

Natural API Management: Installation Guide

Version 1.1

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This document applies to Natural API Management Version 1.1 and to all subsequent releases.

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

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About this Guide

This guide describes how to install Natural API Management.

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 Software and Hardware Support and Requirements

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Recommendations

Software AG strongly recommends you to create installation images of your products and store them on your internal network before you begin the installation. 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*.

RDBMS Support

If you installed the products listed below, you must create database components for them.

- webMethods Integration Servers
- webMethods API Gateway
- webMethods Mediator
- My webMethods Server

A database component is a grouping of database objects that can be used by one or more products. For example, Integration Servers write service status data to the ISCoreAudit database component, and Monitor reads the data and displays it in the My webMethods user interface. Each database component is named for the type of data that is written to it.

For information on RDBMSs that are supported by the product, see the *System Requirements for Software AG Products* document. For information on supported database drivers, see *Products and Database Components*.

Hardware Requirements

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

Module	Hard Drive Space	RAM	CPUs
Natural API Management			
- NaturalONE	3.00GB	2048MB	1

Module	Hard Drive Space	RAM	CPUs
- Natural Development Server (NDV)			
- Database Component Configurator			
- CentraSite			
--- Registry Repository *	2.25GB (3GB)	4GB (8GB)	1 (2)
--- Application Server Tier *	2.25GB (3GB)	4GB (8GB)	1 (2)
- Integration Server	300MB (500MB)	1GB (2GB)	1 (2)
- API-Portal	20GB	8GB	4
- API Gateway	1.5GB	1.75GB	1 (2)
- API Insight	512 MB	2GB	1
Software AG Designer	500MB (1.5GB)	1.5GB (2GB)	1 (2)

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

Using the Software AG Installer lists free space the Software AG Installer requires in its system temp (Windows) or temporary (UNIX) directory. For the Software AG Designer Eclipse platform, the installer needs 700MB additional free hard drive space in that directory. Each product plug-in you install in Software AG Designer can require from 50K to 150MB of additional free hard drive space.

For detailed information, see the *Using the Software AG Installer* guide.

Product Licenses

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

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

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

2 Installing Natural API Management

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Overview

This chapter provides product-specific preparation, installation, and uninstallation instructions. These instructions are intended for use with *Using the Software AG Installer*. That guide explains how to prepare your machine to use the Software AG Installer, and how to use the Software AG Installer to install and uninstall your Natural API Management modules. It describes the methods you can use to install and uninstall, and also JDK support for the installer, the uninstaller, and the modules, and explains installation and uninstallation logging.

Natural Requirements

Natural API Management can reuse business rules from applications in the Natural environment running on a mainframe (for example, z/OS) or on Linux, UNIX or Windows.

For access to remote Natural servers, NaturalONE requires that Natural Development Server (NDV) is enabled. If the NDV is not available, follow the installation instructions, as well as prerequisites, according to platform used.

Also, a Natural RPC server should be available in the environment.

Install Natural Development Server

Natural Development Server enables you to use the NaturalONE development environment to develop and test Natural applications in a remote Natural environment running on a mainframe (for example z/OS) or on Linux, UNIX or Windows. Check the requirements on product installation according to the platform used.

For Linux, UNIX and Windows platforms, the installation procedure is performed by Software AG Installer. See ["Install Server Components" on page 18](#) for more information.

For the z/OS platform, you should complete the following steps:

- Allocate the development server LOAD library (job NDVI008).
- Create a development server configuration file and sample CLIST (job NDVI009).
- Link the object modules into the NDV load library (job NDVI054).
- Create the NDV server front-end module (job NDVI060).
- Load Natural objects, error messages and samples for NDV (job NDVI061).
- Create server startup JCL (job NDVI200).

After the NDV server activation, Natural will be available for remote access (for example, by NaturalONE).

For detailed information, see the Natural Development Server documentation.

Preparation

Installation Methods and JDK Support

You can install the latest releases of products directly from the Software AG Empower Product Support website, or you can download them into an installation image according to the operating system needed and then install some or all products on one or more machines. Also, you can record an installation script and then install the products with no user input.

The JRE used to run the installer is included to start the Software AG Installer on Windows and Mac OS X systems. On all other UNIX and Linux systems, you must install a JRE to run the installer.

For detailed information about the installation methods and supported JDKs, see the *Using the Software AG Installer* guide.

Prepare to Install Any Module on Any Operating System

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

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

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

Prepare to Install Integration Server on a UNIX or Mac System

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

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

Shut Down Modules

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 modules into an existing Software AG product installation directory (that contains products from the same release), running modules 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.

Prepare to Install CentraSite

If you are going to install the 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.

Set the `shmmax` parameter to the memory (RAM) that is physically available on your machine. Otherwise you might have problems during CentraSite startup

For detailed information about values of kernel parameters, see the *Installing and Uninstalling SOA Governance and API Management* manual.

Prepare to Install API-Portal

If you are going to install the API-Portal 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.

- Check the setting for shared memory (kernel parameter `shmmax`).
- Check the setting for the system-wide maximum number of file descriptors (kernel parameter `fs.file-max`).
- Check the user, group, and process setting for the maximum number of open file descriptors.

For detailed information about values of kernel parameters, see the *Installing and Uninstalling SOA Governance and API Management* manual.

Prepare to Install API-Insight

When you install the Insight Server in standalone configuration, it uses, by default, a Java virtual machine (JVM) that is installed with the application. If you need to execute the installer for the Insight Server using a specific JVM already installed on your computer, refer to *Installation with a User-Specified JVM* of the *Insight Server Installation Guide*.

For detailed information about values of kernel parameters, see the *Insight Server Installation Guide*, and see the *Application Supported Platforms* section of the *Insight Server Release Notes* for the software requirements to run the Insight Server, Insight Agent, and Actional Intermediary.

Prepare to Install My webMethods Server

If you are going to install 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 defining and displaying the `ulimit` settings, 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 mind the following:

- Most products use the DataDirect Connect JDBC 5.1 driver. For information about options supported by this driver, see the DataDirect Connect documentation, available on the Software AG Documentation website.
- If you are using the installer in 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.

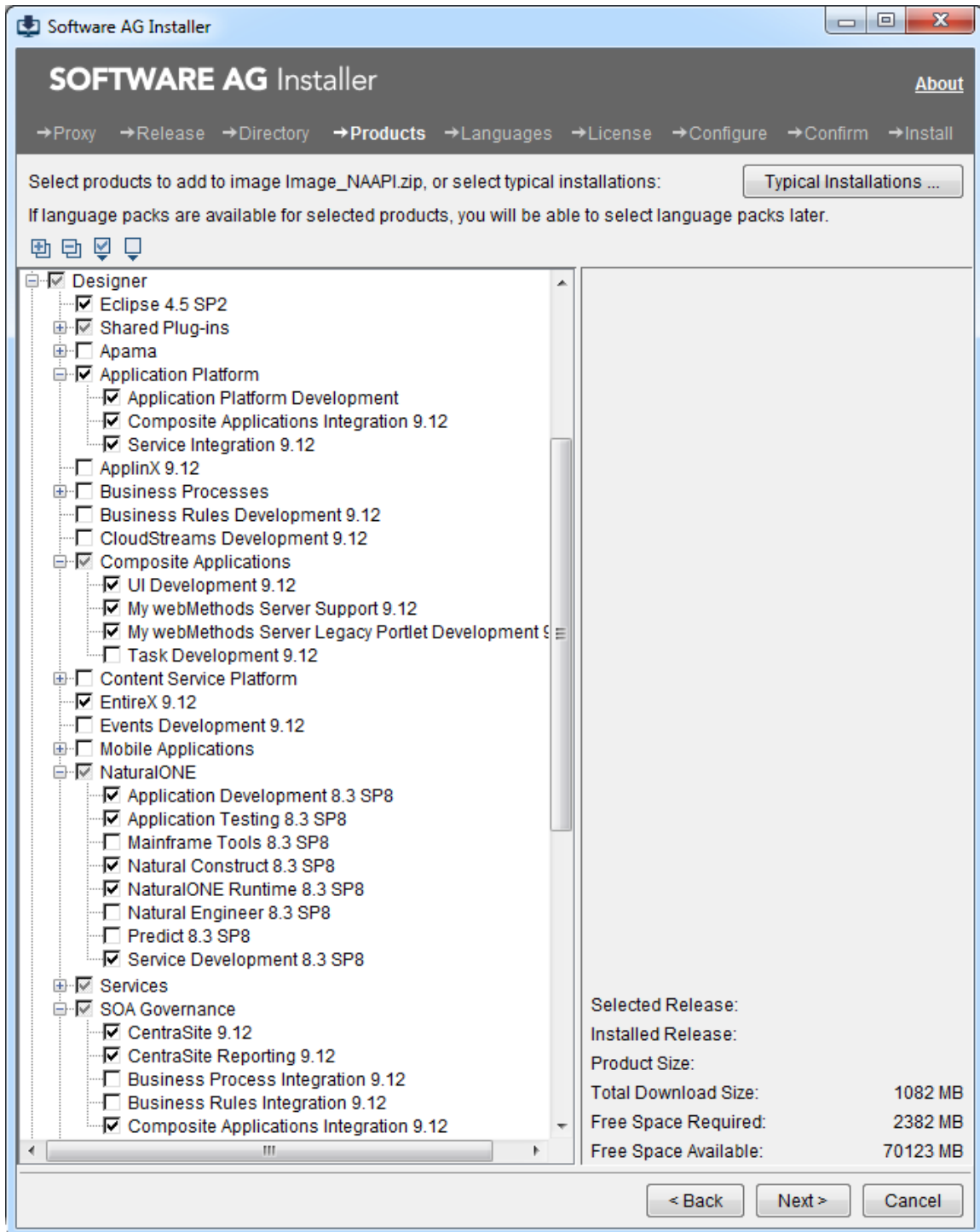
- For DB2, if the product will connect to a schema other than the default schema for the specified database user, you must specify these connection options in the database URL, where `AlternateID` is the name of the default schema that is used to qualify unqualified database objects in dynamically prepared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

Install Desktop Components

The desktop installation refers to development components provided by Software AG Designer and its plug-ins (for example, NaturalONE, Service Development).

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

In the module tree, choose the modules to install as shown in the following figure:



On the language pack panel, you can choose language packs to install to the default instance. After installation, you can run a script to create additional instances, to install packages in the package repository on any instance, and to install language packs on any instance.

Install Server Components

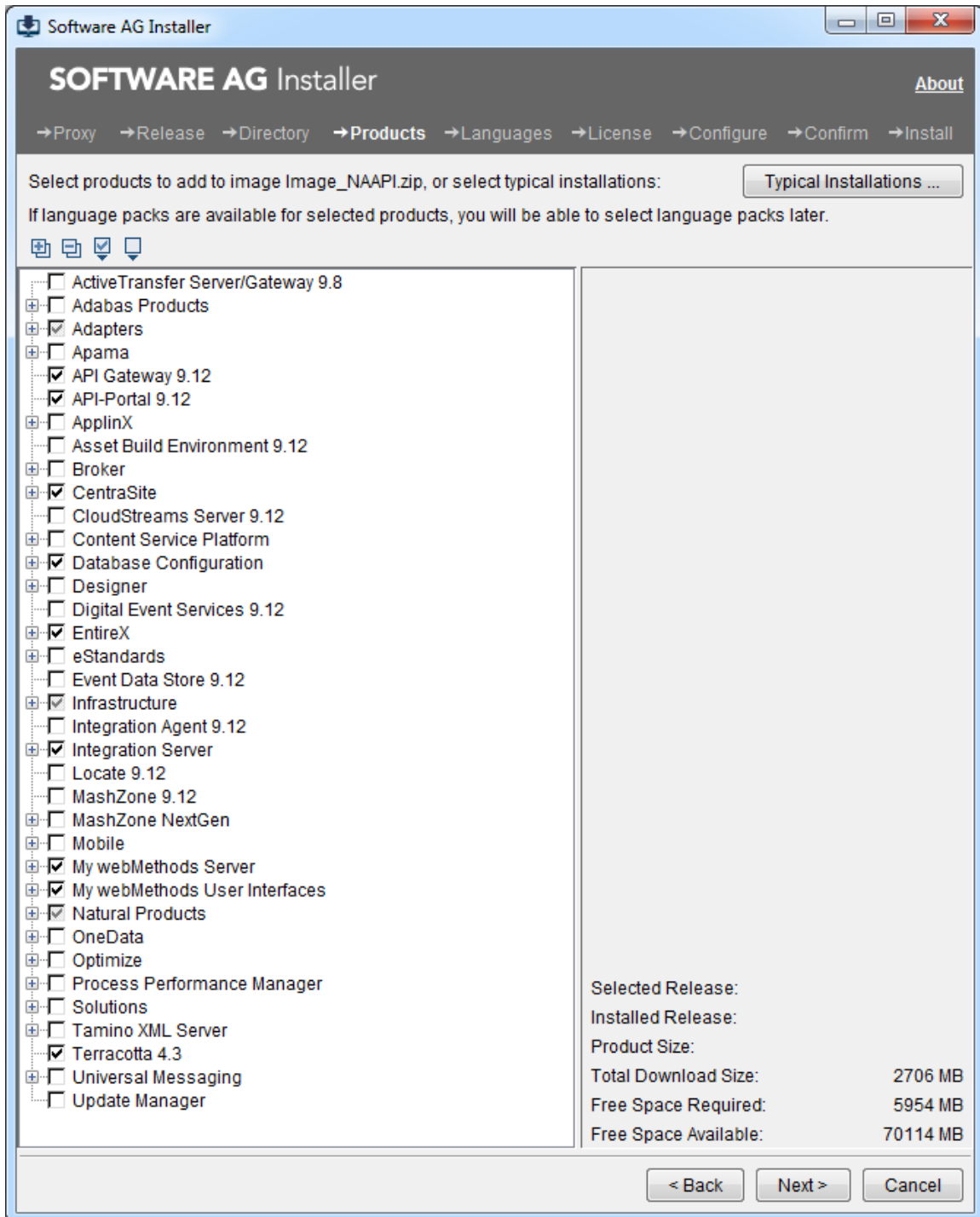
The server components refer to Integration Server with Mediator and API Gateway package, API Management (API-Portal), API Insight Server and Agent, CentraSite, BigMemory Max EX Edition for webMethods, My webMethods Server and adapters (as webMethods EntireX Adapter, webMethods Adapter for JDBC, webMethods Adapter for Enterprise JavaBeans).

These components can be installed/distributed into different machines according to environment requirements or the available infrastructure. This document considers one machine for the installation procedure. If you are planning to install into more than one machine, follow the instructions but select the products in the module tree according to your needs.

For API Insight, follow the instructions in the *Insight Server Installation Guide*.

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

In the module tree, choose the modules to install as shown in the following figure:

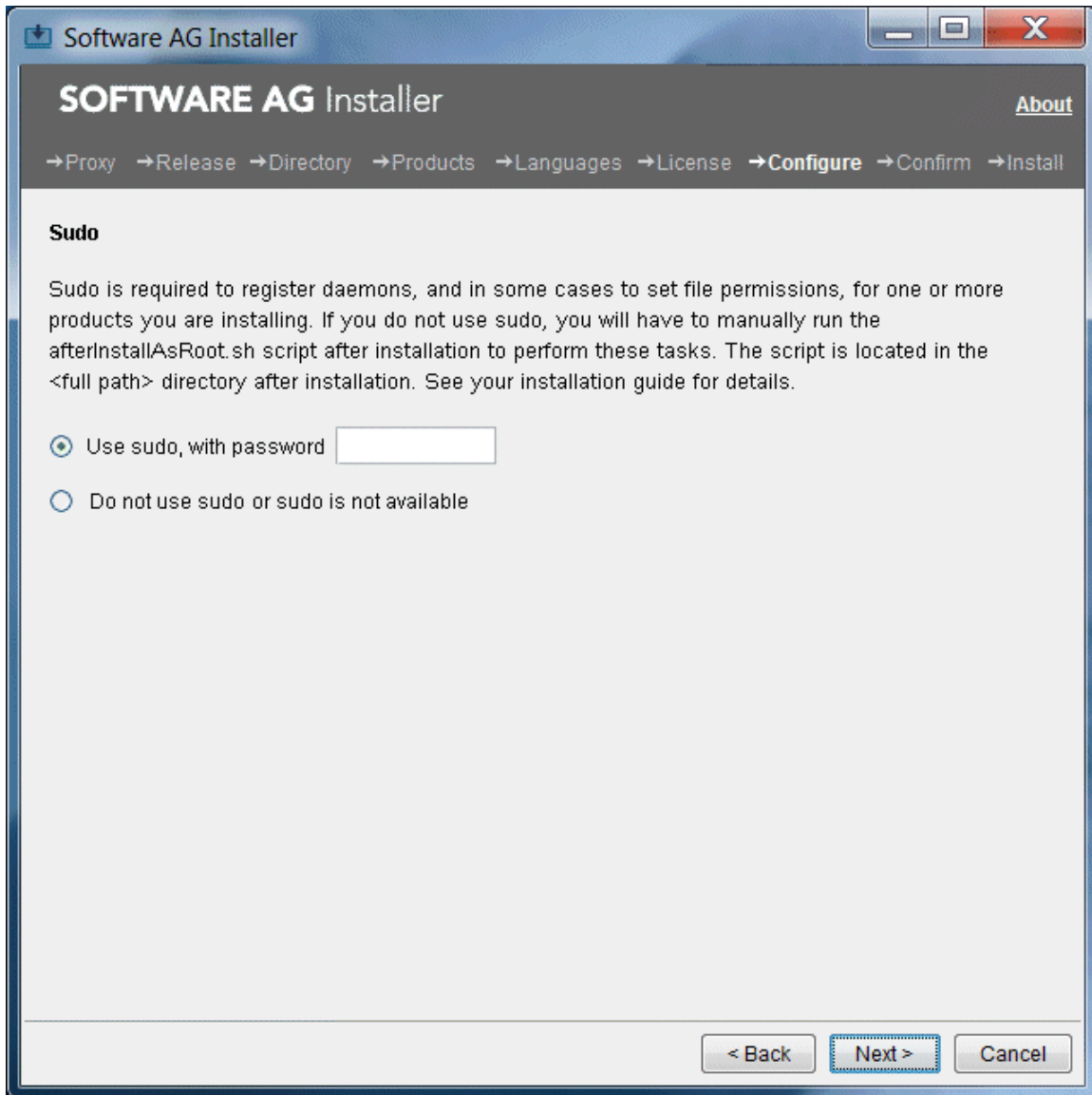


On the language pack panel, you can choose language packs to install to the default instance. After installation, you can run a script to create additional instances, to install packages in the package repository on any instance, and to install language packs on any instance.

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. 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.

Complete the Installation

Database Components

A database component is a grouping of database objects that can be used by one or more products. For example, Integration Servers write service status data to the `ISCoreAudit` database component, and Monitor reads the data and displays it in the My webMethods user interface. Each database component is named for the type of data that is written to it.

Use the Database Component Configurator to create, recreate or drop the components needed. For detailed instructions, see the *Installing Software AG Products* guide.

Complete the Installation

For some modules, you must perform certain tasks before startup.

For instructions on starting products and performing post-startup configuration and customization, see the documentation for that module.

If your installation will be managed by Command Central, you might be able to repeat the installation on another machine by creating a template that includes the products, fixes, and some configuration information, and applying the template to other machines.

For instructions, see the *Software AG Command Central Help*.

Apply Latest Fixes

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

Uninstall Components

You can uninstall specified products or all products from the local machine, and also create an uninstallation script. For detailed information, see the *Using the Software AG Installer* guide.

3 Technical Requirements

The technical requirements for Natural API Management are listed in the table below.

Prerequisites	Scope
<ul style="list-style-type: none"> ■ Any supported version of IBM z/OS ■ Any supported version of Natural ■ Any supported version of Natural Development Server compatible with Natural ■ TCP/IP stack available ■ Firewall-enabled communication between mainframe and Linux/UNIX/Windows 	Mainframe
<ul style="list-style-type: none"> ■ Any supported version of Natural ■ Any supported version of Natural Development Server compatible with Natural ■ TCP/IP available ■ Firewall-enabled communication between server and desktop 	Linux/UNIX/Windows
<ul style="list-style-type: none"> ■ EntireX Broker instance * ■ Natural RPC Server 	

* EntireX is not part of the Natural API Management solution. It must be licensed separately.