customization

Process Performance Manager Analysis GUI



Terracotta



Universal Messaging

Software AG Installer

software^{AG} Software AG Installer [About](#)

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

Universal Messaging

Realm Server _____

If you do not have a license file, you can use Universal Messaging on a trial basis for 90 days.

License file: _____ [Browse...](#)

Create Default Instance _____

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

NHP interface binding: ALL ▾

NHP interface port: 9000

Realm server name: umserver

Data directory: C:\SoftwareAGtest\UniversalMessaging\server\umserver [Browse...](#)

< Back **Next >** Cancel

The panel shown above displays when you choose to install a Universal Messaging realm server. Select the check box to create a default realm server instance and complete all fields on the panel.

Field	Entry
License file	If you do not have a Universal Messaging license file, you can use Universal Messaging on a trial basis for up to 90 days.

Field	Entry
	<p>Note: If you obtain a Universal Messaging license file after installation, you can add it at that time. For instructions, see the product documentation.</p>
NHP interface binding	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.
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	<p>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.</p> <p>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).</p>
Data directory	<p>Full path to the directory in which to store the data for the realm server instance.</p> <p>Note: If you use a non-default location for the data directory, you will have to manually migrate the data directory when you upgrade Universal Messaging.</p> <p>If you install multiple realm server instances on the same machine, use a different data directory for each instance.</p>

The panel shown above displays when you choose to install a Universal Messaging Enterprise Manager instance, Template Applications instance, or both, without also choosing to install a Universal Messaging realm server. Select the check box to create a default instance of each selected component and complete all fields on the panel. You can specify a realm server that is already installed or that will be installed later.

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.

Field	Entry
	<p>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).</p>
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

Many products require you to create database components. For a list of such products and instructions, see ["Creating and Dropping Database Components" on page 121](#).

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.

Change Default Passwords

Products are installed with default passwords. For security reasons, you should change these passwords as soon as possible. For instructions, see the product documentation.

Install Latest Fixes

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

Register Daemons and Set File Permissions

If the sudo panel appeared during installation on a UNIX system and you did not use sudo, the installer was not able to register daemons and set file permissions for these 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 the products might not work correctly.

You can register daemons for other products. For instructions, see ["Register Daemons to Automatically Start and Shut Down Products on UNIX Systems"](#) on page 159.

Complete the Process Performance Manager Installation

The 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/bin* directory and run the call `./CloudAgentApp.sh install` with `sudo` or root privileges.

Complete the Terracotta Installation

For instructions on configuring Terracotta when you are using it with webMethods products, see *Getting Started with the webMethods Product Suite and Terracotta*. For instructions on configuring Terracotta in other contexts, see the Terracotta BigMemory Max product documentation.

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/UniversalMessaging/server/realm_server_name/bin* directory, open the `nserver.conf` file, and add the line `wrapper.java.additional.19=-DCORE_SPIN=true`

Add License

You can use Universal Messaging on a trial basis for up to 90 days; if you are doing this, you installed Universal Messaging without a license. If you later obtain a license, rename the license file `licence.xml` and copy it over the existing license file of the same name in the *Software AG_directory/UniversalMessaging/server/realm_server_name* directory.

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 Products

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 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
```
 5. 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.
6. Uninstall the products using the Software AG Uninstaller. For instructions, see *Using the Software AG Installer*.
 7. Reboot your system.
 8. 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.

7 Creating and Dropping Database Components

■ Database Components	122
■ Database Drivers	122
■ Data Storage	123
■ Preparing for Database Component Creation	132
■ Install the Database Component Configurator and Database Scripts	136
■ Use the Database Component Configurator Graphical User Interface	138
■ Use the Database Component Configurator Command Line Interface	145
■ Use the Database Scripts	153
■ Connect Products to Database Components	155

Database Components

If you installed the products below, you must create Software AG *database components* for them.

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

A Software AG 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 Process Audit Log data is called the ProcessAudit database component.

Database Drivers

The products that have Software AG database components use Java Database Connectivity (JDBC) to interact with their databases; specifically, to query and update data in database components.

Blaze uses database drivers supplied by the database vendors. For more information, see *Using Blaze Rules with BPM and CAF*.

All other products use the DataDirect Connect JDBC 5.1 database 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 DataDirect Connect JDBC driver, see *DataDirect Connect for JDBC User's Guide and Reference 5.1*, available in the same location as the rest of the webMethods product documentation.

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.

Note: If you want your products to exchange data with databases outside the product suite database components, you can use the webMethods Adapter for JDBC. For more information, see the webMethods Adapter for JDBC 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	■ Error, guaranteed delivery, service, security, and session audit data.	Logging is enabled
	■ Documents that are in doubt, have failed, or have exhausted trigger retries.	You are using triggers

Database Component	Types of Data	Integration Server writes this data when...
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
DistributedLocking	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 external RDBMS or an embedded database. 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.
- Need a database that is scalable, visible, and highly reliable, and that has robust management and recovery tools.
- Write document history or cross-referencing 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.
- Use Business Rules.
- Use Monitor.
- Use pub.storage for high-volume storage.

If none of the above apply, and your database demands are low, your needs might be met by using the embedded database. For example, you can use the embedded

database as a runtime for adapters, eStandards Modules, or Deployer. You should use the embedded database with an Integration Server that is an Enterprise Gateway.

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 127) and configure Integration Server to write to them (see "[Connect Products to Database Components](#)" on page 155). 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 127.

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 155 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 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 the Broker Messaging user interface.

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*). section same size as BusinessRules Database Component. Title Blaze Database Component.

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 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, then displays this data in the Optimize interface in My webMethods.Monitor also reads process data from this database and displays it in the Monitor interface in My webMethods, where you can track the status of process instances, view logged values, and, in some cases, resubmit process instances.

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 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.

Software AG Designer

See ["Staging and Reporting Database Components" on page 131](#).

Integration Server

See ["Integration Server Data Storage" on page 123](#).

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 events about certain SOA policies to the MediatorEvents database component.

MobileSupport Database Component

If you installed the Mobile Support package on Integration Server, create the MobileSupport database component. Mobile Support writes data used for synchronizing mobile solutions, and metadata about that data, to this database component.

My webMethods Server

See "[My webMethods Server Data Storage](#)" on page 126.

OneDataMetadata, OneDataWorkArea, OneDataReleaseArea Database Components

If you installed OneData, create the OneDataMetadata, OneDataWorkArea, and OneDataReleaseArea 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 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.

ProcessAudit Database Component

If you installed Optimize, create the ProcessAudit database component. See ["ProcessAudit Database Component" on page 128](#).

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 displays the data. Monitor reads process status data from this database and displays it in the Monitor interface in My webMethods.

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).

Staging and Reporting Database Components

If you want to simulate business processes in Software AG 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.

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 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: Software AG 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.

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

Character Set and Sort Order

Your 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 your 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 your 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 your products to function properly, you must set the `NLS_LENGTH_SEMANTICS` initialization parameter to `BYTE`.

Important: Your 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 your 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 your 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 Installerto...
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 your 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

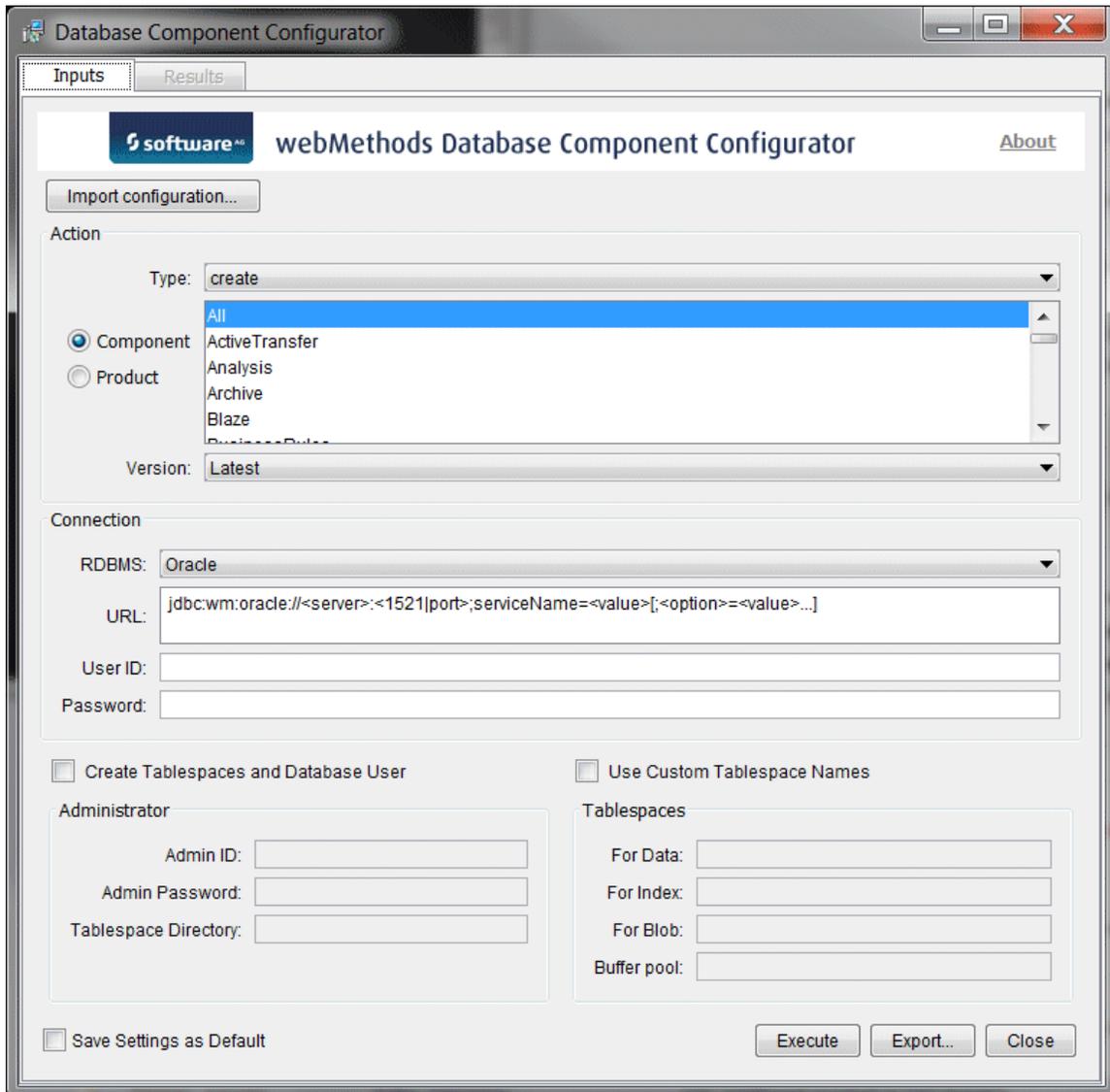
If database storage does not yet exist, you must create it either before or at the same time that you create your database components.

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.

- In the **RDBMS** list, click the RDBMS in which to create the database components.
- 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 your 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](#).
- 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	The database user and password to create. Note: For SQL Server, the user will be created and a default schema named dbo will be assigned to that user. Important: For Oracle, do not use the SYSTEM user to create the database components in the SYSTEM schema.
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:

1. 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.
2. 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

3. 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 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 your products (WEBMBUFF by default).

Note: Your 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 <i>Software AG_directory</i> 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.

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

- 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.

- 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> .

- 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.
 - a. 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.
 - b. 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 your 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.

Main Parameters

```
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
[{-au|--admin_user} db_admin_user {-ap|--admin_password} password]
```

Additional Parameters

```
[{-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]
[{-e|--export|-i|--import} {-dir|--configdir} directory]
[-file|--configfile} file_name]
[-r|--runCatalog]
[-h|--help]
[-ab|--about]
[-pa|--printActions] [-pd|--printDatabase] [-pc|--printComponents]
[-pp|--printProducts] [-pe]
```

The parameters and their possible values are explained below.

Main Parameters

{-a|--action} *action* - action to perform. You can specify the values below.

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.

`{-d|--dbms} {oracle|sqlserver| db2luw}` - RDBMS on which to perform *action*. You can specify the values below.

Value	RDBMS
oracle	Oracle
sqlserver	SQL Server
db2luw	DB2 for LUW

`{-c|--component}db_component {-v|--version}version` - database component version for which to perform *action*. For *db_component*, you can specify one or more database component codes or names. You can see the list of database component codes and names by specifying `-c all` with the `print` action. If you want to specify multiple codes or names, use commas as separators. For *version*, you can specify the value `latest`. If you specified one database component for *db_component*, perform *action* for the latest version of *db_component*. If you specified multiple database components or `ALL` for *db_component*, you must specify `latest` for *db_component_version*. The configurator will create the latest version of each database component.

`{-pr|--product}product {-v|--version}release` - product release associated with the database components for which to perform *action*. For *product*, you can specify one or more product codes or names, or `ALL`. You can see the list of database components for a *product* by specifying this parameter with the `print` action. If you want to specify multiple codes or names, use commas as separators. For *release*, you can specify the values below.

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 <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.

{-l|--url} *RDBMS_URL* - URL for the RDBMS. For information about options supported by the DataDirect Connect JDBC 5.1 driver used by your products, 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](#). When working with database components on UNIX systems, you must enclose the URL in double quotes. You can specify the values below.

RDBMS	Sample Format for DataDirect Connect Driver
Oracle	<pre>jdbc:wm:oracle://server: {1521 port} ;serviceName=service [;option=value]. ..</pre> <p>Important 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).</p>
SQL Server	<pre>jdbc:wm:sqlserver://server: {1433 port} ;databaseName=database [;option=value]...</pre>
DB2 for Linux, UNIX, Windows	<pre>jdbc:wm:db2://server: {50000 port} ;databaseName=database [;option=value]...</pre> <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>;AlternateId=schema;"InitializationString=(SET CURRENT PATH=current_path,schema)"</pre> <p>AlternateID 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 CreateDefaultPackage=true, ReplacePackage=true, and</p>

RDBMS	Sample Format for DataDirect Connect Driver
-------	---

`DynamicSections=3000`. These settings will affect all database components in the same schema or database.

`{-u|--user} db_user {-p|--password} password` - depends on the *action* you are performing.

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

If you are...	Specify...
---------------	------------

Creating a database user and storage in Oracle or SQL Server

Database user and password to create.

Note: For SQL Server, the user will be created and a default schema named `dbo` will be assigned to that user.

Important: For Oracle, do not use the `SYSTEM` user to create the database components in the `SYSTEM` schema.

Creating a database user and storage in DB2 for LUW

OS user to which to grant permissions.

Performing the `checkEncoding` action

Existing database user that has create session and create table privileges, and that database user's password.

Performing any other action

Existing database user and password.

`[{-au|--admin_user} db_admin_user {-ap|--admin_password} password]` - if you are going to create a database user and storage, or drop storage and revoke the database user permissions, database user or operating system user and password that has the necessary database administrator credentials.

Additional Parameters

`[{-tsdata|--tablespacefordatadata_tspace_name} [{-tsindex|--tablespaceforindex}index_tspace_name] [{-tsblob|--tablespaceforblob}BLOB_tspace_name] [{-b|--bufferpool}buffer_pool_name]`

- if you are going to create database components in Oracle and DB2 for LUW, you can specify custom tablespace names. Your products support all tablespace configurations deployed by users. 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 (WEBMBUFF by default). For Oracle or DB2 for LUW, if you are going to drop storage and revoke the database user permissions, provide the custom tablespace names.

`[-t|--tablespacedir directory]` - if you are going to create a database user and storage, and want to create a tablespace directory for DB2 for LUW or Oracle, full path to the directory. For DB2 on Linux systems, tablespaces are created for each DB2 database. If you are creating database components in more than one DB2 database, either the tablespace directory or the tablespace names must be unique for each DB2 database. 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.

`[-n|--dbname database_name]` - if you are going to create a database user and storage in SQL Server, name of the target database. If you are going to drop storage and revoke the database user permissions in SQL Server, identify the database that contains the storage.

`[-e|--export] {-dir|--configdir} directory {-file|--configfile} file_name`
- exports values for all required parameters except the password parameters to an .xml file.

`[-i|--import] {-dir|--configdir} directory {-file|--configfile} file_name`
- imports values for all parameters from an .xml file. Password parameters are not saved, so you must specify them on the command.

`[-r|--runCatalog]` - runs the catalog action at the end of every execution.

`[-h|--help]` - lists command line interface help.

`[-ab|--about]` - lists information about the Database Component Configurator.

`[-pa|--printActions]` - lists the actions you can perform, like create or drop.

`[-pd|--printDatabase]` - lists RDBMS the configurator supports.

`[-pc|-- printComponents]` - lists database components the configurator supports.

`[-pp|--printProducts]` - lists products the configurator supports.

`[-pe]` - lists command line interface examples.

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 w3bmpass -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 w3bmpass -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 w3bmpass
-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=amol -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=amol -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://vmxpdb01:50000;databaseName=amol -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://vmxpdb01:50000;databaseName=amol -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 153](#).

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 ALTSCHEMA 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=ALTSCHEMA
;"InitializationString=(SET CURRENT PATH=current_path,ALTSCHEMA)" -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. Your 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 parameters in the commands below, see "[Database Component Configurator Command](#)" on page 146.

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|db2luw|db2i} -cstorage
-v latest
```

Create Database Components

To list the scripts for creating individual database components, or all database components, run the appropriate command below.

```
dbConfigurator.{bat|sh} -a print -d {oracle|sqlserver|db2luw|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|db2luw|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|db2luw|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|db2luw|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, MobileSupport, 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	Documentation
Blaze	<i>Using Blaze Rules with BPM and CAF</i>
Software AG Designer	Software AG Designer online help
My webMethods Server	<i>Administering My webMethods Server</i>

Product	Documentation
OneData	<i>Administering webMethods OneData</i>
Optimize	<i>Configuring BAM</i>
Task Engine	<i>webMethods Task Engine User's Guide</i>

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. Each pool defines 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. The same is true for ActiveTransfer Server and Mobile Support.
- If you created the CloudStreamsEvents database component, you must point that function at a connection pool. The same is true for the Archive, Staging, and Reporting database components.
- 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, open Integration Server Administrator, and go to the **Settings > JDBC Pools** page.
2. On the **Settings > JDBC Pools** page, click **Create a new Pool Alias Definition** and complete the fields as described in the Integration Server online help.
3. Make sure Integration Server can connect to the database by clicking **Test Connection**. Then click **Save Settings**.
4. Check the values for the connection pool for the ISCoreAudit database component. If the database user specified in the **User ID** field is not the database user that created the ISCoreAudit database component, set the `watt.server.audit.schemaName` property to the name of the schema that contains the ISCoreAudit database component. For instructions on setting this property, see the *webMethods Integration Server Administrator's Guide*.

Point Integration Server Functions at Connection Pools

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. In the **Associated Pool Alias** list, click the pool you want the function to point to, and then click **Save Settings**.
3. In the **Functional Alias Definitions** area, initialize the pool by clicking **Restart** in the **Restart Function** column for the function. Make sure Integration Server can connect to the database by clicking  in the **Test** column for the function.
4. Repeat the previous steps for all functions you want to point at a connection pool.
5. 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.
6. 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 Register Daemons to Automatically Start and Shut Down Products on UNIX Systems

■ Overview	160
■ Register Daemons for Products that Provide rc-scripts and daemon.sh	160
■ Register Daemons for Products that Provide rc-scripts but not daemon.sh	162

Overview

If you want products on UNIX systems to automatically start when you start the system and automatically stop when you shut down the system, you register their daemons.

Many Software AG products provide rc-scripts and a script named daemon.sh so you can register daemons for those products. When you register the daemon for a product using daemon.sh, an init-script is generated. At system start and shutdown time, the init-script changes the current user ID from the root user to the user that owns the rc-script and then calls the rc-script with the start or stop option, as appropriate.

Other Software AG products provide rc-scripts but not the daemon.sh script. You can use the daemon.sh script from another product, or you can create your own init-script and run commands to register those daemons.

Products not mentioned in this appendix do not support UNIX daemon mode.

This appendix explains how to use rc-scripts and the daemon.sh script to register daemons, and how to create init-scripts and run commands to register daemons.

If you installed the products below on a UNIX system, you already registered daemons for those products by using sudo during installation or by executing a script after installation:

- CentraSite Registry Repository and Software AG Runtime.
- Command Central, Platform Manager, or Software AG Runtime.
- EntireX and System Management Hub.

Apama and MashZone have their own commands to register their daemons, and Presto can run as a daemon. See the product documentation for more information.

Register Daemons for Products that Provide rc-scripts and daemon.sh

The table below lists the products that provide both rc-scripts and the daemon.sh script. The daemon.sh script for each product is in the same directory as the rc-script. All daemon.sh scripts are identical, so you can use the same one to register all daemons.

Product	Daemon	rc-script
CentraSite Registry Repository	CentraSite Registry/Repository	CentraSite/bin/saginm98

Product	Daemon	rc-script
Command Central	Software AG Command Central Server	profiles/CCE/bin/sagcce98
Integration Server	Software AG Integration Server	profiles/ <i>instance_name</i> /bin/sagis98
My webMethods Server	Software AG My webMethods Server	profiles/ <i>instance_name</i> /bin/sagmws98_default
OneData	Software AG OneData Server	profiles/ODE/bin/sagode98
Optimize Infrastructure Data Collector	Software AG Optimize Infrastructure Data Collector	profiles/InfraDC/bin/saginfrastructuredatacollector98
Platform Manager	Software AG Platform Manager	profiles/SPM/bin/sagspm98
Software AG Runtime	Software AG Runtime	profiles/CTP/bin/sagctp98
System Management Hub	Software AG Instance Manager	InstanceManager/bin/cim96

You can execute the `daemon.sh` script with the options indicated below to register or unregister daemons for these products. You must log on to your system as the root user to run the script.

To do this...	Run this command...
Register a daemon for a specified product	<pre>daemon.sh -f <i>full_path_to_rc_script</i></pre> <p>For Integration Server and My webMethods Server, add the option <code>-n <i>instance_name</i></code>.</p>
Unregister a daemon for a specified product	<pre>daemon.sh -r -f <i>full_path_to_rc_script</i></pre>

Register Daemons for Products that Provide rc-scripts but not daemon.sh

The table below lists the products that provide rc-scripts but do not provide the daemon.sh script.

Product	Daemon	rc-script
API-Portal	APICloudAgent98	API_Portal/server/sagyap98
webMethods Broker	webMethods Enterprise Broker subsystem	Broker/aw_broker96
Content Service Platform	CSP Server (Software AG webMethods Content Service Platform)	CSP/wrapper/Unix/csp
Optimize Web Service Data Collector	Software AG Optimize WS Data Collector	optimize/DataCollector/bin/rcscript.sh
Optimize Analytic Engine	webMethods Optimize Analysis Engine	optimize/analysis/bin/rcscript.sh
Terracotta	Terracotta Server Array	Terracotta/server/wrapper/bin/tsa-service
Universal Messaging	nserverdaemon	UniversalMessaging/server/nserver/umserver/bin/nserverdaemon

You can execute the daemon.sh script from another product to register the daemons listed in this section. For a list of products that the daemon.sh script, see ["Register Daemons for Products that Provide rc-scripts and daemon.sh" on page 160](#).

If you did not install any of the products listed in ["Register Daemons for Products that Provide rc-scripts and daemon.sh" on page 160](#), you can manually create init-scripts for the products listed in this section and register their daemons as explained below.

Note: The execution of daemon.sh and the manual steps in this section use specific run-levels and methods for registering UNIX daemons that have been tested

by Software AG. Some systems may offer valid alternative ways for the daemon registration that are not documented here.

Manually Register a Daemon on an AIX System

1. Log on to the system as the root user.
2. In the /etc directory, create an init-script using the naming convention *sagrc-script_name* (for example, *sagis_default98*). If you need to create multiple init-scripts because you have multiple product instances on the same machine, use the naming convention *sagunique_numberrc-script_name*.
3. Add the content below to the init-script.

```
#!/bin/sh
### BEGIN INIT INFO
# Provides:      description
# Required-Start: $network $remote_fs syslog
# Required-Stop:
# Should-Start:  cupsd winbind nmb
# Should-Stop:
# Default-Start: 2 3 5
# Default-Stop:  0 1 6
# Description:   Start/stop script for Software AG daemons
### END INIT INFO
# @full_path_to_rc-script@ # ID for daemon.sh compatibility.
#
SAGUSER=user_that_installed_products
PATH=/usr/bin:"$PATH"
export PATH
USER=`id | cut -d'(' -f2|cut -d')' -f1`
case "${USER}" in
    root)
        su $SAGUSER -c "/bin/sh -c 'full_path_to_rc-script ${1}'"
        ;;
    ${SAGUSER})
        full_path_to_rc-script ${1}
        ;;
    *)
        echo "[rc-script_name] ABORT: user ${USER} may not call this script"
        exit 1
        ;;
esac
```

4. Execute this command:
5. Register the daemon by running this command:

```
chmod +x /etc/sagoptional_unique_numberrc-script_name

/usr/sbin/mkitab "init-script_name:523:wait:/etc/init-script_name
start > /dev/console 2>&1"
```

Manually Register a Daemon on an HP-UX System

1. Log on to the system as the root user.
2. In the /sbin/init.d directory, create an init-script using the naming convention *sagrc-script_name* (for example, *sagis_default98*). If you need to create multiple init-scripts

because you have multiple product instances on the same machine, use the naming convention `sagunique_numberrc-script_name`.

3. Add the content shown in step 3 of "[Manually Register a Daemon on an AIX System](#)" on page 163 to the init-script.

4. Execute this command:

```
chmod +x /sbin/init.d/sagoptional_unique_numberrc-script_name
```

5. Register the daemon by running these commands:

```
ln -s /sbin/init.d/init-script_name /sbin/rc2.d/S020init-script_name
ln -s /sbin/init.d/init-script_name /sbin/rc2.d/K020init-script_name
ln -s /sbin/init.d/init-script_name /sbin/rc3.d/S020init-script_name
ln -s /sbin/init.d/init-script_name /sbin/rc3.d/K020init-script_name
```

Manually Register a Daemon on a Solaris System

1. Log on to the system as the root user.
2. In the `/etc/init.d` directory, create an init-script using the naming convention `sagrc-script_name` (for example, `sagis_default98`). If you need to create multiple init-scripts because you have multiple product instances on the same machine, use the naming convention `sagunique_numberrc-script_name`.
3. Add the content shown in step 3 of "[Manually Register a Daemon on an AIX System](#)" on page 163 to the init-script.

4. Execute this command:

```
chmod +x /etc/init.d/sagoptional_unique_numberrc-script_name
```

5. Register the daemon by running these commands:

```
ln -s /etc/init.d/init-script_name /etc/rc2.d/S020init-script_name
ln -s /etc/init.d/init-script_name /etc/rc0.d/K020init-script_name
ln -s /etc/init.d/init-script_name /etc/rc1.d/K020init-script_name
ln -s /etc/init.d/init-script_name /etc/rcS.d/K020init-script_name
```

Manually Register a Daemon on a SUSE Enterprise Server System

1. Log on to the system as the root user.
2. In the `/etc/init.d` directory, create an init-script using the naming convention `sagrc-script_name` (for example, `sagis_default98`). If you need to create multiple init-scripts because you have multiple product instances on the same machine, use the naming convention `sagunique_numberrc-script_name`.
3. Add the content shown in step 3 of "[Manually Register a Daemon on an AIX System](#)" on page 163 to the init-script.

4. Execute this command:

```
chmod +x /etc/init.d/sagoptional_unique_numberrc-script_name
```

5. Open the system file `/etc/sysconfig/boot` and check the `RUN_PARALLEL` variable.

If the variable is set to yes, you are running in parallel boot mode. Register the daemon by running this command:

```
insserv -f /etc/init.d/init-script_name
```

If the variable is set to no, you are running in non-parallel boot mode. Register the daemon by running these commands:

```
ln -s /etc/init.d/init-script_name /etc/rc.d/rc2.d/S020init-script_name
ln -s /etc/init.d/init-script_name /etc/rc.d/rc2.d/K020init-script_name
ln -s /etc/init.d/init-script_name /etc/rc.d/rc3.d/S020init-script_name
ln -s /etc/init.d/init-script_name /etc/rc.d/rc3.d/K020init-script_name
ln -s /etc/init.d/init-script_name /etc/rc.d/rc5.d/S020init-script_name
ln -s /etc/init.d/init-script_name /etc/rc.d/rc5.d/K020init-script_name
```

Manually Register a Daemon on a Red Hat Enterprise Linux 6.x System

1. Log on to the system as the root user.
2. In the /etc/init.d directory, create an init-script using the naming convention `sagrc-script_name` (for example, `sagis_default98`). If you need to create multiple init-scripts because you have multiple product instances on the same machine, use the naming convention `sagunique_numberrc-script_name`.
3. Add the content shown in step 3 of ["Manually Register a Daemon on an AIX System" on page 163](#) to the init-script.

4. Execute this command:

```
chmod +x /etc/init.d/sagoptional_unique_numberrc-script_name
```

5. Register the daemon by running these commands:

```
ln -s /etc/init.d/init-script_name /etc/rc.d/rc2.d/S020init-script_name
ln -s /etc/init.d/init-script_name /etc/rc.d/rc2.d/K020init-script_name
ln -s /etc/init.d/init-script_name /etc/rc.d/rc3.d/S020init-script_name
ln -s /etc/init.d/init-script_name /etc/rc.d/rc3.d/K020init-script_name
ln -s /etc/init.d/init-script_name /etc/rc.d/rc5.d/S020init-script_name
ln -s /etc/init.d/init-script_name /etc/rc.d/rc5.d/K020init-script_name
```

Manually Register a Daemon on a Red Hat Enterprise Linux 7.x System

1. Log on to the system as the root user.
2. In the /usr/lib/systemd/system directory, create an init-script using the naming convention `sagrc-script_name.service` (for example, `sagis_default98.service`). If you need to create multiple init-scripts because you have multiple product instances on the same machine, use the naming convention `sagunique_numberrc-script_name.service`.
3. Add the content below to the init-script.

```
# @full_path_to_rc-script@ ID for daemon.sh compatibility.
[Unit]
```

```

Description=description
After=multi-user.target
[Service]
Type=forking
User=user_that_installed_products
ExecStart=full_path_to_rc-script start
ExecStop=full_path_to_rc-script stop
[Install]
WantedBy=multi-user.target

```

4. Register the daemon by running this command:

```
systemctl enable init-script_name.service
```

Manually Register a Daemon on a Mac OS X System

1. Log on to the system as the root user.
2. In the /Library/LaunchDaemons directory, create an init-script using the naming convention `com.sag.sagrc-script_name.plist` (for example, `com.sag.sagis_default98.plist`). If you need to create multiple init-scripts because you have multiple product instances on the same machine, use the naming convention `sagunique_numberrc-script_name.plist`.
3. Add the content below to the init-script.

```

<?xml version="1.0" encoding="UTF-8"?>
<!DOCTYPE plist PUBLIC "-//Apple Computer//DTD PLIST 1.0//EN"
  "http://www.apple.com/DTDs/PropertyList-1.0.dtd">
<!-- @full_path_to_rc-script@ -->
<plist version="1.0">
<dict>
  <key>Label</key>
  <string>description</string>
  <key>ProgramArguments</key>
  <array>
    <string>/Library/LaunchDaemons/saglaunch.sh</string>
    <string>full_path_to_rc-script</string>
    <string>start</string>
  </array>
  <key>Disabled</key> <false/>
  <key>RunAtLoad</key> <true/>
  <key>KeepAlive</key> <false/>
  <key>AbandonProcessGroup</key> <true/>
  <key>UserName</key> <string>user_that_installed_products</string>
  <key>GroupName</key> <string>group_for_user</string>
</dict>
</plist>

```

4. In the same directory, create a file named `saglaunch.sh` and add the content below. This script is a stub for calling all further rc-scripts after waiting 120 seconds for NFS to be available.

```

#!/bin/sh
# wait for disk and execute
i=120; while [ $i -gt 0 -a ! -f $1 ]; do sleep 1; i=`expr $i - 1` ; done
cd `dirname $1`
$*

```

5. Set execution permissions for `saglaunch.sh`.

6. Register the daemon by running this command:

```
launchctl load -w /Library/LaunchDaemons/init-script_name.plist
```


B International Operating Environments

■ Overview	170
■ Language Packs	170
■ Extended Character Set	171
■ Configure Browsers and JRE Font	171
■ Configure the Proper Locale	172

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 products on all supported operating systems except Mac OS X.

Software AG DesignerLanguage Packs

By default, the language that Software AG 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 Software AG Designer by starting Software AG Designer with the `-nl` option. For example, open a command window and enter `eclipse.exe -nl ja_JP`.

Software AG 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 the steps below. For background information about the available translations, their completeness, and more, go to <https://www.eclipse.org/babel/downloads.php>.

1. Start Software AG 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/R0.12.1/luna` 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 Software AG 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 JRE 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 and Intelligent Business Operations 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 JRE 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 JRE'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=locale; export LANG</code>■ In a csh shell: <code>setenv LANG locale</code>

C Running in a Virtualized Environment

■ Overview	174
■ Running Your Products in an Amazon Elastic Compute Cloud Environment	174
■ Running Your Products in a VMWare Virtualized Environment	180

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 Process Performance Manager, read the *PPM Cloud Infrastructure* guide before continuing with this chapter. An Elastic IP is required for the installation.

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 and Intelligent Business Operations System Requirements*.

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 Software AG-supported operating system image. For information on the operating systems that are supported by your products and by Amazon EC2, see the *webMethods and Intelligent Business Operations System Requirements* .

Create the EC2 instance with Elastic Block Storage (EBS) boot. EBS (elastic block storage) is a service that provides block-level storage volumes for use with EC2 instances, and provides permanent storage for the data on your EC2 instance. When you use an image with EBS, you can stop and start the instance, and your data is retained across power operation stages. For the latest EBS options for Amazon web services, go to <http://aws.amazon.com/ebs>.

Note: Amazon EC2 also offers instance-stored storage, which is disk storage that is physically attached to the host computer for an EC2 instance, and has the same lifespan as the instance. When you use an image with instance-stored storage, however, you can only end an instance by deleting (terminating) the instance entirely, and your data is then lost. Create your EC2 instances with ESB boot instead.

2. Launch the image. For instructions, see the Getting Started guide available at <http://aws.amazon.com/documentation>.
3. 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 "[How to Use This Guide, Recommendations, and Product Licenses](#)" 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.
4. On the **Instances** page, wait for the status of the EC2 instance to change to `running`.
5. If you configured a DNS server (see ["Configuring a DNS Server" on page 174](#)), 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 174](#)), 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 174), 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 and Intelligent Business Operations 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 174). 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 or Process Performance Manager 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.

Responsibility for security is shared by AWS and you. For the AWS security statement, go to <http://aws.amazon.com/security>.

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 and Intelligent Business Operations 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 180).

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 and Intelligent Business Operations 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.