Nolio Application Release Automation

Installation and Administration Guide V4.5.1

February 2013

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Contents

Revisions

Ver.	Date	Description
4.1	Aug 2012	Updated Server varfile template information for installing with MS SQL Windows authentication.
		Added MS SQL 2012 to list of supported databases.
		Updated note that application installed without license file is evaluation copy.
		Updated suite and product names for version 4.5.1: ASAP became Nolio Application Release Automation, Nolio Automation Center became Nolio ASAP Release Automation.
4.5	Dec 2012	Added Admin user role and new set of user permissions.
		Updated built-in JRE to use Java 7.
		Updated Nolio Server components to use Java 7 64-bit.
		Updated Hardware Requirements.
		Updated Platform/Nolio Component Compatibility Matrix.
		Updated Execution Server for an Agent is available through the User Interface and completes with an automatic restart.
		Updated chapter on Managing Published Processes for process tagging. Sandbox concept included as part of process tagging functionality. Added option on publishing a process to add a tag; removed Promoting Published Processes.
4.5.1	Feb 2013	Nolio Repository now separate module; updated *Installing Nolio Server*; added *Installing Stand-alone Nolio Repository* chapter.
		Updated *Hardware Requirements* for disk space.
		Updated *Platform/Nolio Component Compatibility Matrix* for Nolio Repository.
		Updated procedure for *Configuring Linux/Solaris for Automatic Startup of Agent*.
		Updated note for AIX platform requirement for JRE 7 64-bit in *Platform/Nolio Component Compatibility Matrix* and *Installing Nolio Agent on GUI Platforms*.
		Updated procedure for *Local Agent Installation in Silent Mode*.
		Updated procedure and template for *Installing Agent using varfile*.
		Added permission enhancements to Can View Application role in *Understanding Permissions and Roles*, *Granting Permissions,* and *Granting Permissions for Applications*.
		Added topic for *Enabling Display of Deprecated Actions*.
		Removed SQL Server 2005 from list of supported databases.
		Removed Solaris 9 from *Platform/Nolio Component Compatibility Matrix*.

Ver.	Date	Description
		Added entry for Nolio Repository to *Ports and Protocols* table for retrieval agent.

Preface

The *Installation and Administration Guide* accompanies Nolio Application Release Automation in its latest release.

About this Document

This document provides the necessary information for:

- Installation and configuration of each of the modules that comprise Nolio Application Release Automation
- Ongoing Nolio ASAP Release Automation administration

Intended Audience

This documentation is intended for the following audience:

- IT technicians who manage the Nolio Application Release Automation data centers and personnel who are responsible for the operational side of your organization's multi-tier applications, on all servers and in all data centers. These readers are in charge of Nolio ASAP Release Automation installation.
- Nolio Application Release Automation administrators who are responsible for the initial setup and the ongoing administration of Nolio ASAP Release Automation.
- Release Operations Center administrators and operators who need to understand how Nolio Application Release Automation works.

Related Documentation

The Application Release Automation Documentation Set also includes the following:

- *Nolio Application Release Automation* | *Actions Reference Guide* - Nolio-installed action templates and categories.
- *Nolio Application Release Automation* | *Applications Support Matrix for Actions* - Supported applications for Nolio-installed actions.

- *Nolio Application Release Automation* | Application Interface Guide - Using Nolio APIs for Command Line Interface (CLI), REST and SOAP.
- *Nolio Application Release Automation* | *Custom Actions SDK* - Implementing a custom actions library.
- *Nolio Application Release Automation* | *Introduction to Nolio* - Getting started with Nolio.
- *Nolio Application Release Automation* | *Release Notes* - Details of new features, enhancements, resolved issues, and how to upgrade to latest version of Nolio Application Release Automation.
- *Nolio Application Release Automation* | *Security Description* - Information on Nolio Application Release Automation security and certificates.
- *Nolio Application Release Automation* | *System Upgrade Guide* - Upgrading to the latest version of Nolio Application Release Automation.
- *Nolio ASAP Release Automation* | *User Guide* - Using Nolio ASAP Release Automation to develop and execute automated release processes.
- *Nolio Dashboard* | *User Guide* - Using Nolio Dashboard.
- *Release Operations Center* | *User Guide* - Using Release Operations Center.
- *Nolio Zero Touch Deployment* | *ASAP Plugin for Hudson/Jenkins Continuous Integration (CI) Server* - Installing and running the Nolio ASAP Plugin for Hudson/Jenkins CI servers.
- *Nolio Zero Touch Deployment* | *Release Operations Center Plugin for Hudson/Jenkins Continuous Integration (CI) Server* - Installing and running the Release Operations Center Plugin for Hudson/Jenkins CI servers.
- *Nolio Zero Touch Deployment* | *Plugin for Microsoft® Team Foundation Server (TFS)* - Installing and running the Nolio Plugin for Microsoft TFS.
- *Nolio Zero Touch Deployment* | *Plugin for ServiceNow* - Installing and running the Nolio Plugin for Service Now.

Technical Support

If you have any questions, please contact Nolio technical support.

- Telephone:
  - North America Toll free number: 1-888-869-8485 - ext. 1
  - United Kingdom Toll free number: 0-800-680-0429 - ext. 1
- Email: support@noliosoft.com
- Online: http://www.noliosoft.com/support

Chapter 1

Introduction

In This Chapter

The *Nolio Application Release Automation Installation and Administration Guide* describes the installation process of Nolio Application Release Automation version 4.5.1.

This chapter introduces Nolio Application Release Automation's architecture and details system requirements and platform compatibilities for each of the Nolio Application Release Automation modules.

Nolio ASAP Release Automation Architecture

Nolio ASAP Release Automation is a platform for the automation of complex multi-tier applications. It includes the following modules:

- **Nolio Data Management Server** (referred to as **Data Management Server**) - to which clients connect in order to access Nolio ASAP Release Automation
- **Nolio Execution Server** (referred to as **Execution Server**)
- **Nolio Agents** (referred to as **Agents**)
- **Nolio Client UI** (referred to as **Client UI**)
- **Nolio Repository**

Execution Servers and **Agents** are modules that work in the background to enable management and automation of multi-tier application environments.

When a process is executed in Nolio ASAP Release Automation, the appropriate data and instructions are channeled from the **Data Management Server** to the **Execution Server** that manages a specific data center. For the purpose of managing data center activities, the Nolio ASAP Release Automation also includes any number of **Agent** modules, each of which controls a specific physical server involved in the execution of a process. Each **Agent** receives the appropriate instructions from the **Execution Server** and implements them on the server to which it is linked.

The **Client UI** is the user interface application that connects to and interacts with the **Data Management Server**. It is downloaded and installed automatically upon accessing the Nolio ASAP Release

Automation Web server. The **Client UI** is installed using Java Web Start technology requiring administrative privileges on the client machine.

The **Nolio Repository** is the built-in repository that enables user to store artifacts within the Nolio system. The Nolio Repository shortens the time required to retrieve an artifact at execution time and enables centralized repository management capabilities. Using the built-in artifact repository enables the management of many application components used by a release which are not externally managed, such as external content and configuration files. Additionally, the Nolio Repository provides the capability to manage version components and content critical to a release. By default, the Nolio Repository is installed together with the Nolio Data Management Server.

Note: An option to install a separate Nolio Repository is available using a dedicated installer. More details are included in this guide.

System Requirements

System requirements depend on the Nolio Application Release Automation components being installed.

Hardware Requirements

The following values are the minimum requirements for the installation phase.

Notes:

- Based on your system configuration and load, additional memory, disk space, and processors might be required.
- When Nolio components are installed on a single machine, the MEMORY and DISK-SPACE values should be summed.

Component	RAM	Processors	Disk Space (See Notes)
Complete Installation	4 GB	4 CPUs	30 GB
Data Management Server	4 GB	4 CPUs	10 GB
Execution Server	4 GB	2 CPUs	20 GB
Agent	512 MB	1 CPU	1 GB
Client UI	1 GB		
Release Deployment Dashboard	512 MB		
Nolio Repository	2 GB	1 CPU	Depends on expected size and number of artifacts to be stored.
TEMP location			3.5 GB

Notes:

- The preceding disk space requirements represent the **minimum necessary for the installation phase**. The operational phase requires additional disk space for file transfers. The additional disk space required is calculated at 1.5 times the total size of files transferred per hour.
- It is also recommended that the Data Management Server and the database server be installed on separate machines.
- The installation of Nolio Server component requires that there be at least 3.5 GB free disk space in the TEMP location as defined in the TEMP environment variable.

Recommended Hardware Configuration

The Nolio Server components should be installed onto separate machines. In particular, the database used by Nolio should not share the same resources as the Nolio Data Management component. It is also highly recommended for performance to separate the Nolio Data Management Server and the Nolio Execution Server.

Platform/Nolio Component Compatibility Matrix

The following table identifies the platforms supported for each ASAP component:

Table 1: Platform/Component Compatibility Table

Platform	Nolio Component				
	Nolio Data Management (Center)	**Nolio Execution Server**	**Nolio Agent**	**Client UI**	**Nolio Repository**
AIX 6.1			Supported *		
	***Agent Note**: IBM Java JRE 7 must already be installed on AIX machine. See *Important Notes about Java and Agent Installation* (on page 44).				
Linux (Red Hat Enterprise Linux 5.2 or higher, CentOS, Ubuntu, SUSE, Oracle Linux 5 update 6)	Supported (64-bit only Kernel 1.6 or higher)	Supported (64-bit only Kernel 1.6 or higher)	Supported (32 and 64-bit Kernel 1.6 or higher)	Supported (JRE 6 update 16 or higher)	Supported (64-bit only)
Solaris 10 x86 Solaris 10 SPARC	Supported (64-bit only)	Supported (64-bit only)	Supported		Supported (64-bit only)

Platform	Nolio Component				
	Nolio Data Management (Center)	**Nolio Execution Server**	**Nolio Agent**	**Client UI**	**Nolio Repository**
Solaris 11 x86	Supported (64-bit only)	Supported (64-bit only)	Supported		Supported (64-bit only)
Windows 2000			Supported	Supported (JRE 6 update 16 or higher)	
Windows 2003			Supported (32 and 64-bits)	Supported (JRE 6 update 16 or higher)	
Windows 2003 R2	Supported (64-bit only)	Supported (64-bit only)	Supported (32 and 64-bit)	Supported (JRE 6 update 16 or higher)	Supported (64-bit only)
Windows 2008 Windows 2008 R2	Supported (64-bit only)	Supported (64-bit only)	Supported (32 and 64-bit)	Supported (JRE 6 update 16 or higher)	Supported (64-bit only)
Windows 7 Windows VISTA Windows XP			Supported	Supported (JRE 6 update 16 or higher)	

Database Prerequisites

Nolio ASAP Release Automation requires a database to store data, changes, and configurations.

During installation you are able to select one of the following database vendors:

- MySQL
- Oracle
- SQL Server

Note: If you select SQL Server, the Data Management Server must also be installed on a Windows machine.

Supported database versions are as follows:

MySQL	Oracle	MS SQL Server
Versions: 5.1.30 and higher **Note**: InnoDB Storage Engine must be enabled.	Versions: 10g and higher	Versions: SQL Server 2008 and higher

MySQL Installation Requirements

A database user must be created for use by the Nolio ASAP Release Automation application. The user has the option to decide which database user ASAP is to use. The database user may be **root** or it can be a 'regular' user with the privileges described in this section.

The following scenarios are supported:

- Install with root user.
  - No special configurations are required.
  - User supplies the MySQL database connection details.
- Install with non-root user. Two options are supported:
  - A database created by the database administrator.
    - A database is created by MySQL DBA with UTF-8 character set.
    - InnoDB storage is enabled in this MySQL instance.
    - A database user should be created with the following privileges:

      ```
      GRANT ALL PRIVILEGES ON <db_name>.* TO <username>@<hostname>
      IDENTIFIED BY '<password>';

      For example: GRANT ALL PRIVILEGES ON NOLIO_DB.* to nolio@localhost
      IDENTIFIED by 'nolio';
      ```

  - A database created by Nolio as part of the installation.
    - A database user should be created by the MySQL DBA. The user should be granted privileges to create a database and its objects, as follows:

      ```
      GRANT CREATE, DROP, REFERENCES, EVENT, ALTER, DELETE, INDEX, INSERT,
      SELECT, UPDATE, CREATE TEMPORARY TABLES, LOCK TABLES, TRIGGER, CREATE
      VIEW, SHOW VIEW, ALTER ROUTINE, CREATE ROUTINE, EXECUTE ON *.* TO
      <username>@<hostname>;
      ```

During installation, connection details are requested.

The existence of a running database instance is a mandatory requirement for Nolio ASAP Release Automation.

Note: If the user chooses to use an existing database, the installer checks if the database is empty. If the database is not empty, or contains a non-Nolio schema, the installation is cancelled and an explanatory message will be displayed.

Microsoft SQL Server Installation Requirements

Nolio ASAP Release Automation requires use of a dedicated database. A dedicated database can be created during the ASAP installation or previously by the DBA.

Nolio installations working with MS SQL Server require the following SQL Server configuration:

- TCP Protocol Enabled
- SQL Server Browser Service started and set to automatic startup mode

If the database is not empty, or contains a non-Nolio schema, the installation is cancelled and an explanatory message will be displayed.

The database configuration phase of the ASAP installation requires the following:

- Full MS SQL instance name: <HOSTNAME>\<INSTANCENAME>
- MS SQL DBA username used to create the:
  - Connection to the MS SQL instance
  - Required dedicated database
  - Specific database login
- Dedicated database name
- Login name for database ownership

Windows and SQL authentication methods are supported during and after installation. Select the desired authentication method during installation.

Note: Selecting the Windows authentication method for the initial MS SQL instance connection requires that the logged-in user who is running the installation is permitted to log in to this instance and has DBA rights.

Alternatively, you may define the Nolio Server service owner with the permissions necessary to connect to the MS SQL Server instance.

For additional details, see *Using MS SQL Server as Database for Nolio* (on page 148) in the *Installation and Administration Guide*.

Oracle Installation Requirements

Nolio ASAP Release Automation requires a dedicated database user for its use. It is advisable that the Nolio database user be assigned a dedicated TABLESPACE.

The installation enables creation of the database user and tablespaces. Alternatively, a DBA may create the dedicated database user and tablespace before installation.

During installation the user is verified. If the user exists and already holds database objects which are not part of the Nolio schema, the installation is cancelled and an explanatory message will be displayed.

The Oracle instance to be used by ASAP should be configured with UTF encoding (UTF8 or UTF16).

The following input information is required to create the Nolio schema on Oracle:

1. Hostname or IP address of the Oracle Database.
2. Oracle SID name, or Service name, as described in *Using Oracle as Database for Nolio* (on page 156).
3. Oracle Listener Port.
4. Oracle Database user with DBA privileges, required for initial connection verifying Oracle version and creating the Nolio DB user, if necessary.

   Note that the DBA privileged username and password are not stored anywhere.
5. Tablespace name to be used by the Nolio DB user.

For additional details, see *Using Oracle as Database for Nolio* (on page 156).

Web Browsers and Flash Player

The Nolio Release Deployment Dashboard is a Web-based application that requires Adobe Flash Player 10 to be installed on each client machine. If Adobe Flash Player was not previously installed on the client machine, a warning message notifies the user that the option to view portal and report graphs is disabled.

The following Web browsers are supported:

- Microsoft Internet Explorer 8.0 and higher.

  When using Release Operations Center, IE 9 in compatibility mode is not supported.
- Google Chrome.
- Mozilla Firefox 7.0 and higher.

Ports and Protocols for Nolio ASAP Release Automation

The following ports and protocols are used by Nolio ASAP Release Automation.

Table 2: Ports and Protocols

Source / Protocol	Direction	Target	Target Port	Reason
Nolio UI (HTTP/HTTPS)	From To	ASAP	8080/8443	All communication between main Nolio UI (and Dashboard) and Nolio Server (default port).
NAC (HTTP/HTTPS)	From To	NES	8080/8443	Initial connection established between ASAP and NES.
NAG (HTTP)	From To	Nolio Repository	8080	A retrieval agent needs HTTP connection to Nolio Repository. Default port is 8080.
NAG (TCP/SSL)	From to + Bidirectional	NES	6600	Transfer of process results back to NES at end of execution. Also used during file transfer during a process (default port).
NAG (TCP/SSL)	From To	NES	6900	If a NAG is installed on NES, recommended to open up traffic from all NAG to NES on 6900 (default port). In this case, all NAG to NES on 6600 must be bidirectionally enabled.
NES (TCP/SSL)	Bidirectional	NES	6600	If multiple NES exist AND NAG is connected to various NES to work together in a single process run, bidirectional communication between those NES is required.
Additional ports:				
NES	To	NAG	135 and 445	Remote agent installation on Windows platforms.
NES	To	NAG	22	Remote agent installation on Unix via SSH.
NAC	To	LDAP/ LDAPS	389/636 (default)	Importing and authenticating users from an LDAP source.
NAC	To	SMTP	25 (default)	Sending e-mail notifications.
NAC	To	Database	DB listening port	If database resides on different machine than the NAC.

Note: All port numbers are configurable. All source ports are random.

Required User Credentials for Installation of Nolio Server

The following user credentials are required to install the Nolio Server:

- Windows
  - During installation the logged in user must have administrative privileges in order to enable creation of the required Nolio Service.
  - The owner of the Nolio Server service is configured by default to run using the Local System account.

    However, during the installation phase, the Nolio Server service owner can be assigned to a different user. The Server service owner user should:
    - Be part of the Administrator group on the Windows machine.
    - Have 'Log on as a Service' permission.
    - Have read, write, and execute permissions on the Nolio ASAP Release Automation installation folder.
- Linux and Solaris
  - Nolio ASAP Release Automation can be installed by any UNIX user that has permissions to create and update files under the installation directory.
  - Installation files should be extracted, using the installer, to a dedicated folder that includes only Nolio ASAP Release Automation files.

    For example, if the target location for Nolio ASAP Release Automation is under `/opt`, the Nolio ASAP Release Automation files are extracted by the installer to `/opt/NolioAutomationCenter`. The user assigned by UNIX should have write permissions for the `/opt` folder.

Considerations if Using Custom Actions Library

If you have developed a **Custom Actions** library using the *Nolio Application Release Automation Custom Actions SDK*, you must ensure that the developed Custom Actions are stored in the `Nolio ASAP Release Automation /customerActions` folder and *not* the `/actionslib` folder as the `/actionslib` folder is overwritten during installations and upgrades.

Security

Nolio uses its own certification file (JKS) to ensure secure communication between Nolio components.

If required, self-signed certificates can be used. For instructions on how to create self-signed certificates and how to use them within Nolio, see *Nolio Application Release Automation Security Description*.

Chapter 2

Installing Nolio Server

In This Chapter

The Data Management Server and Execution Server are installed through a single installation wizard, **Nolio Server Setup**. The Nolio wizard supports two types of installation:

- **Complete Installation**: Installs all the components of the Nolio platform (Data Management Server, Execution Server, Agent, Nolio Repository, and Demo application) on a single server.

  In the Setup Wizard, Installation Type Selection defaults to **Complete installation**.

- **Custom Installation**: Installs selected components separately, generally either the Data Management Server or the Execution Server, thus supporting distribution of the Nolio components across multiple servers.

  For a list of supported component combinations, see *Selecting Components for Custom Server Installation* (on page 38).

  For understanding the custom installation for any combination of Data Management and Execution Server, without the Database, see *Who Uses Custom Installation* (on page 38).

When installing a Nolio Agent only, a dedicated executable, `nolio_agent_<OS>`, is used.

Notes:

- For the installation package to be invoked on a Linux system, support for 32-bit applications must be enabled.
- The Nolio Repository is installed together with the Nolio Data Management Server. To use the repository on a different machine, see *Installing Stand-alone Nolio Repository* (on page 59).
- The installation process described in this section refers to platforms with graphical user interface (GUI) capabilities. The non-graphical installation process provides the same configuration options through a Command Line Interface (CLI).

Nolio Server service is set to start automatically on Windows platforms.

For Linux and Solaris platforms, see *Controlling Nolio Server service on Non-Windows Platforms* (on page 67) for information on how to enable the Server service to start automatically on system restart.

Important Notes:

- The Nolio Server components – Nolio Data Management and/or Nolio Execution Server - can be installed on a 64-bit platform *only*.
- You should have at least 5 GB free disk space in the installation partition.

To install using the CLI:

1. Transfer the installation file to the target machine.
2. Grant “a+x” permission to the installation file:

   ```
   chmod a+x nolio_server_<OS>_4_5_1_b<#>.sh
   ```

3. Execute the installation file:

   ```
   ./nolio_server_<OS>_4_5_1_b<#>.sh -c
   ```

4. Follow the instructions on screen.

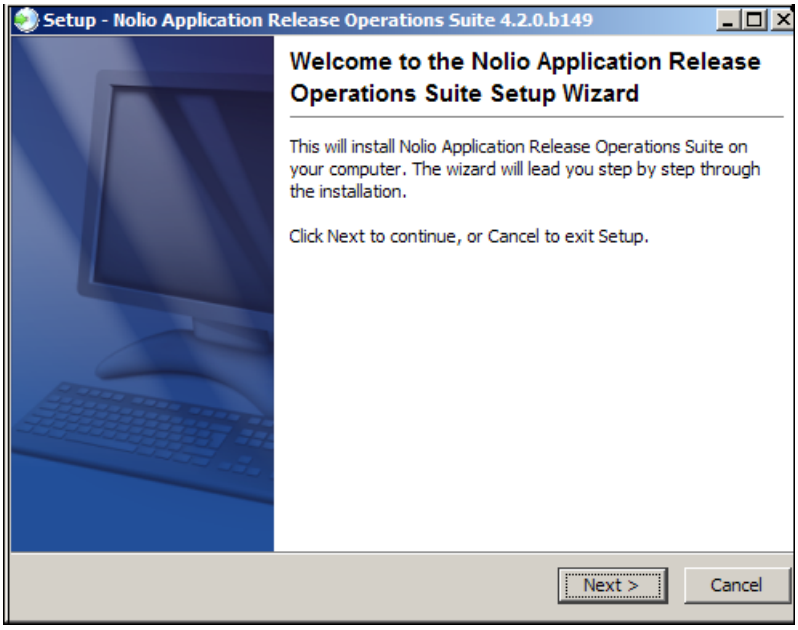
Installing Nolio Server on GUI Platforms

Note: During the installation, you may define a user as the Nolio Server service owner. The defined user must be an Administrator and have 'Log on as a service' user rights assignment in the domain security policy settings.

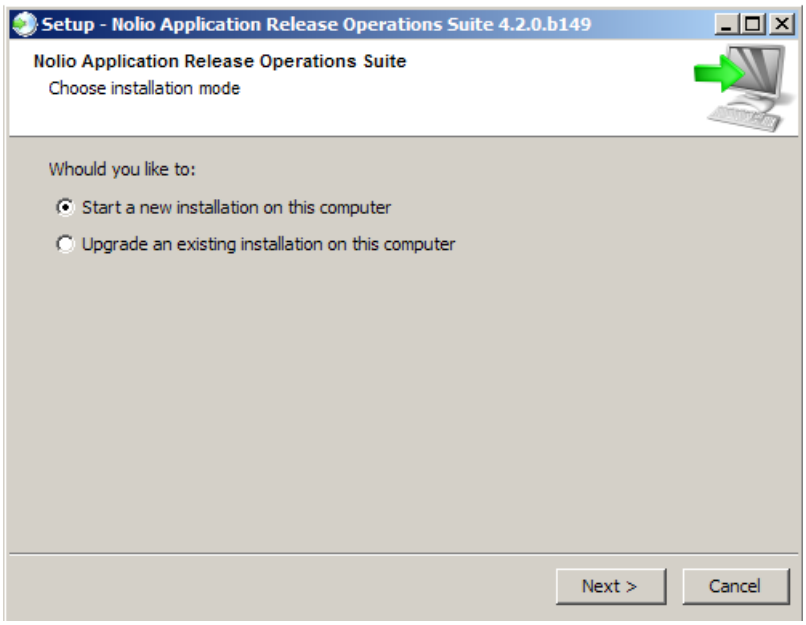
To install the Nolio Server on platforms with GUI capabilities:

1. For Linux and Solaris only: Grant "a+x" permissions to the `nolio_server_Linux-x64/Solaris_4_5_1_b<#>.sh` file.

2. Invoke the wizard service executable file. The **Welcome** window opens.



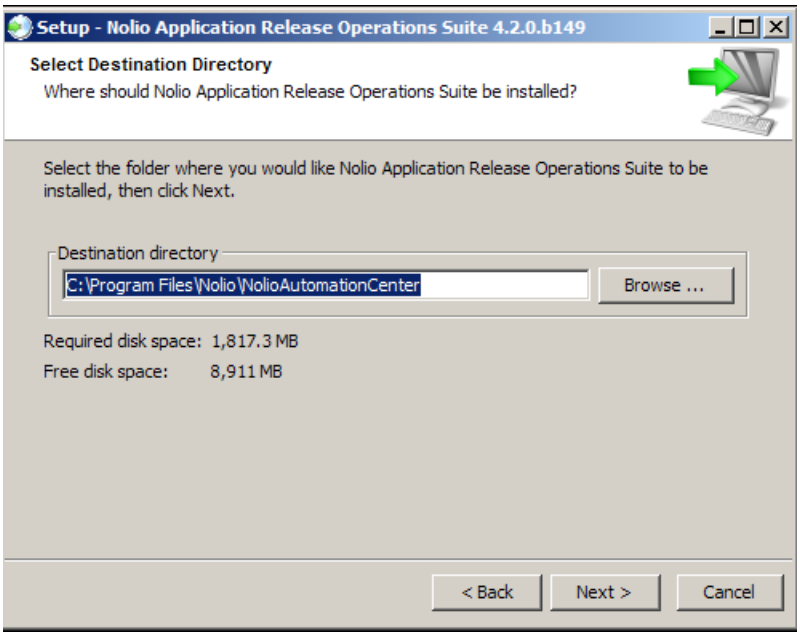
3. Click **Next**. The installation mode selection window opens.



4. Select **Start a new installation on this computer**.

Note: If Nolio is already installed on the server, you should choose the '**Upgrade an existing installation on this computer**' option to upgrade the server. See *Nolio Application Release Automation System Upgrade Guide*.

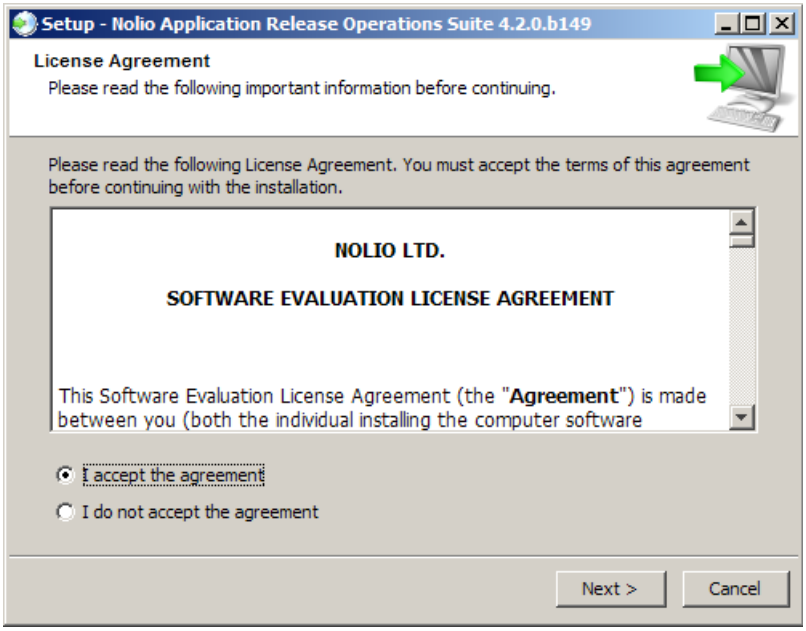
5. Click **Next**. The **Select Destination Directory** window opens.



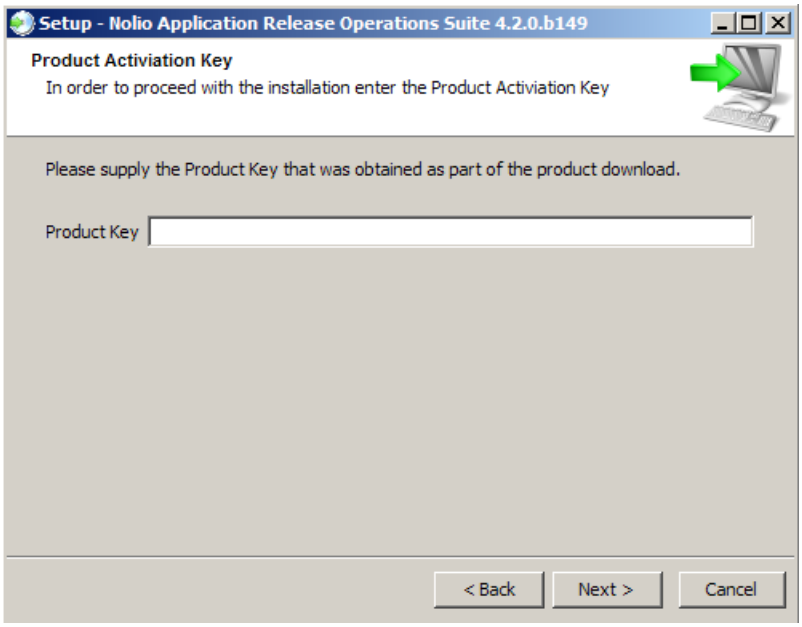
6. Specify the path of the installation root for this Nolio ASAP Release Automation module. It is recommended that you accept the default directory displayed, but you can browse to an alternative directory location on the target machine. If the directory you specified does not already exist, it is created now.

7. Click **Next**. The **License Agreement** window opens.

8. Read the terms of the **License Agreement** and indicate your acceptance by selecting the relevant radio button.

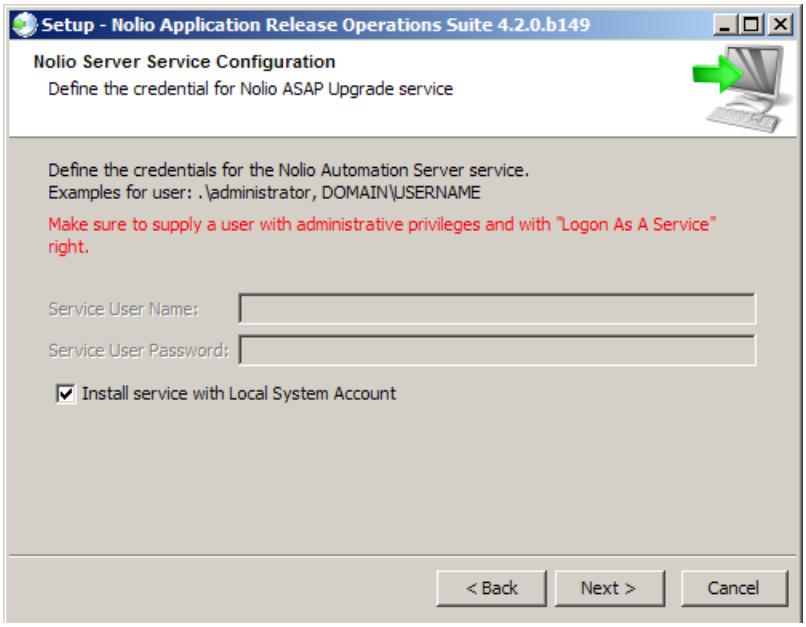


9. Click **Next**. The **Production Activation Key** window opens.



10. Enter the **Product Activation Key** which you received as part of the product download process.
11. If default ports are not available, a dialog box opens with a prompt for the addition of required ports.

    Enter the new default ports.
12. Click **Next**. The **Nolio Server Service Configuration** window opens.



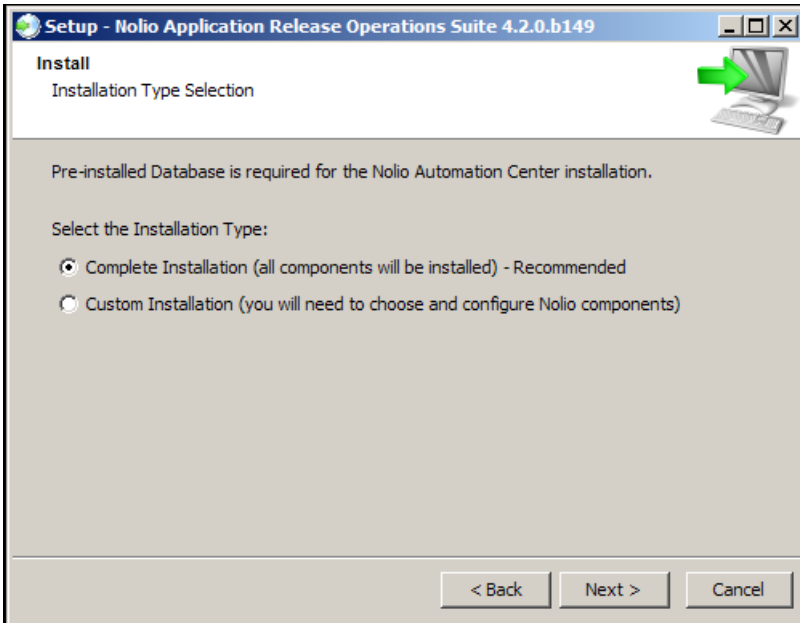
Ownership of the Data Management server and the central Execution Server is determined by the owner of the Nolio Server service.

Note: The entered user *must* have administrative privileges and "Log on as a service" user rights assignment in the domain security policy settings.

a. In the **Service User Name** box, enter the user name for the Nolio Server service.

b. In the **Service User Password** box, enter the password for the service user.

13. Click **Next**. The **Installation Type Selection** window opens.



14. Select either:

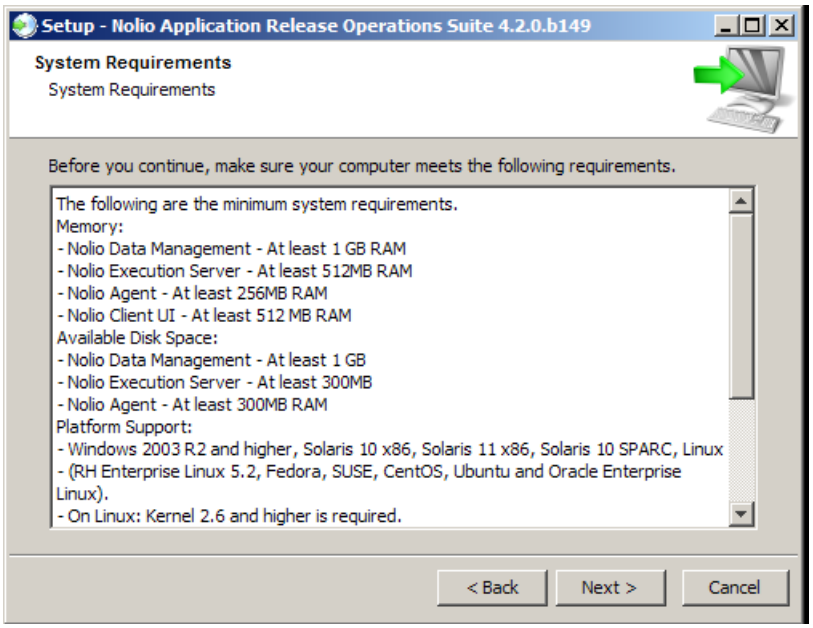
- **Complete Installation**: to install all components on a single server **(recommended)**

  OR

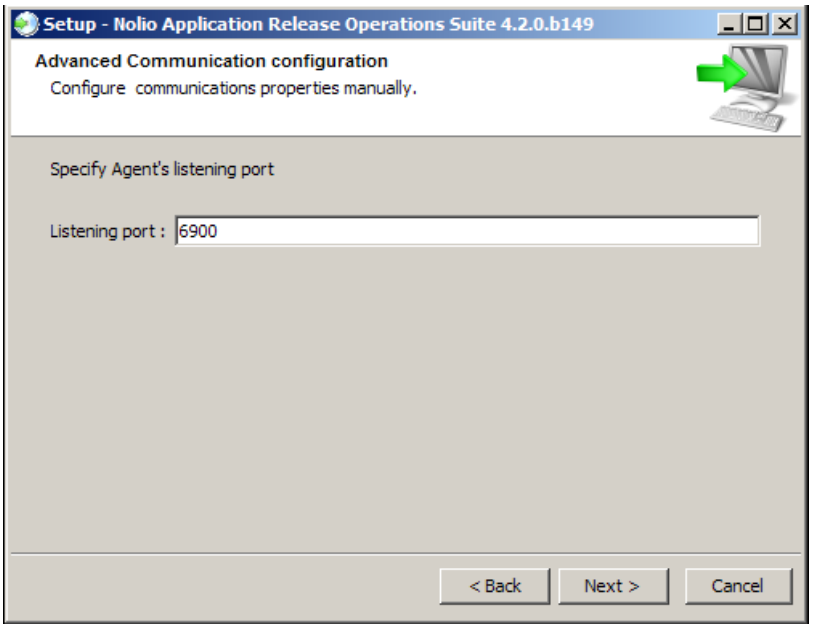
- **Custom Installation**: to choose and configure Nolio components.

  See *Who Uses Custom Installation* (on page 38) for a description of configuration and condition options.

15. Click **Next**. The **System Requirements** window opens, listing the software and hardware requirements.



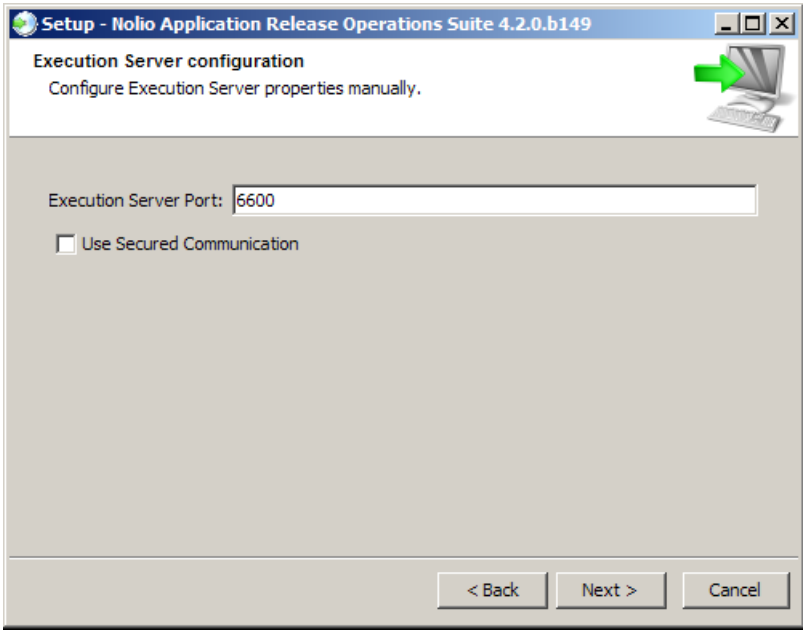
16. Click **Next**. The **Advanced Communication Configuration** window opens.



17. Specify the port to be used by the Nolio agent. The default port is 6900 for Full Installation type and 6600 for Custom Installation type.

Note: When working in Custom Installation type, this window will not appear if the Agent component was not selected.

18. Click **Next**. The **Execution Server Configuration** window opens.

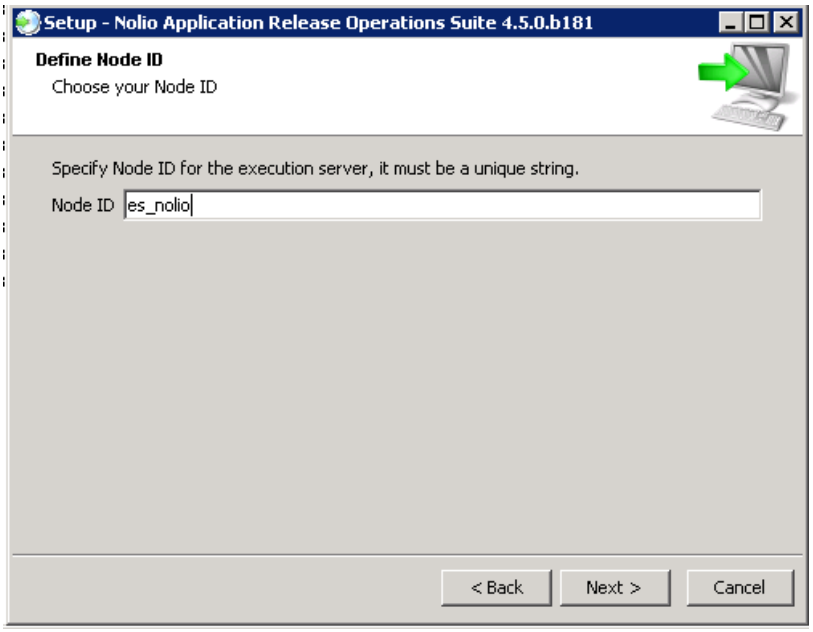


19. Specify the port to be used by the Execution Server. The default port is 6600 **(recommended)**. In this window, you can also define whether to use secure communication by selecting the check box.

Note: When working in Custom Installation type, this window does not appear if the Execution Server component was not selected.

20. Click **Next**.

21. If Custom Installation was selected and included the installation of an Execution Server, the **Define Node ID** window opens.



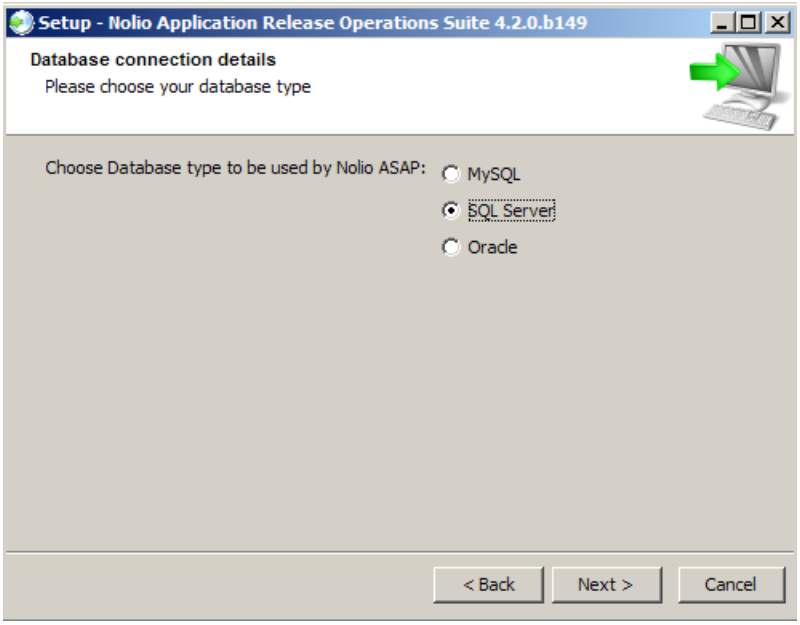
The installation provides a default value, usually es_<SERVER-NAME> or an IP.

a. Enter a unique name for the Execution Server (Custom Installation only).

b. Click **Next**.

Note: This window appears only in Custom Installation type and only if the Execution Server component was selected. See *Installing Additional Nolio Execution Servers* (on page 40) for information on connecting the new Execution Server to the Nolio system.

22. The **Choose Database Type** window opens displaying the database vendors supported by Nolio. By default, MySQL is the selected database.



23. Select the database type for the installation.

24. Click **Next**. The **Database Connection Details** window for the selected database type opens. The Database Connection Details window displays the details for the pre-installed database instance. The details are required to enable Nolio ASAP Release Automation to create the required schema and to store configurations and changes. The installer checks the connection to the database and the privileges of the supplied database user name.

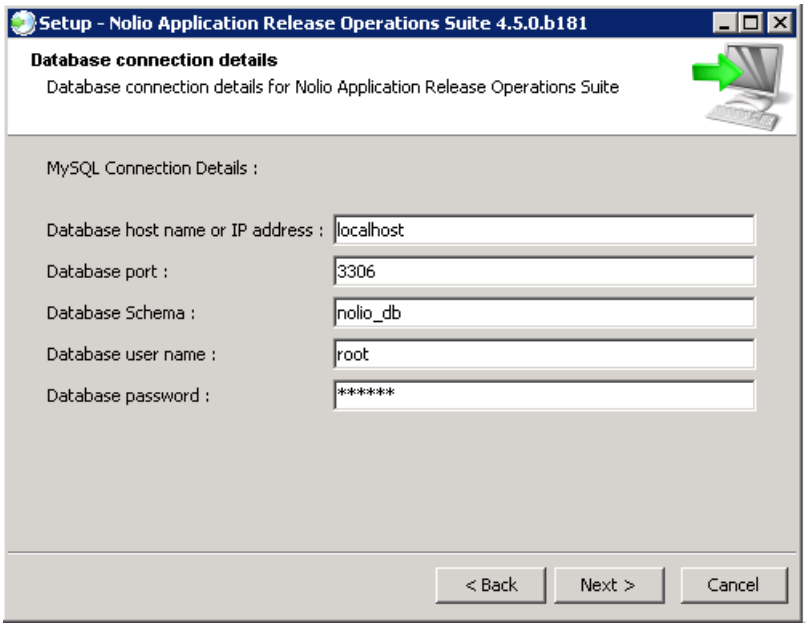
    The Installer creates the new database and schema or connects to the previously created database. If the previously created database is not empty or is already populated with the Nolio schema, the installer stops and alerts the user.

    For complete details on the user and privilege requirements for different database installation types, see *Database Prerequisites* (on page 15).

MySQL:

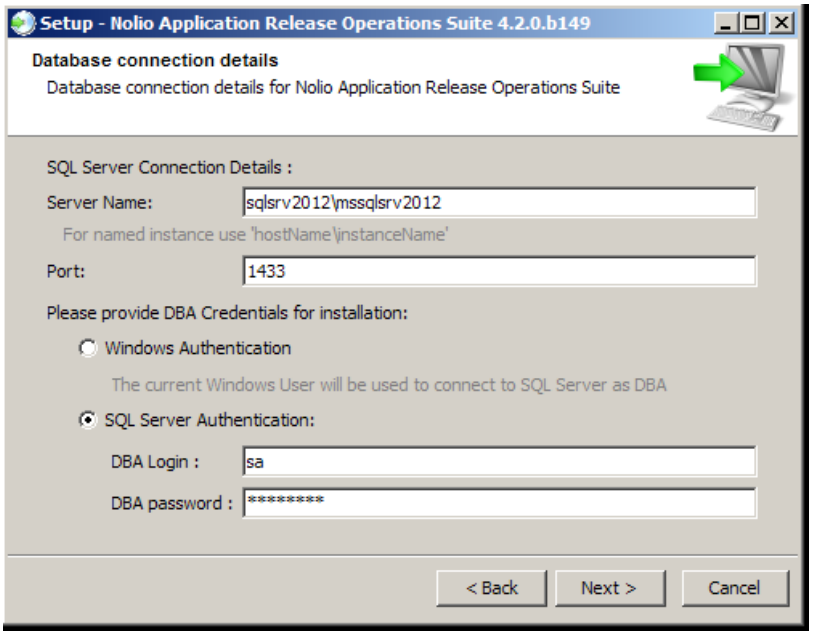
25. If MySQL was selected, the **MySQL Connection Details** window opens.

    Enter the database connection details.



MS SQL Server:

26. If SQL Server was selected, the **SQL Server Connection Details** window opens.



    a. In the **Server Name** box, type the SQL Server full instance name as it appears in the output after executing the following SQL command:

```
select @@servername;
```

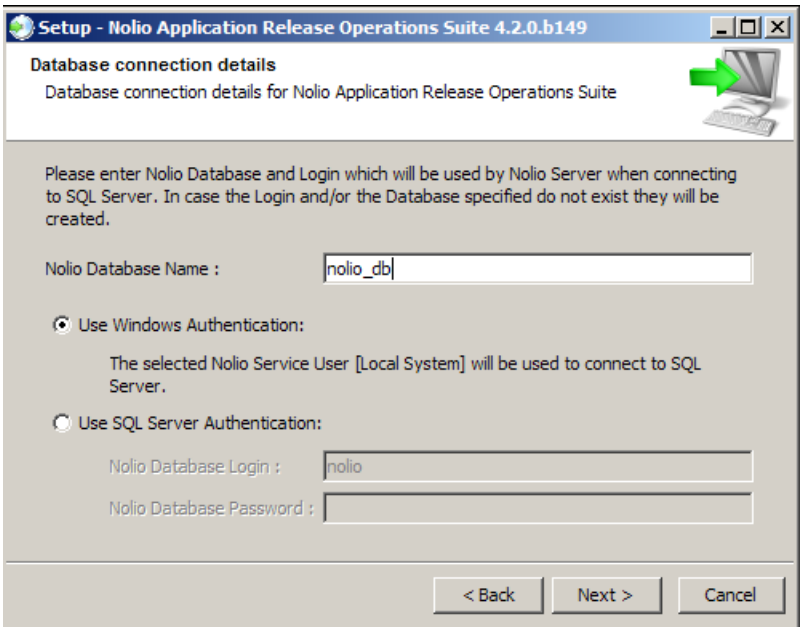
- If the SQL Server instance to be used is a "default" instance, type the Server name or IP address.
- If the SQL Server instance to be used is a "named" instance, type the correct names, in the format `<Server name>\<Instance name>`.

b. Select the authentication mode to be used for connections to the SQL Server instance:

- **Windows Authentication**: In this mode, the connection is completed through the Nolio Server service owner.
- **SQL Server Authentication**: This mode requires two additional configuration entries:
  - In the **DBA Login** box, enter the login of a DBA user.
  - In the **DBA** password box, enter the password for the DBA Login.

c. Click **Next**.

27. The Database connection details window opens.



a. In the **Nolio Database Name** box, enter a name for the Nolio specific database to create.

b. Select the authentication mode to be used for connections to the SQL Server instance:

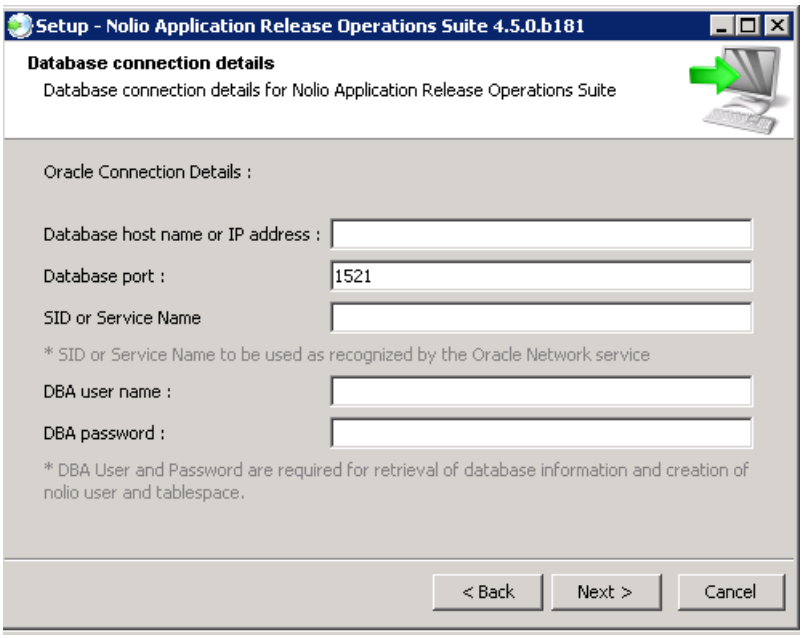
- **Windows Authentication**: In this mode, the connection is completed through the Nolio Server service owner.
- **SQL Server Authentication**: This mode required two additional configuration entries:
  - In the **Nolio Database Login** box, enter the login of a DBA user.

- In the **Nolio Database Password** box, enter the password for the DBA Login.

c. Click **Next**.

Oracle:

28. If Oracle was selected, the **Oracle Connection Details** window opens.



a. In the **Database host name or IP address** box, enter database host name or IP address.

b. In the **Database port** box, enter the Oracle database listening port.

c. In the **SID or Service Name** box, enter the SID or Service name.

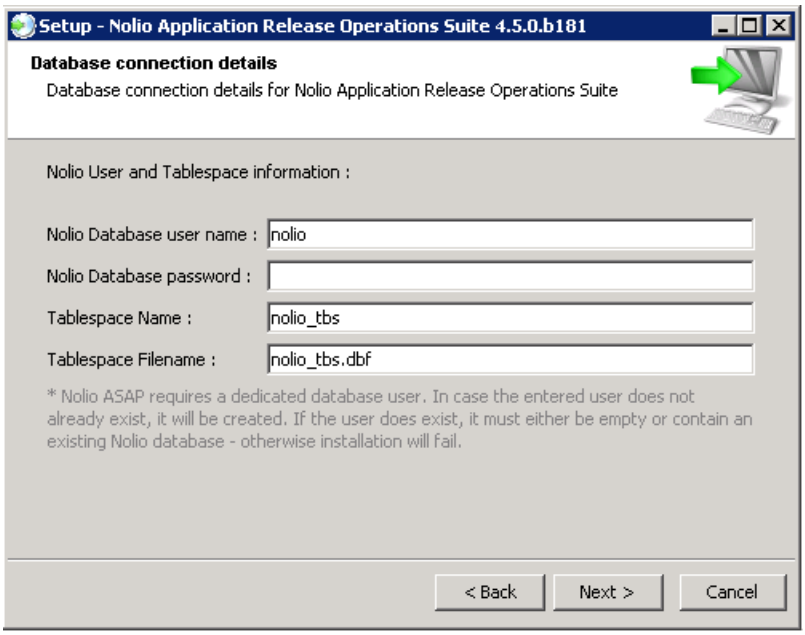
Note: The SID or service name is the one recognized by the Oracle Network Service.

Provide a database username and password for a DBA user. The credentials are used to connect to the database and to create the Nolio DB user and tablespace.

d. In the **DBA user name** box, enter the DBA user name.

e. In the **DBA password** box, enter the password for the DBA user name.

29. Click **Next**. The Database Connection Details window opens displaying the Nolio specific schema details.



a. In the **Nolio Database user name** box, enter the name of a user who will own the Nolio schema. The installation creates the new user.

b. In the **Nolio Database password** box, enter the password for the user.

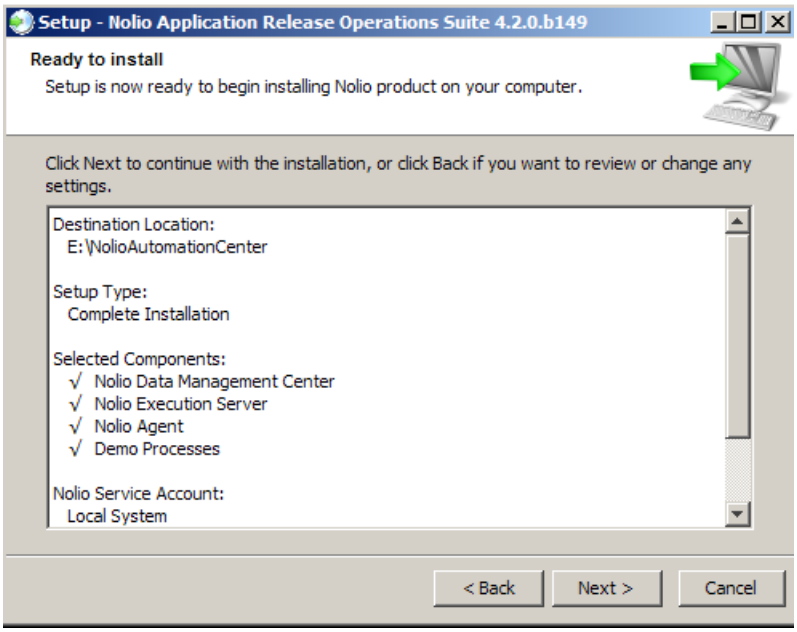
c. In the **Tablespace Name**, enter the tablespace name.

d. In the **Tablespace Filename**, enter the filename of the database.

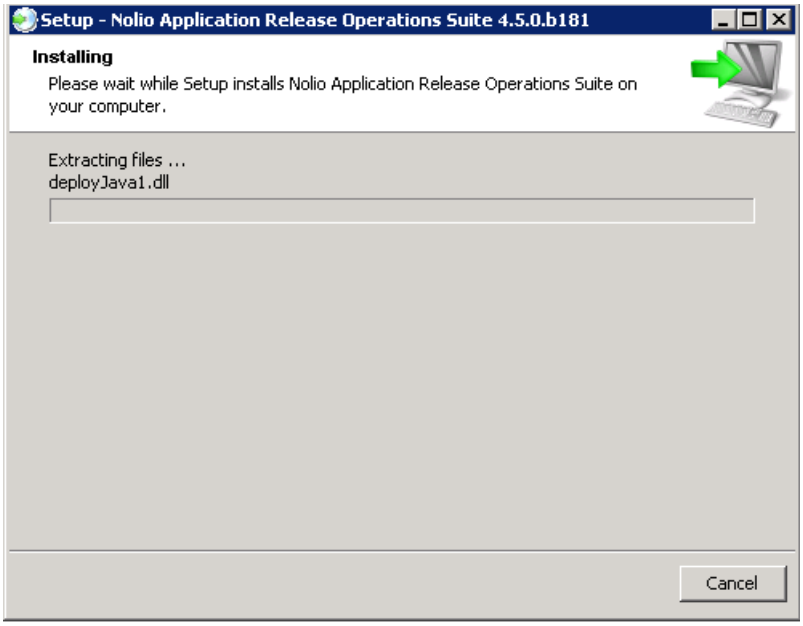
The installer checks that the given schema does not exist. If it exists, the installer checks whether it is empty and if so, the Nolio schema is populated.

If the given tablespace and user are already assigned with non-Nolio objects, installation is cancelled.

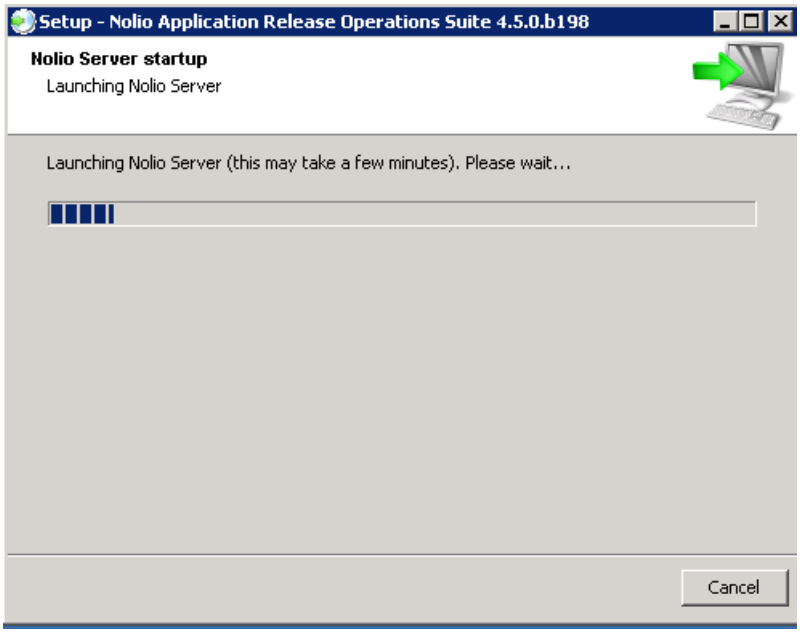
30. Click **Next**. The **Ready to Install** window opens. The installer displays a list of components that are about to be installed.



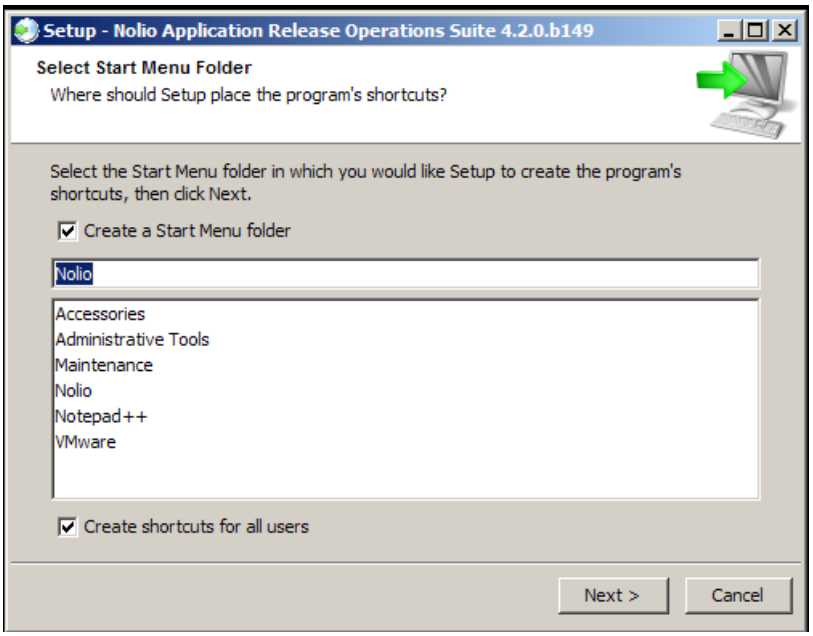
31. Click **Next**. The **Installing** window opens, displaying the progress of the installation. The progress bar is automatically updated.



The Nolio Server startup window opens.



32. When installation progress is complete, click **Next**. The **Select Start Menu Folder** window opens.



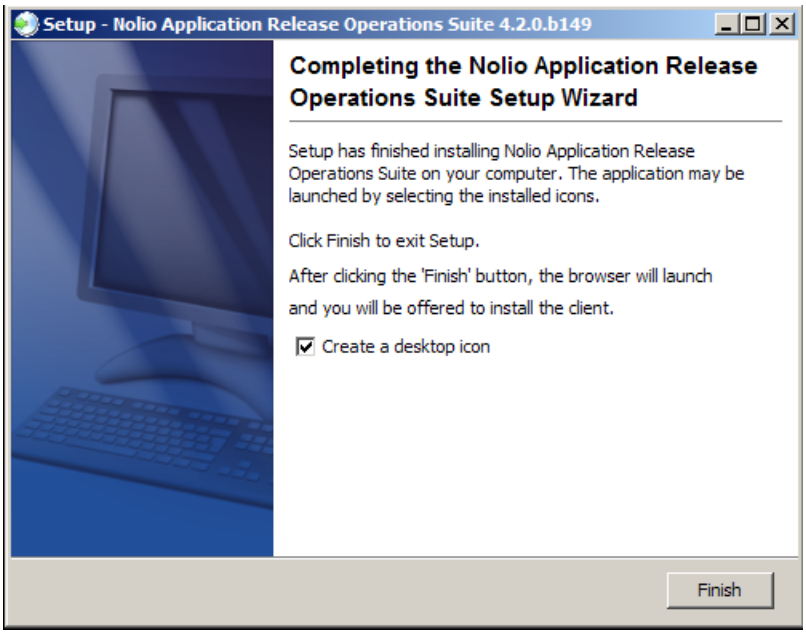
33. Select how you would like shortcuts to be installed.

    a. Specify the Program Group in which the shortcut(s) for the currently installed module is to be created. The default is Nolio.

    b. If you do not want to create a shortcut in the Windows **Start Menu**, deselect the relevant check box.

    c. If you want to create shortcuts for all users, select the relevant check box.

34. Click **Next**. The **Completing the Nolio ASAP Release Automation Setup Wizard** window opens, indicating that installation is complete.



35. Click **Finish**.

Note: To configure the Nolio Agent to startup automatically under Solaris or Linux systems, see *Configuring Linux/Solaris for Automatic Startup of Agent* (on page 58).

Nolio Server Service Management on Non-Windows Platforms

The following commands are available on non-Windows platforms for the Nolio Server service startup and shutdown:

- Service startup: `./bin/startup.sh`
- Service shutdown: `./bin/shutdown.sh`

Note: All commands refer to paths relative to the `<Nolio Datamanagement HOME DIRECTORY>`.

Silent Server Installation

The Nolio Data Management Server and Execution Server can be installed silently through the use of a single installation executable, **Nolio Server Setup**, using the command line.

Required inputs are provided using one of the following methods:

- In the command line

- In a server input varfile

  The template for the server input varfile is available in *Installing Server using varfile* (on page 159).

The Server Setup executable supports two types of installations: Complete and Custom.

When installing an Agent *only*, a dedicated executable, `nolio_agent_<OS>`, is used.

If custom installation is required, see *Selecting Components for Custom Server Installation* (on page 38) for further explanation and instructions.

Installing with varfile

To install using varfile:

1. Copy the content of the varfile template from *Installing Server using varfile* (on page 159) in the Appendix and save it in a file called `varfile response.varfile`.
2. Update the required inputs in varfile response.varfile.
3. Transfer the installation file to the target machine.
4. Transfer the varfile response.varfile to the target machine.
5. For non-Windows machines, grant "a+x" permission to the installation file:

   ```
   chmod a+x nolio_server_<OS>_4_5_1_b<#>.sh
   ```

6. Execute the installation file:

   ```
   ./nolio_server_<OS>_4_5_1_b<#>.sh –q –varfile response.varfile
   ```

   Note: Additional flags can be added to the command line for logging more information.

   ```
   ./nolio_server_<OS>_4_5_1_b<#>.sh –q –varfile response.varfile
   –Dinstall4j.alternativeLogfile=[path] -Dinstall4j.keepLog=true
   ```

A complete listing of the server `response.varfile` template file is provided in *Server varfile Template* (on page 159).

Note: The installation requires at least 3.5 GB of free disk space in the installation partition and in the TEMP location as defined in the environment variable.

Chapter 3

Custom Nolio Server Installation

In This Chapter

The following topics describe how to complete a custom server installation.

Who Uses Custom Installation

Custom installation is intended for users who want to add an additional Execution Server, or Servers, after the initial complete installation. See *Installing Additional Nolio Execution Server* (on page 40).

The following restrictions to custom component selection apply:

- If only **Nolio Agent** is selected, use the appropriate Nolio Agent Installation package.
- If **Demo Processes** is selected, installation of Data Management Server and a database are required.
- If **Skip Database Configuration** is selected, Nolio Agent cannot be installed. Product functionality is blocked if no database is installed. There are specific use cases in which this configuration is required. For further information, contact Nolio *Technical Support* (on page 11).

When running a custom installation that includes Nolio Data Management and Nolio Execution Server, no manual configuration is required unless additional Execution Servers are being added.

Selecting Components for Custom Server Installation

When running a custom installation, you are able to select which Nolio components to install. Custom Installation supports the following installation combinations:

- Data Management Server
- Data Management Server and Execution Server
- Data Management Server, Execution Server and Nolio Agent
- Data Management Server, Execution Server, Nolio Agent and Demo Processes
- Data Management Server and Execution Server with Skip Database Configuration option checked.

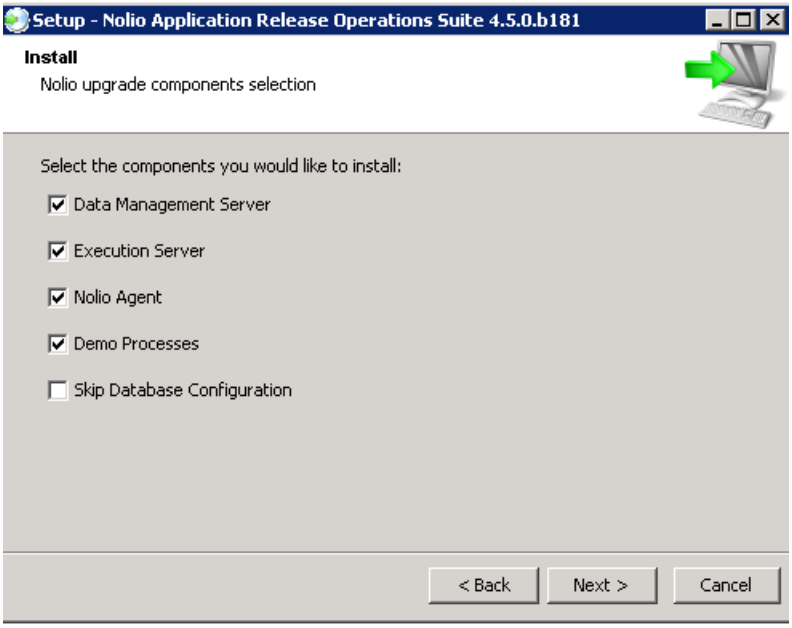
Note: Selecting Skip Database Configuration causes Nolio to **not** use a database and prevents much of the product functionality. However, Skip Database Configuration should be selected in specific use cases. For further information, contact *Nolio Technical Support* (on page 11).

- Execution Server
- Execution Server and Nolio Agent

Notes:

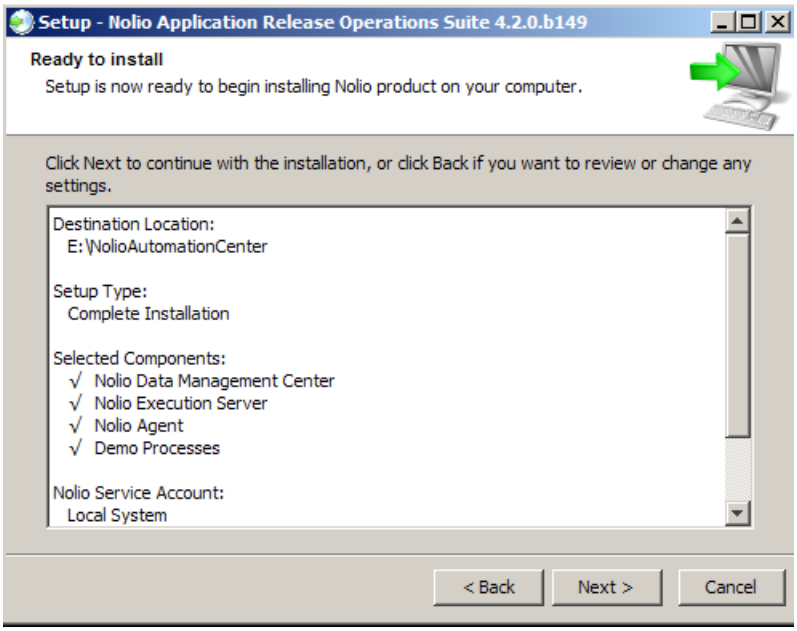
- When installing a Nolio Data Management Server, the Nolio Repository is also installed. For stand-alone installation and configuration of the repository, see *Installing Stand-alone Nolio Repository* (on page 59).
- When installing a Nolio Agent *only*, a dedicated executable, `nolio_agent_<OS>`, is used.

1. When Custom installation is selected, the Nolio ASAP Release Automation component selection window opens.



2. Select the required Nolio components based on the exceptions and conditions described at the beginning of this section.
3. Click **Next**.

The Ready to install window opens listing the selected components.



4. To review or change any custom component selections, click **Back**.
5. To continue with the installation of the selected components, click **Next**.
6. Continue from Advanced Communication Configuration, in the server installation described in Installing Nolio Server on GUI Platforms (on page 22).

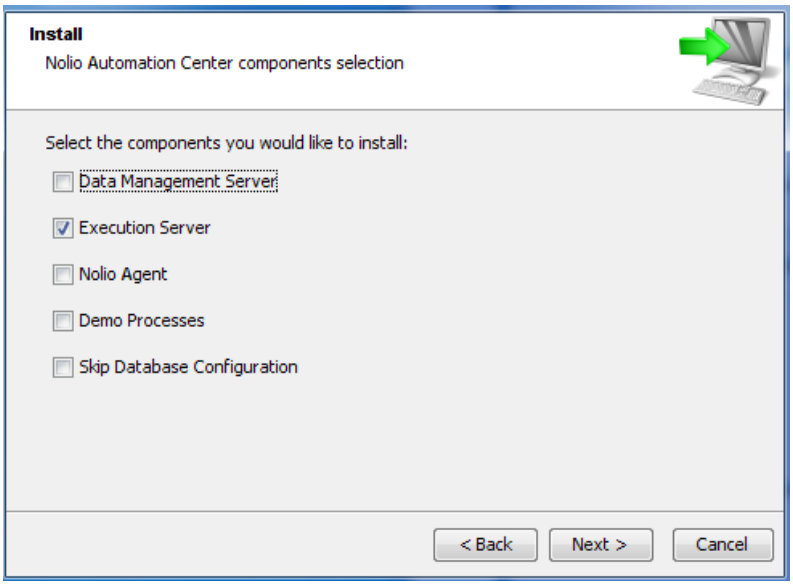
Installing Additional Nolio Execution Servers

A **Complete installation** installs all Nolio components (Data Management, Execution Server and Nolio Agent) on the server. Additional Execution Servers can now be added to existing Nolio systems.

To install Execution Server only:

1. Begin a Nolio Server installation, as described in Installing Nolio Server on GUI Platforms (on page 22), selecting **Custom installation** in the Installation Type Selection window. The component selection window opens.

2. Only **Execution Serve**r should be selected, as well as Nolio Agent if required. All other component check boxes should be cleared.



3. Click **Next**.

4. Continue from Advanced Communication Configuration described in Installing Nolio Server on GUI Platforms (on page 22).

5. After installation of the Execution Server has completed, connect the new Execution Server to the Nolio System.

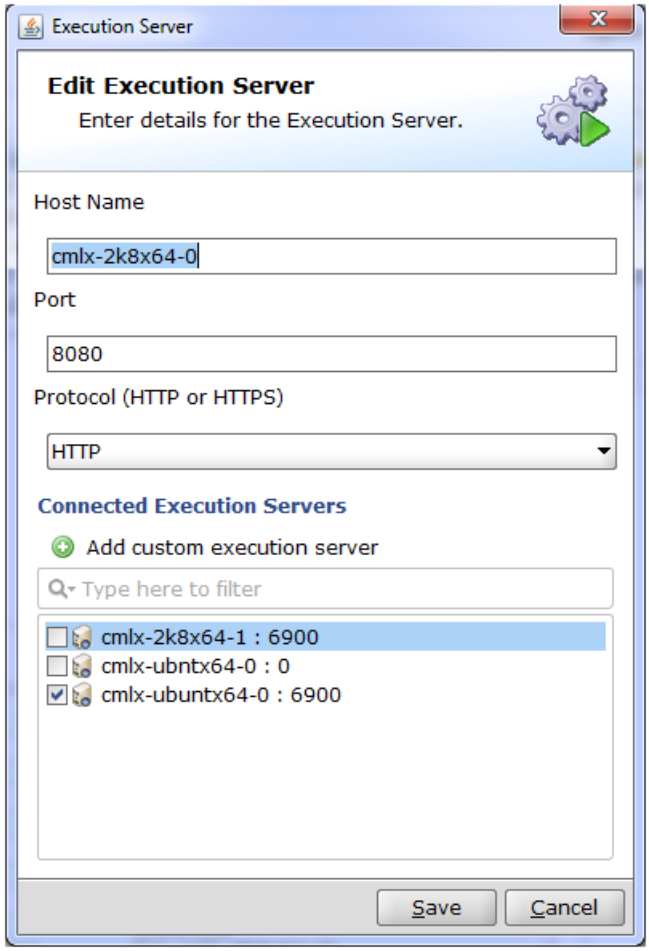
To connect an Execution Server to Nolio system:

1. In the **Administration** tab of the Navigation Panel, click **Agents Management**.

   The **Agents Management** page opens.

2. Click  and select **Execution Server**.

The Execution Server details dialog box opens.



3. In the **Host Name** box, enter the host name.
4. In the **Port** box, enter the port of the Web server used by the Execution Server. The default port is 8080.
5. In the **Connected Execution Servers** list, select the Execution Servers to connect to.
6. Click **Save**.

Once the Execution Server has been added, you may connect sibling Execution Servers, if required. See *Configuring an Execution Server* (on page 106).

Chapter 4

Installing Nolio Agent

In This Chapter

The Nolio Agent may be installed on Windows, Linux, Solaris (SPARC and x86), and AIX machines.

Nolio Agents can be installed through an executable wizard (local installation) or through the Nolio application user interface (remote installation).

Required User Credentials for Nolio Agent Installation

The following user credentials are required to install the Nolio agent:

- Windows
  - The user who is logged in and running the installation must have administrative privileges to enable creation of the required Nolio Service.
  - The owner of the Nolio Agent Service is configured by default to run with the Local System account.
  - For some advanced functions, such as access to resources on the network, the service must log on as a user with administrative privileges.
  - The owner of the Nolio Agent Service should have:
    - Write permissions for the file system
    - Permission to start a service
- Linux and Solaris

- Nolio can be installed by any UNIX user that has permissions to create and update files under the installation directory.
- The installation files should be extracted, using the installer, to a dedicated folder that includes only Nolio files.

  For example, if the target location for Nolio is to be under `/opt`, the Nolio files are extracted by the installer to `/opt/NolioAgent`. The UNIX user assigned should have write permissions to the `/opt` folder.
- To enable automatic startup in case of machine restart, the installer tries to add an entry to the runlevel scripts.

  If the installed user is not ROOT and does not have permissions to update the runlevel scripts, a message appears during the installation.

  See *Configuring Linux/Solaris for Automatic Startup of Agent* (on page 58) for a specific script that can be executed by the ROOT user after installation.

Important Notes about Java and Agent Installation

Important Note for Installing Nolio Agent:

The Nolio installation package comes with its own set of Java components, Java 7, which is used for all Nolio operations.

Important Note for Installing Nolio Agent on AIX Machines:

The Nolio Agent on AIX platform does *not* come with its own Java 7 package and the user must make sure Java 7 is installed on the AIX machine *prior* to triggering the Nolio Agent executable.

For the installation process and also for Nolio Agent functionality, Java 7 *must* be available on the machine.

The user needs to set the environment variable updating INSTALL4J with the location of the Java 7 files as follows:

```
export INSTALL4J_JAVA_HOME=<LOCATION OF THE JRE 7>
```

For example, `INSTALL4J_JAVA_HOME=/usr/java7_64/jre`

Note: The above command enables installation of the Nolio Agent component. As part of the installation process, the Agent configuration file is updated to the location of the Java binaries.

Local Agent Installation

Install the Nolio Agent by running the Nolio Agent Setup Wizard. For a silent installation, see *Local Agent Installation in Silent Mode* (on page 51).

Notes:

- For the installation package to be invoked on a Linux system, support for 32-bit applications must be enabled.
- The installation process described in *Installing Nolio Agent on GUI Platforms* (on page 45). The non-graphical installation process in *Agent Installation using CLI* (on page 51) provides the same configuration options through a CLI.
- The installation should be completed using a clean folder that does not hold any files or folders other than those of Nolio ASAP.

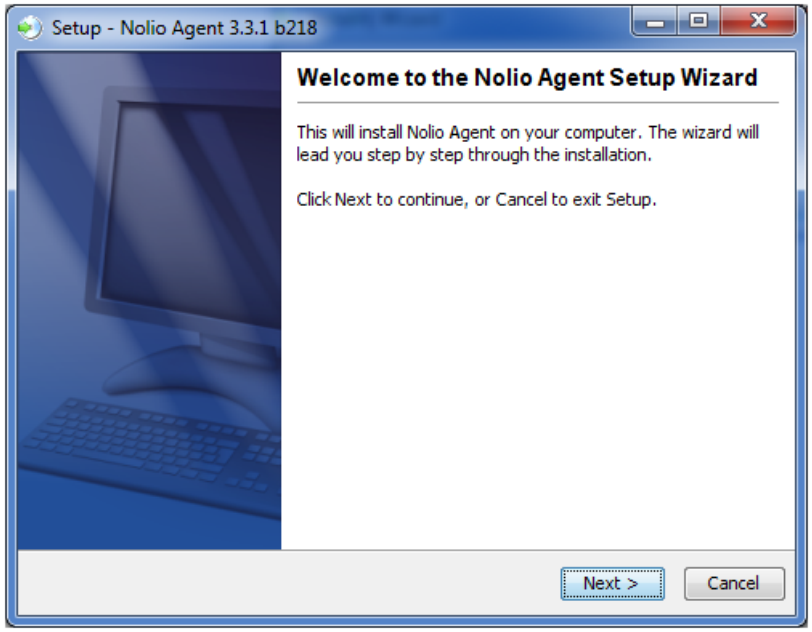
Installing Nolio Agent on GUI Platforms

Important Note for Installation of Agents on AIX Platforms ONLY:

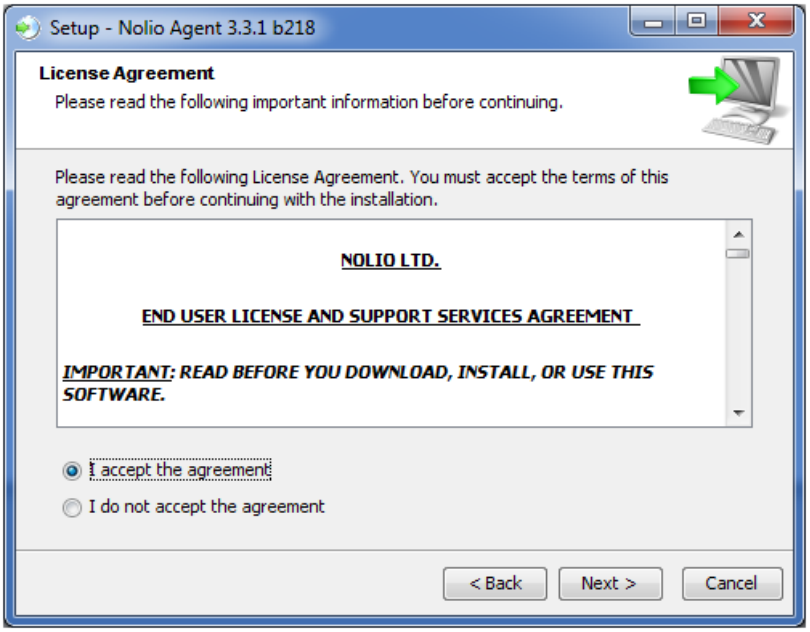
When installing Nolio Agents on IBM AIX platforms, IBM JAVA JRE 7 64-bit must be installed on the target server prior to Nolio Agent setup.

To install Nolio Agent on platforms with GUI capabilities:

1. For Linux or Solaris only: Grant "a+x" permissions to: `nolio_agent_<OS>_4_5_1_b<#>.sh`
2. Invoke the executable file. The **Welcome** window opens.

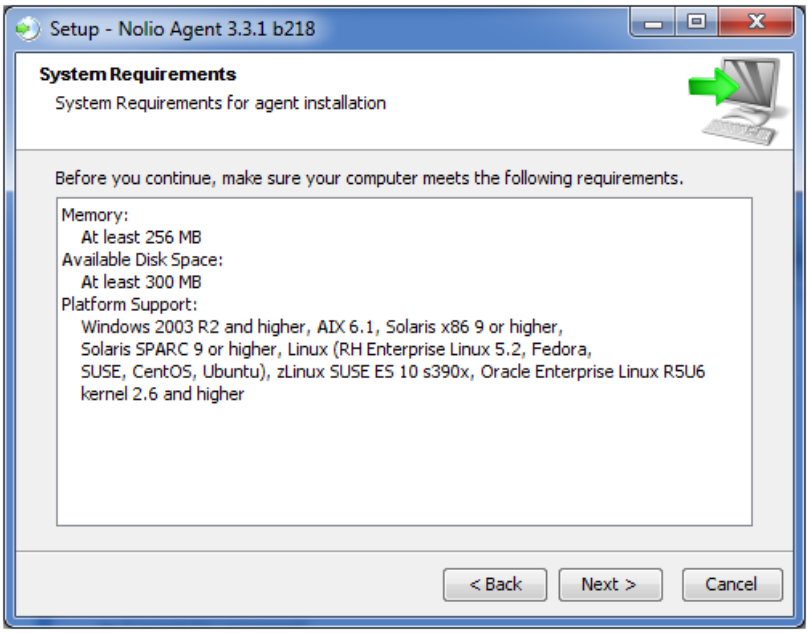


3. Click **Next**. The **License Agreement** window opens.

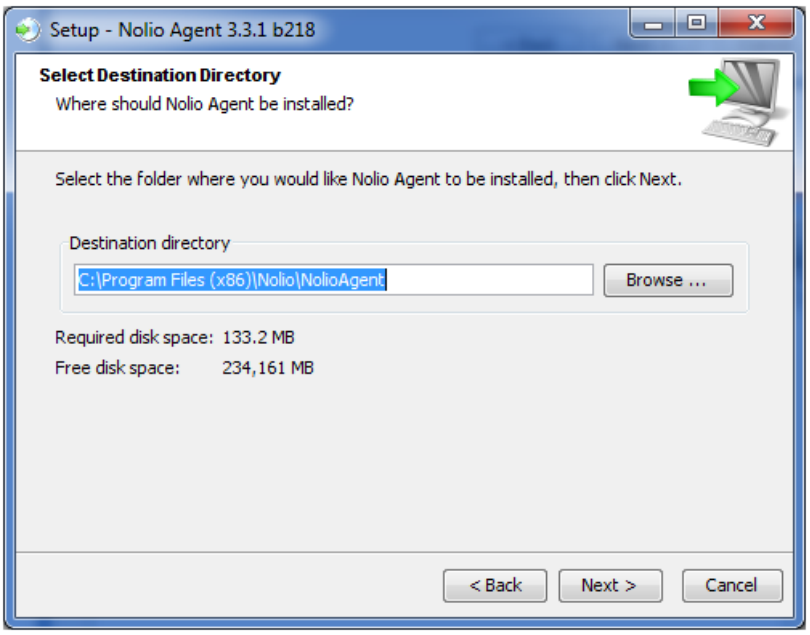


4. Read the terms of the **License Agreement**, and indicate your acceptance of them by selecting the relevant radio button.

5. Click **Next**. The **System Requirements** window opens.

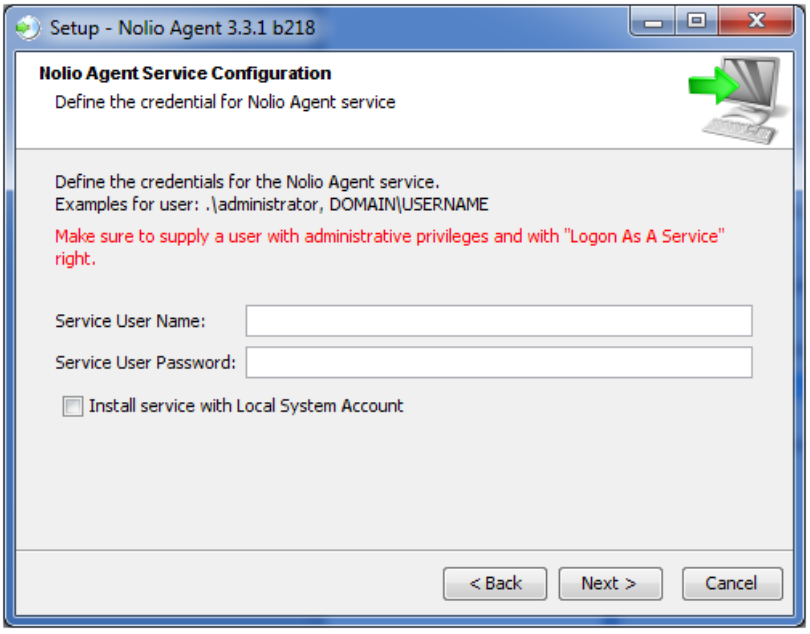


6. Click **Next** after confirming that your system meets these requirements. The **Select Destination Directory** window opens.



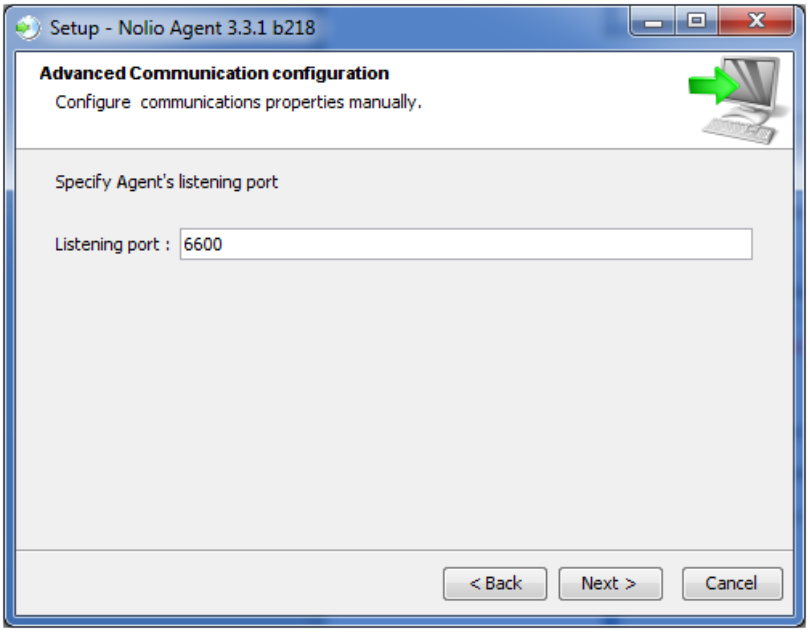
7. Select the destination location for the agent root directory. If the directory you selected does not exist, it is created during the installation.

8. Click **Next**. The **Nolio Agent Service Configuration** window opens.



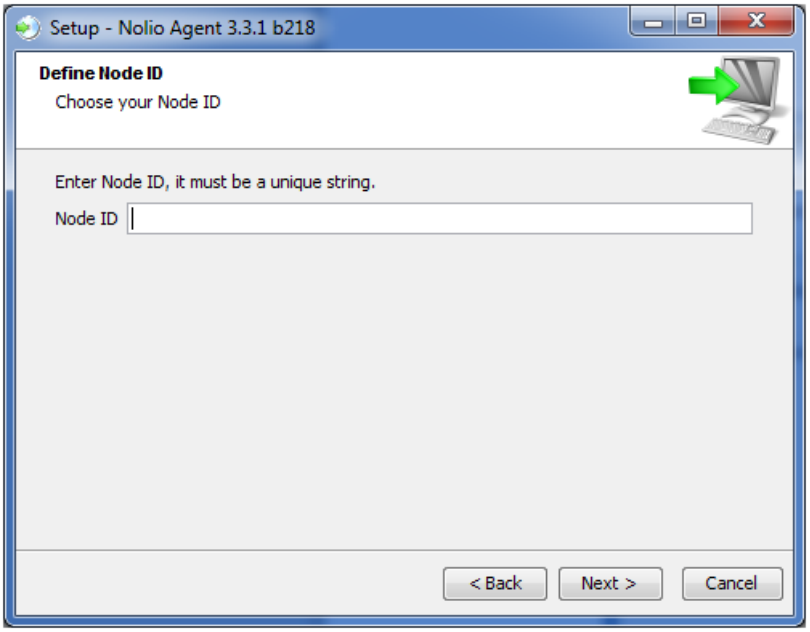
9. Enter the credentials of a user account that has administrative privileges and 'Log On As A Service' right. This user is designated to run the Agent service.

10. Click **Next**. The **Advanced Communication Configuration** window opens.



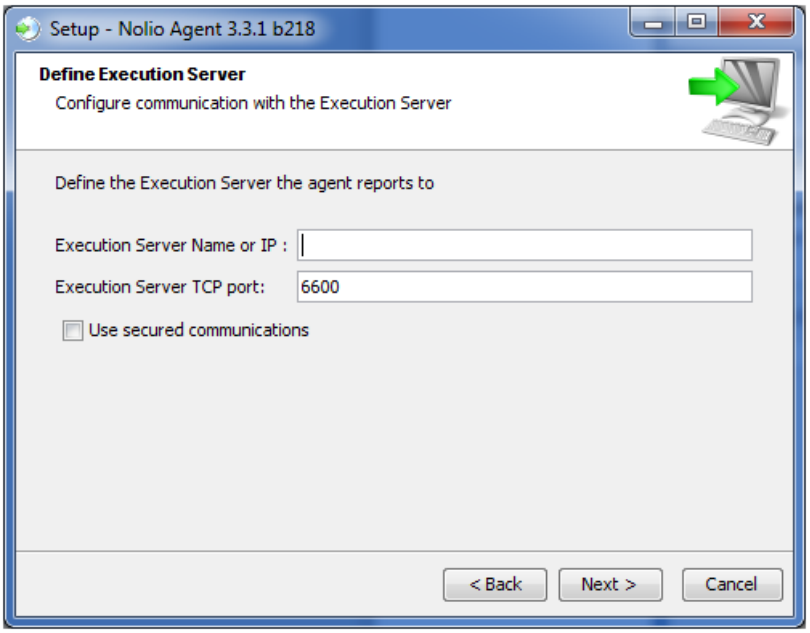
11. Specify the port through which the Nolio Agent communicates with its Execution Server. The default port for Agents is 6600. **However,** if the Nolio Execution Server is installed on the same server and you have not changed its default port, you need to choose a different port as port 6600 will be in use.

12. Click **Next**. The **Define Node ID** window opens.



13. Specify a unique name for this agent. By default, the installer suggests the server's name or IP address. You may provide a different name as long it is unique across all Agents and Execution Servers.

14. Click **Next**. The **Define Execution Server** window opens.



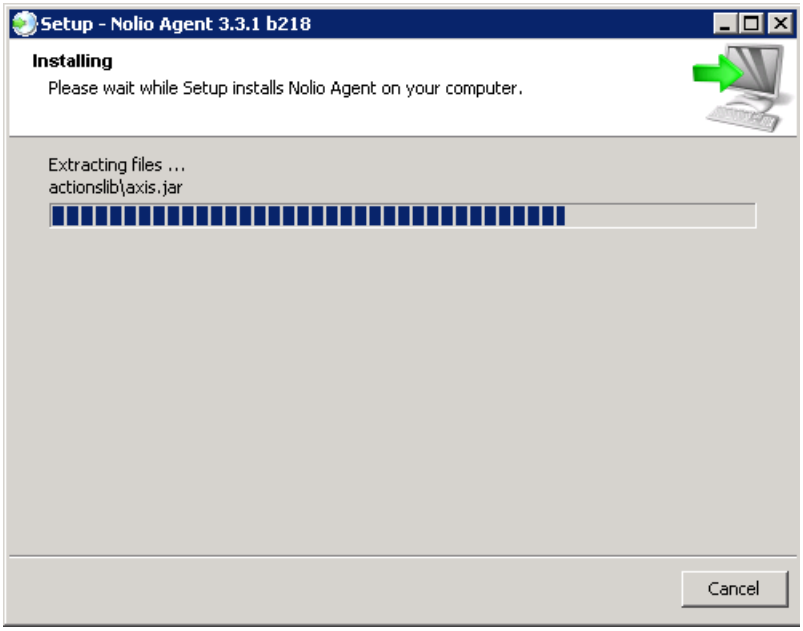
15. Define the Execution Server to which this agent reports:

    a. In the **Execution Server Name or IP** box, specify the Execution Server by providing its DNS name or IP address.

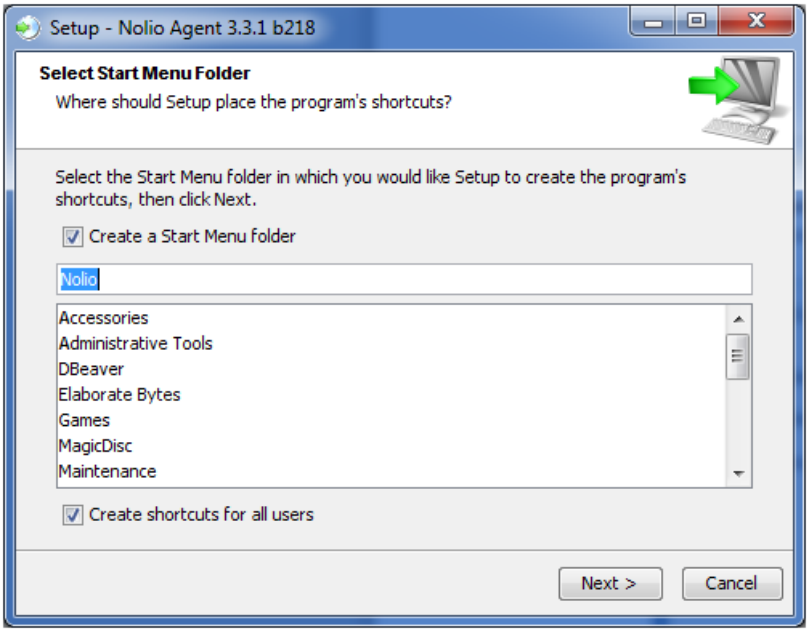
    b. In the **Execution Server Port** box, enter the port on which the Execution Server is listening.

    c. If your system is configured to use secured communication, select the **Use Secured Communication** check box.

16. Click **Next**. The **Installing** window opens, displaying the progress of the installation.



17. When installation progress is complete, click **Next**. The **Select Start Menu Folder** window opens.



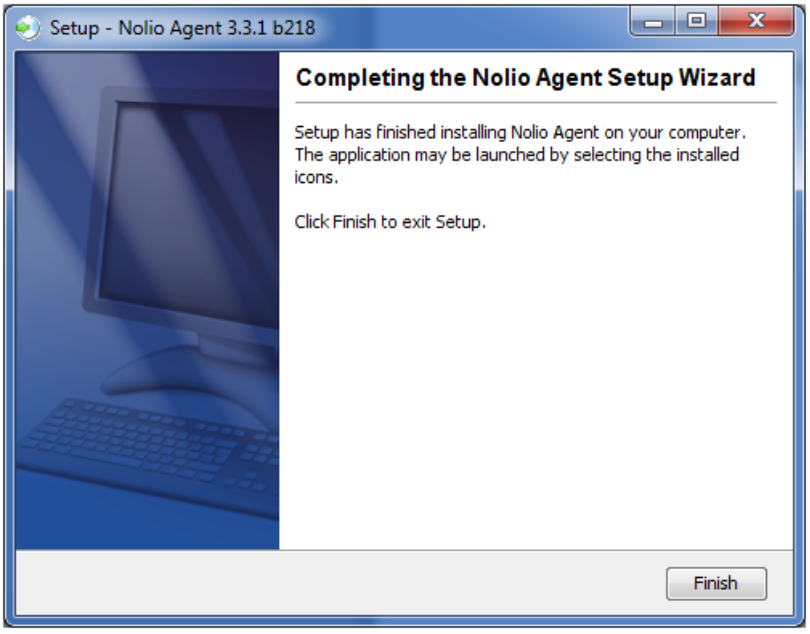
18. Select how you would like shortcuts installed.

    a. Select the Start Menu folder in which to create the shortcut(s) for the currently installed module. The default is Nolio.

    b. If you do not want to create a shortcut in the Windows Start Menu, deselect the relevant check box.

    c. If you want to create shortcuts for all users, select the relevant check box.

19. Click **Next**. The **Completing the Nolio Agent Setup Wizard** window opens.



20. Click **Finish** to exit.

Note: On Windows platforms, in the case where the installer fails to install or start the Nolio Agent service, the installation rolls back and the installation files are removed.

Agent Installation using CLI

To install an Agent using the CLI:

1. Transfer the agent installation file to the target machine.
2. Grant "a+x" permission to the installation file:

   ```
   chmod a+x nolio_agent_<OS>_4_5_1_b<#>.sh
   ```

3. Execute the installation file:

   ```
   ./nolio_agent_<OS>_4_5_1_b<#>.sh
   ```

4. Follow the instructions on screen.

As part of the installation process, the Agent service is set to start automatically after the server boots.

Local Agent Installation in Silent Mode

Install the Nolio Agent by running the Nolio Agent executable. To run the installation in silent mode, the agent installation executable must be located on the target machine.

To install an agent in silent mode:

1. Copy the content of the varfile template from Installing Agent using varfile (on page 164) in the Appendix and save it in a file named `deployer.silent.varfile`.
2. Update `deployer.silent.varfile` to include appropriate values.
3. Transfer the Nolio Agent installation file to the target machine.
4. For non-Windows machines, grant “a+x” permission to the installation file:

   ```
   chmod a+x nolio_agent_<OS>_4_5_1_b<#>.sh
   ```

5. It is possible to install an agent in silent mode using a varfile or providing all required parameters in a single command line.

   a. To invoke silent installation using a varfile:

      ```
      nolio_agent_<OS>_4_5_0_b<#>.exe -q -varfile deployer.silent.varfile
      ```

Note: `deployer.silent.varfile` can be found in the agents root folder of any agent installed through the interactive installation process.

b. To invoke the installation supplying all parameters on the command line:

```
./nolio_agent_<OS>_4_5_1_b<#>.sh –q –V<PARAMETERS>
```

Following is an example of the command line syntax for installing an agent in silent mode:

```
./nolio_agent_<OS>_4_5_1_b<#>.sh –q
-Vsys.installationDir/opt/Nolio/NolioAgent
-Vnolio.nimi.node.id=myserver -Vnolio.nimi.port=6600
-Vinstall.service.lsa$Boolean=true -Vnolio.nimi.secured$Boolean=true
-Vnolio.execution.name=192.168.168.4 -Vnolio.execution.port=6900
-Vnolio.hiddenport$Boolean=false
-Vsys.programGroupDisabled$Boolean=false
-Vsys.component.336$Boolean=true -Vsys.programGroupName=Nolio
-Vsys.programGroupAllUsers$Boolean=true -Vsys.languageId=en
```

Remote Agent Installation

Use the remote installation feature to install a new Nolio Agent remotely.

Remote installation enables the user to add agents on remote machines and connect them to existing Execution Servers. Remote agent installation is dependent on the install base of the Nolio Execution Server.

Users can map a newly installed agent to the required Application, Environment, and Server Types, as defined in Nolio, during remote agent installation, eliminating the need to map the agents to the appropriate configuration after all agents are installed.

The following configurations are supported for Nolio Execution Server running on:

- Windows
  - Remote installation of agents on Windows platforms
  - Remote installation of agents on Linux, Solaris
- Linux or Solaris
  - Remote installation of agents on Linux, Solaris

Note: Remote agent installation is *not* supported on AIX platforms. See *Important Notes about Java and Agent Installation* (on page 44).

Prerequisites

To enable remote agent installation, the Execution Server to which the new agents are to be connected should have the target OS Agent's executable in its scripts folder.

For example, if the new agent to be installed should run on a Solaris x86 platform, the agent's installation file (`nolio_agent_solaris-x86_4_5_1_b<#>.sh`) should be copied to the Execution Server script folder located at:

```
<Execution Server Home Directory>/scripts
```

The target machine must be configured properly to allow remote installation. In the case of Windows, the Nolio Server Service owner must have administrative privileges and 'Log On As A Service' rights on the machine.

Windows

- **Workstation** and **Server** services are running.
- **Admin$** share is available.
- **Windows Network** is running.
- **Printer and File Sharing** is activated.
- Incoming network users authenticate as themselves.
  - **Simple File Sharing** is turned off.
  - **Network Users Identify as Guests** is turned off.
- **Firewall** allows incoming traffic through ports 135 and 445.

Linux/Solaris

- **SSH** must be enabled.

Dynamic Agent Mapping

By default, the ability to map agents to Application, Environment and Server Type during remote installation is not enabled, and the input boxes for Agent Mapping Details do not appear in the Agent Installation window.

To enable dynamic agent mapping during remote agent installation:

1. In the Nolio ASAP Release Automation Client UI, select the **Administration** tab.
2. Select **System Settings**.
3. Click the  icon.

   The Add System Settings dialog opens.
4. In the **New key** box, enter **DYNAMIC_AGENT_MAPPING_ENABLED**.
5. In the **New value** box, enter **true**.

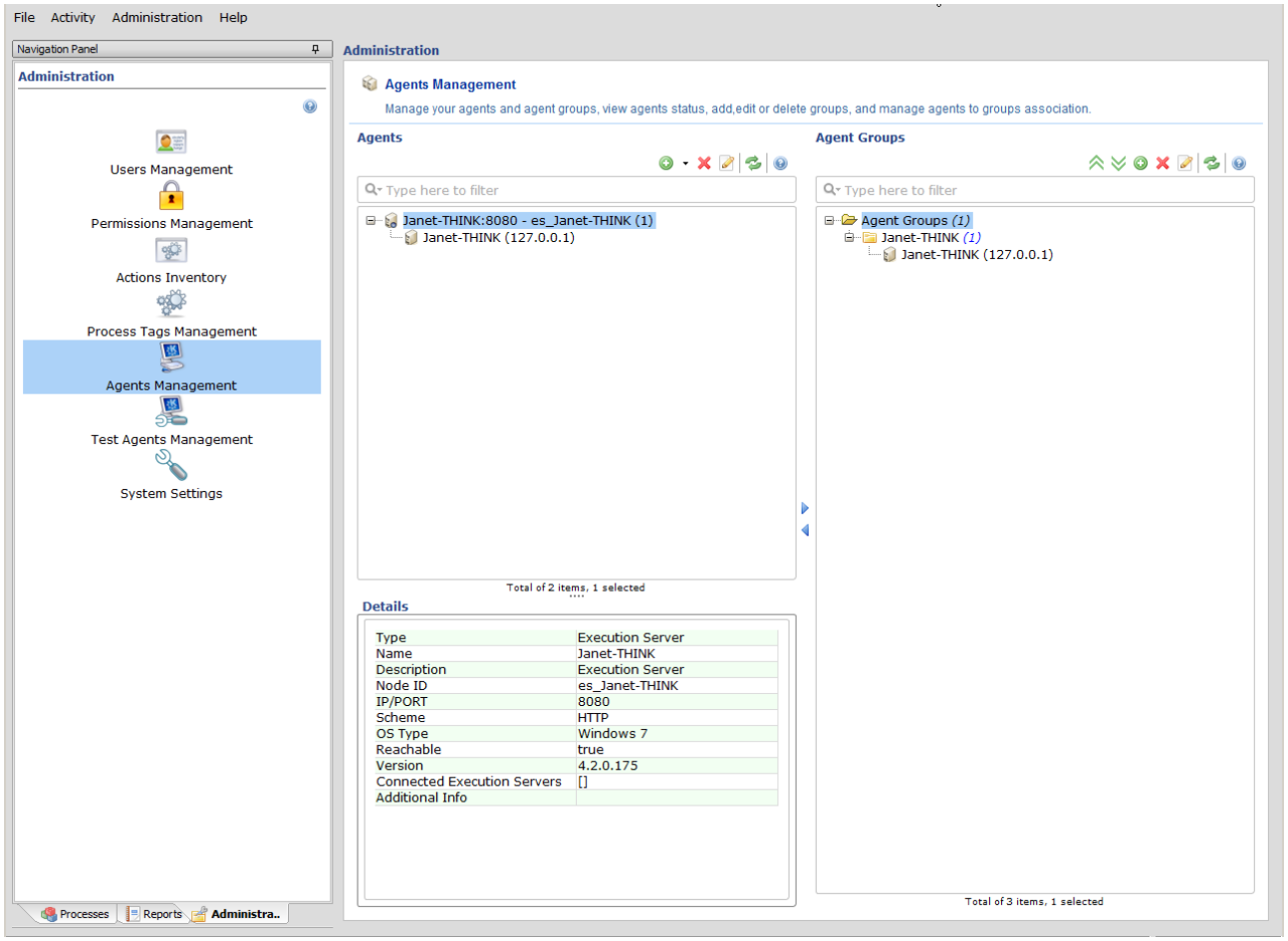
6. Click **Save**.

It is not necessary to restart the Nolio Server service or the client UI. The next time you open the remote agent installation wizard, the agent mapping detail fields will appear.

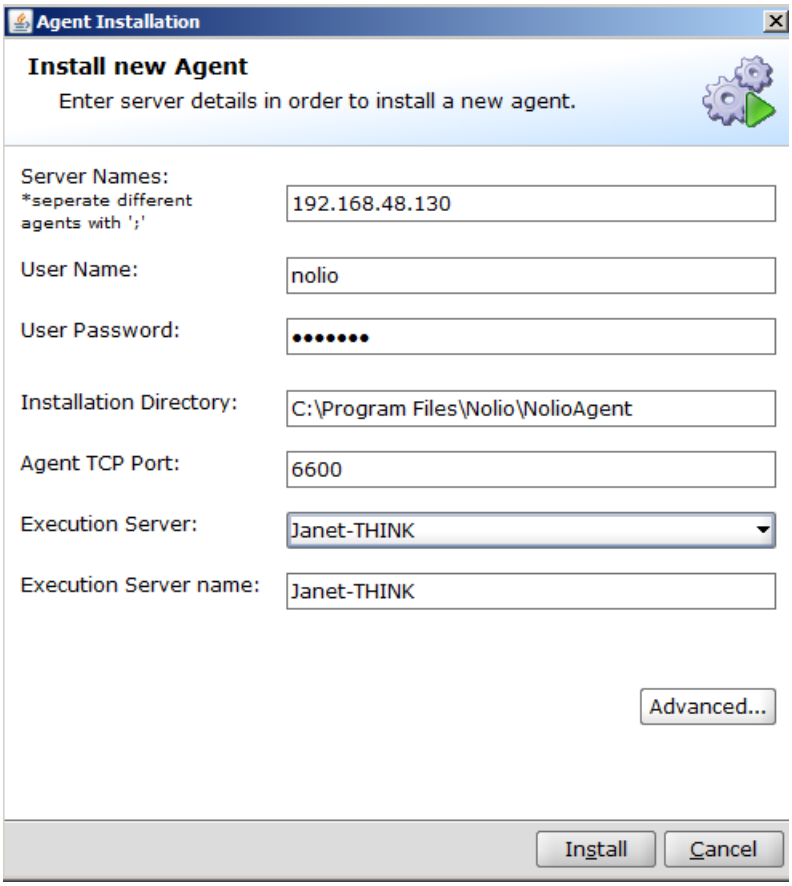
Running Remote Installation

To run a remote installation:

1. In the Nolio ASAP Release Automation **Client UI**, select **Administration > Agents Management**. The **Administration Agents Management** window opens.



2. Click  , and on the drop-down menu select **Install Nolio Agent** to install the agent on the relevant platform. The **Install New Agent** window opens.



3. In the **Server Names** box, enter the DNS names or IP addresses of the servers on which the new agent will be installed.

   For multiple servers, separate agents with a semicolon (;).

4. In the **User Name** box, enter the user name of an account that has administrative privileges on the remote machines.

   For Linux/Solaris platforms, the **User Name** supplied should have the same user credentials as described in Linux and Solaris section of Required User Credentials for Installation of Nolio Agent (on page 43).

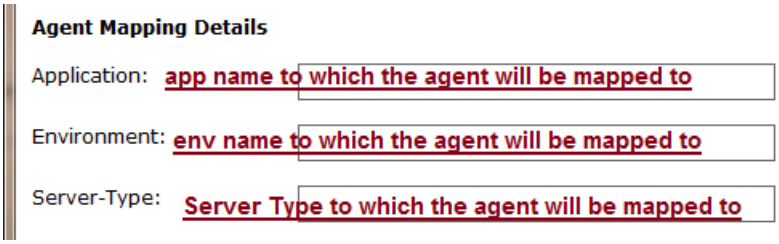
5. In the **User Password** box, enter the password for the user account.

6. In the **Installation Directory**, enter the folder in which to place the installation.

7. In the **Agent TCP Port** box, enter the number of the TCP port on which the agent is to listen.

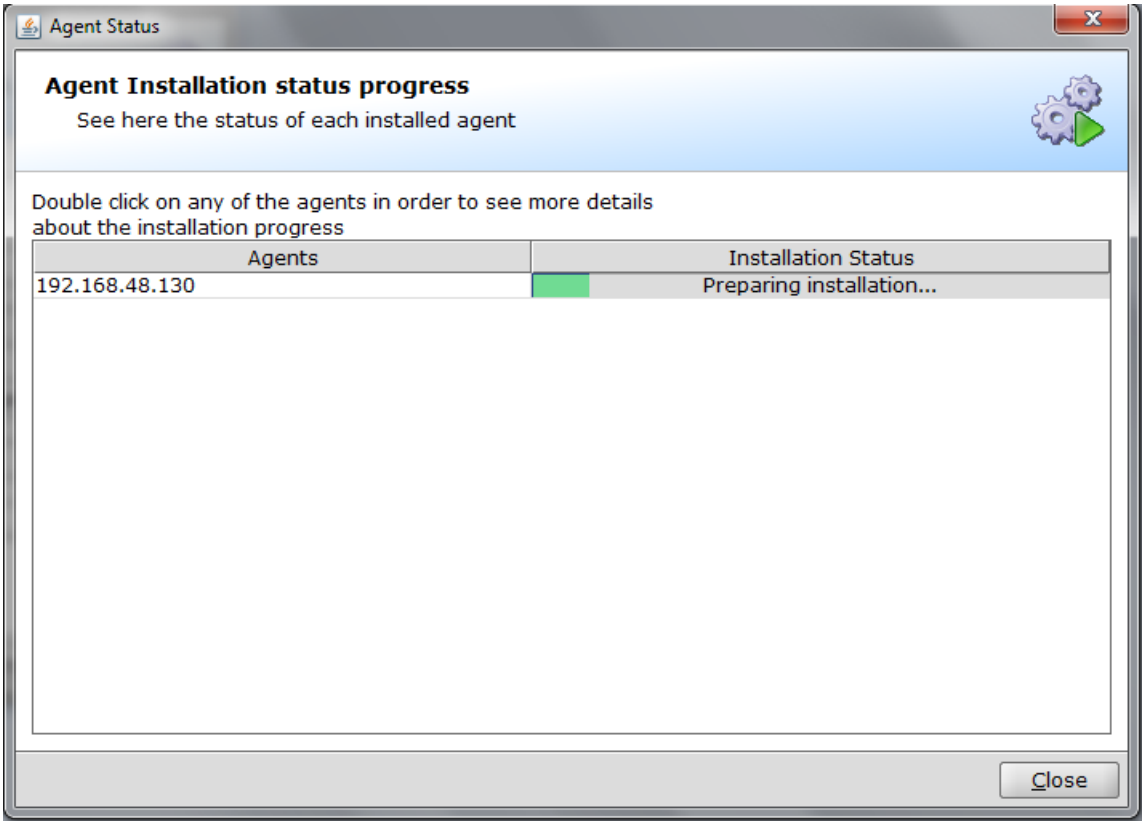
Note: If the port is not available, a new window opens with a prompt to provide new ports.

8. In the **Execution Server** list, select IP address or DNS name of the Execution Server with which these agents are to be associated.
9. In the **Execution Server name** box, enter the Execution Server name as known to the agents, which is the same as in the Execution Server drop-down list, or a different hostname or IP address for the machine with which agents can communicate.
10. For Windows platforms, click the **Advanced** button to define different credentials for remote servers. Enter the credentials of a user account to use for running the Agent service. The user must have administrative privileges and 'Log On As A Service' rights.
11. If the System Setting parameter **DYNAMIC_AGENT_MAPPING_ENABLED** is set to **TRUE**, the Install New Agent window also displays boxes for entering the Application, Environment, and Server Type to associate with the server agents.



   a. In the **Application** box, enter the name of the application to which the agent is to be mapped.
   b. In the **Environment** box, enter the name of the application environment to which the agent is to be mapped.
   c. In the **Server Type** box, enter the server type to which the agent is to be mapped.

12. Click **Install**. The **Agent Installation Status Progress** window opens.



13. When the installation completes, click **Close** to close this window.

As part of the installation process, the Agent services are set to start automatically after the server boots. If the installer is not able to do so, you are notified. Failure might occur due to permission issues that prevent the installation process from copying the required files to the needed location. For instructions on how to set automatic startup, see *Configuring Linux/Solaris for Automatic Startup of Agent* (on page 58).

Note: On Windows platforms, if the installer fails to install or start the Nolio Agent service, the installation rolls back and the installation files are removed.

Advanced Agent Configuration

This section describes advanced configuration options for the Nolio Agent.

Agent Service Management on non-Windows Platforms

Note: All commands refer to paths that are relative to the <<NOLIO> AGENT HOME DIRECTORY>.

- Service startup: `./deployer_deamon.sh start`
- Service shutdown: `./deployer_deamon.sh stop`
- Service restart: `./deployer_deamon.sh restart`
- Service status: `./deployer_deamon.sh status`

Configuring Linux/Solaris for Automatic Startup of Agent

Note: The following configuration procedure is only necessary if you installed Nolio Server or Nolio Agent with a non-root user.

To enable automatic Agent startup on Linux/Solaris:

1. Open `deployer_daemon.sh` file for editing.
2. Find the `#RUN_AS_USER=root` entry.
3. Uncomment the line and add the name of the user who owns the Nolio Agent installation.
4. Save the file.
5. Connect as ROOT user and run the following script from Nolio Agent root folder:

   ```
   ./deployer_daemon.sh install
   ```

After server reboot, the Nolio Agent service starts with the specified user.

Automatically Assigning Nolio Agents to Application Components for Cloud Support

It is possible to automatically assign Nolio Agents to predefined applications, environments, and server types when replicating images as part of cloud support.

Add an agent mapping file, according to the *Agent Mapping File Template* (on page 166), to the host image. The mapping file is used to automatically assign Nolio Agents to the predefined application, environment, and server type components in Nolio when the agent connects to its Execution Server.

Chapter 5

Installing and Configuring Stand-alone Nolio Repository

In This Chapter

If the Nolio Repository is to be installed on a dedicated machine or a machine not running Nolio Data Management, install the stand-alone Nolio Repository and configure Nolio to use the repository according to instructions in this chapter.

The same Nolio Repository configuration options are available when using either installation method:

- Command Line Interface (CLI)
- Graphical user interface (GUI)

Repository Ports

Nolio Repository uses the following ports:

- Communication with Nolio Center - 8080
- Secured - 8443
- Shutdown - 8005
- AJP - 8009

Installing Stand-alone Nolio Repository using CLI

Important Notes:

- The Nolio Repository can be installed on a 64-bit platform *only*.
- You should have at least 1 GB free disk space in the installation partition.
- You need to confirm you have sufficient free disk space for file storage requirements.

To install stand-alone repository using the CLI:

1. Transfer the installation file to the target machine.
2. Grant "a+x" permission to the installation file:

   ```
   chmod a+x nolio_repository_<OS>_4_5_1_b<#>.sh
   ```

3. Execute the installation file:

   ```
   ./nolio_repository_<OS>_4_5_1_b<#>.sh -c
   ```

4. Follow the instructions on screen.

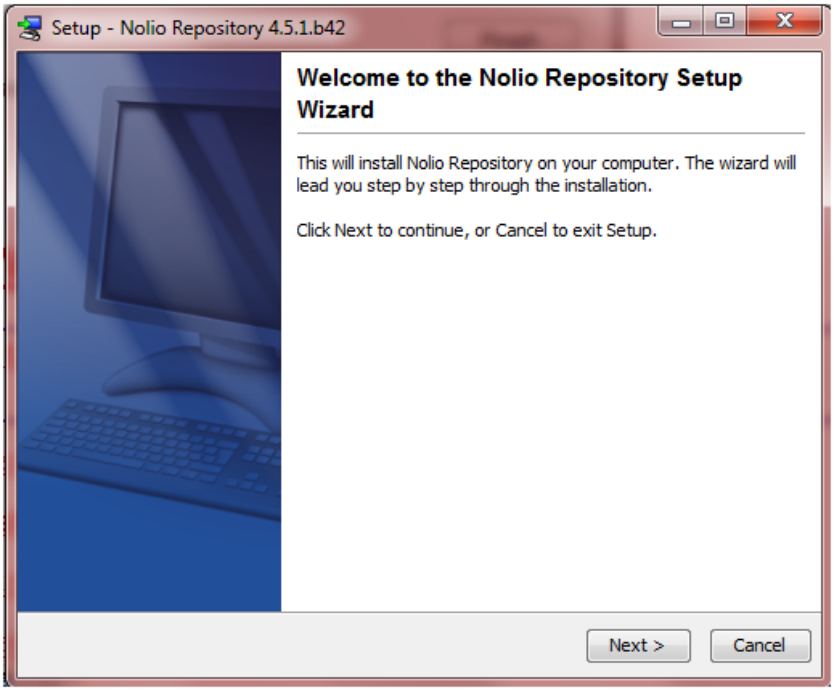
Installing Nolio Repository on GUI Platforms

To install the Nolio Repository on platforms with GUI capabilities:

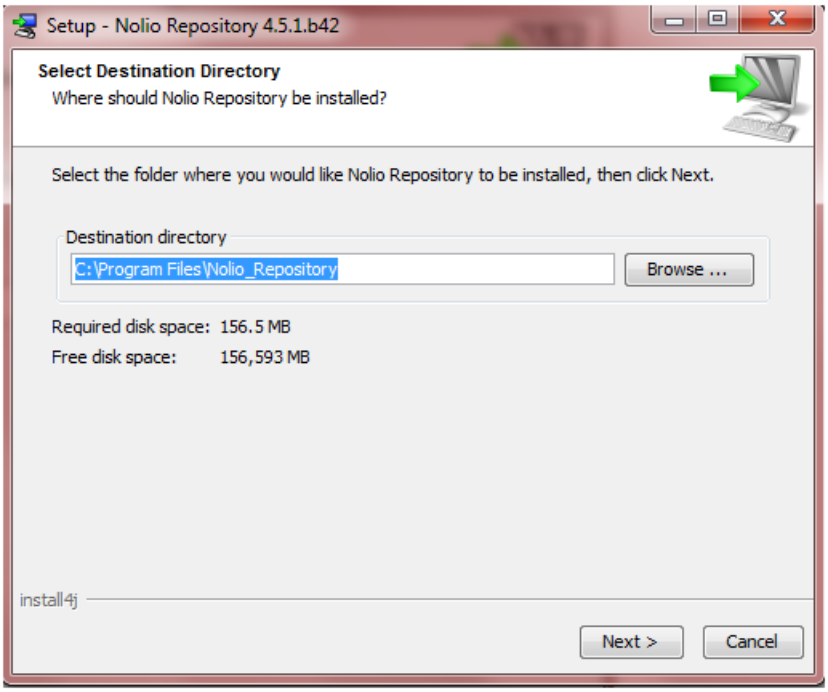
1. For Linux and Solaris only: Grant "a+x" permissions to:

   ```
   nolio_repository_Linux-x64/Solaris_4_5_1_b<#>.sh
   ```

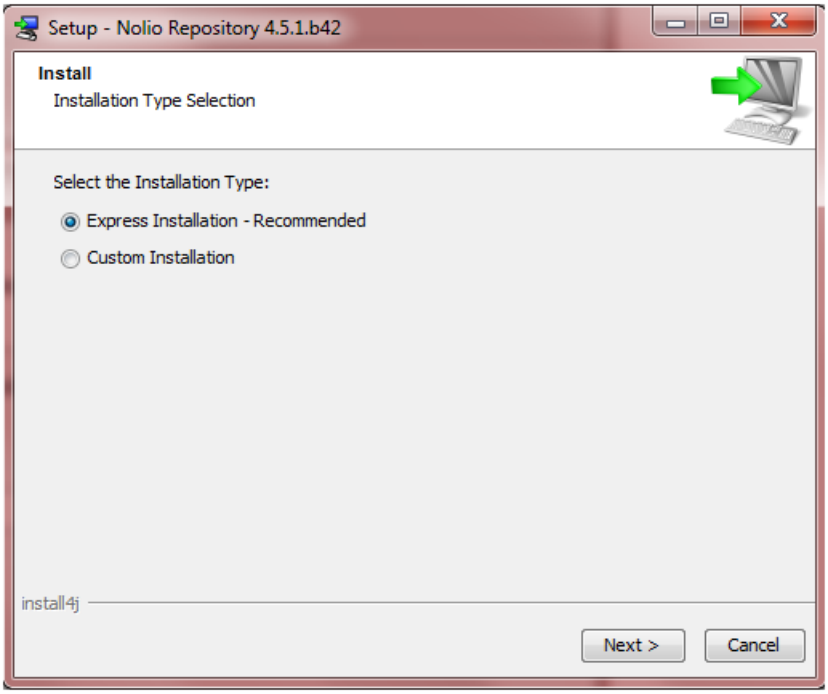
2. Invoke the wizard service executable file. The Welcome window opens.



3. Click **Next**. The Selection Destination Directory window opens.

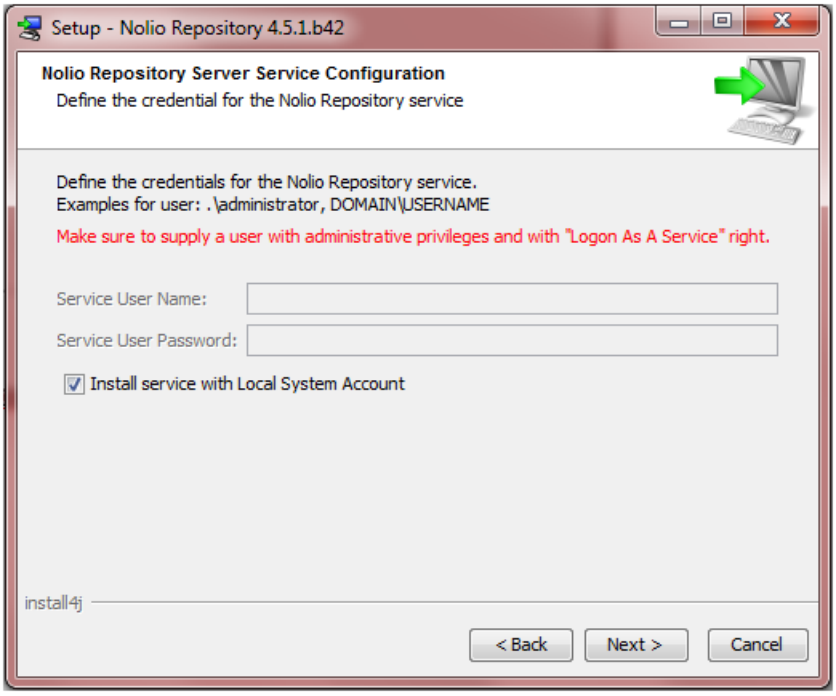


4. Click **Next**. The Install Type Selection window opens.



5. Choose **Express Installation** or **Custom Installation**. Choosing Custom Installation allows you to determine the ports to be used by Nolio Repository.

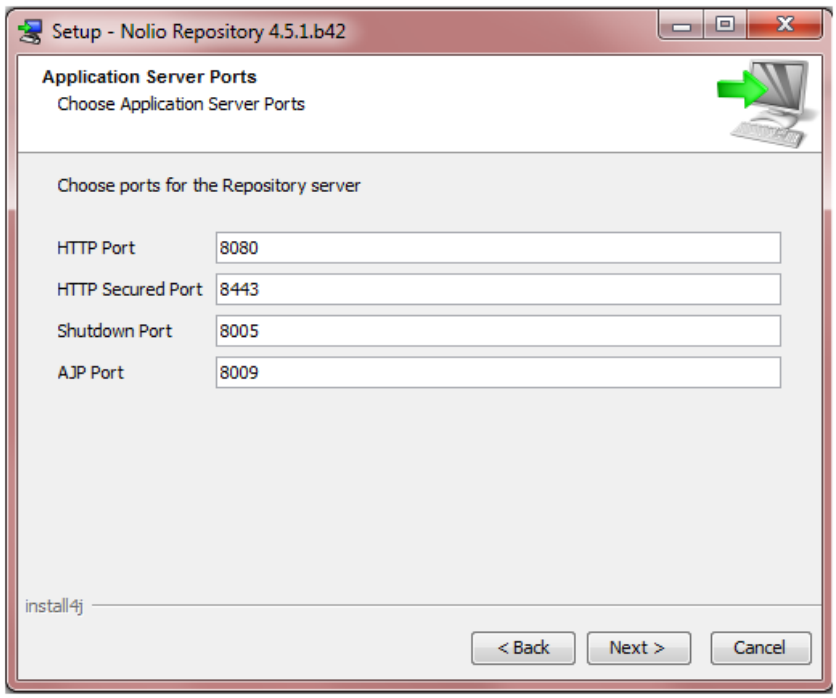
6. Click **Next**. If the Nolio Repository is installed on Windows, the Server Service Configuration window opens.



a. In the **Service User Name** box, enter the user name of a user with administrative privileges and 'Log on as a Service' permission.

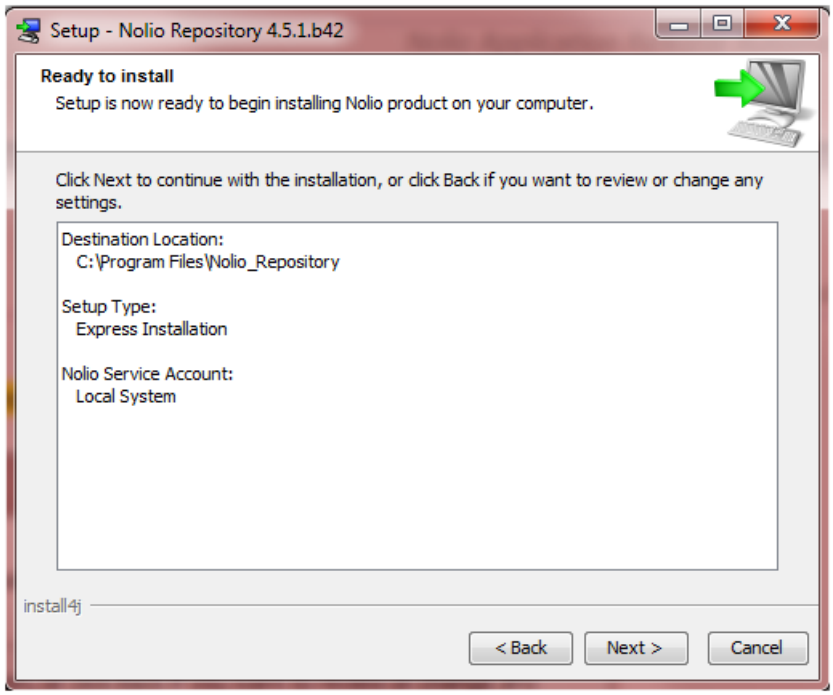
b. In the **Service User Password** box, enter the password for the Service User Name.

7. Click **Next**. If you chose Custom Installation or if one or more of the required ports is already configured, the Application Server Ports window opens.

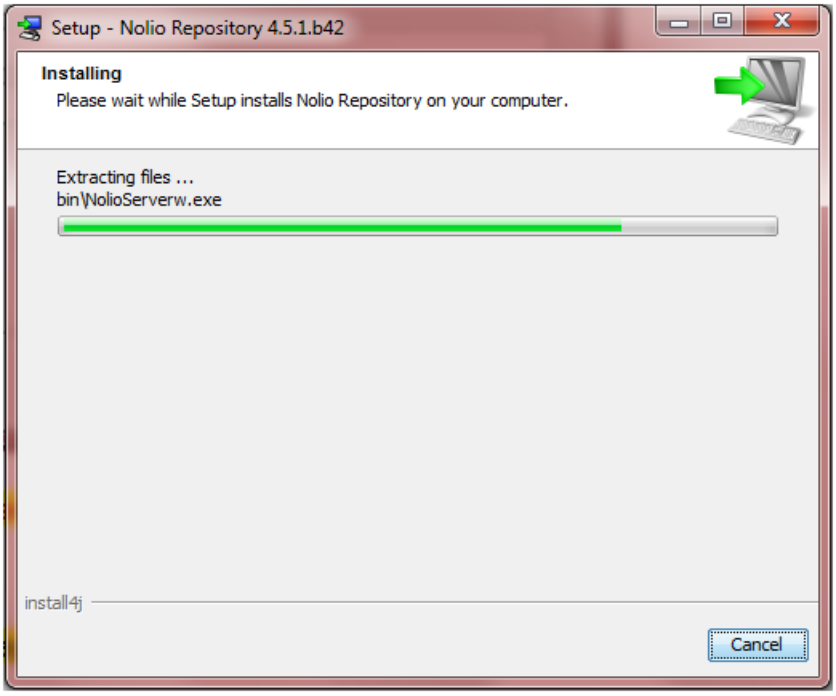


Enter new ports as required.

8. Click **Next**. The Ready to install window opens.



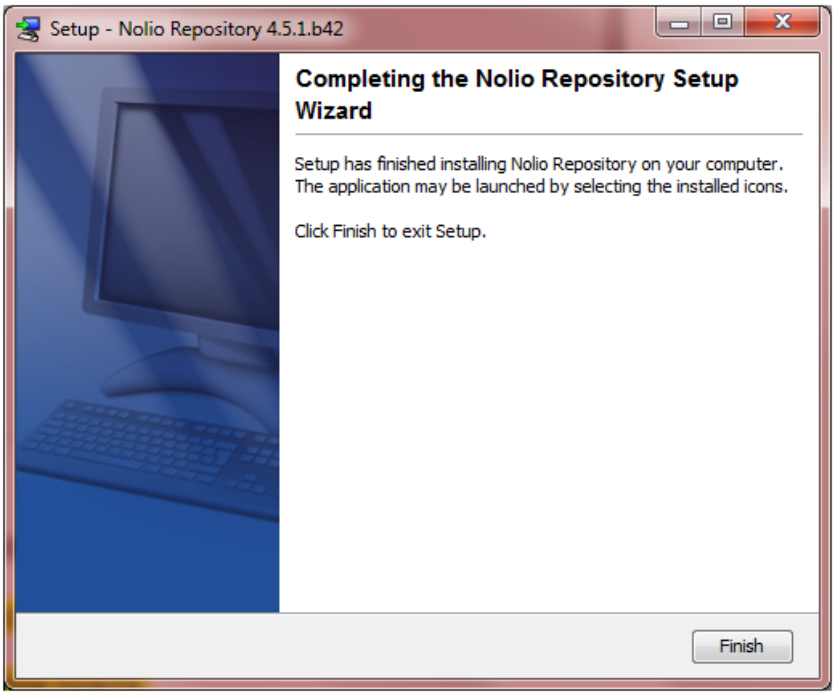
9. Click **Next**. The Installing window opens displaying an installation progress bar.



10. When installation is complete, click **Next**.

    The Select Start Menu Folder window opens.

11. Click **Next**. The Completing the Nolio Repository Setup Wizard window opens.



12. Click **Finish** to exit the Wizard.

Nolio Repository Service Management on non-Windows Platforms

Note: All commands refer to paths relative to the <NOLIO REPOSITORY HOME DIRECTORY>.

- Service startup: `./nolio_repo.sh start`
- Service shutdown: `./nolio_repo.sh stop`
- Service restart: `./nolio_repo.sh restart`
- Service status: `./ nolio_repo.sh status`

Configuring Linux/Solaris for Automatic Startup of Nolio Repository

Note: The following configuration procedure is only necessary if you installed Nolio Repository with a non-root user.

To enable automatic Agent startup on Linux/Solaris:

1. Open `deployer_daemon.sh` file for editing.
2. Find the `#RUN_AS_USER=root` entry.
3. Uncomment the line and add the name of the user who owns the Nolio Agent installation.
4. Save the file.
5. Connect as ROOT user and run the following script from Nolio Agent root folder:

   ```
   ./deployer_daemon.sh install
   ```

   After server reboot, the Nolio Repository service starts with the specified user.

Configuring Nolio Application Release Automation to Work with Stand-alone Nolio Repository

To enable the Nolio to work with a newly installed Nolio Repository:

1. Stop the Nolio Data Management Server service.
2. Backup the `nolio-repo.properties` file located on the Nolio Center machine under <NAC Home>`/conf` folder to a location outside Nolio installation.
3. Update the `nolio-repo.properties` file located on the Nolio Center machine under <NAC Home>`/conf` folder:

a. For the **hostname** fields, add the hostname on which the new Nolio Repository is installed.

   For example:

   ```
   hostname=<HOSTNAME.WHERE.THE.REPOSITORY.WAS.INSTALLED>
   port=<PORT AS CONFIGURED OR DEFAULT PORT>
   ```

4. Start the Nolio Data Management Server service.

Chapter 6

Post-Installation Procedures

In This Chapter

Use the following post-installation procedures as necessary.

Controlling Nolio Server Service on Non-Windows Platforms

Nolio Server service can be manipulated by running a single script with different attributes.

Execute the script from the Nolio ASAP Release Automation Home Directory and by the user that owns Nolio system.

To add Nolio Server service to the services list for automatic start after reboot:

At the Command prompt, run:

```
./nolio_server.sh install
```

If executed, the **install** command enables the Nolio Server service to start automatically in case the host was rebooted similar to automatic start for the Agent.

If Nolio Server service needs to be started with a user other than root, edit the `nolio_server.sh` script as follows:

1. Open shell file
2. Search for RUN_AS_USER
3. Type the username

Note: User should have write, execute and read permissions on Nolio ASAP Release Automation root.

To start the Nolio Server service:

At the Command prompt, run:

```
./nolio_server.sh start
```

To stop the Nolio Server service:

At the Command prompt, run:

```
./nolio_server.sh stop
```

To restart the Nolio Server service:

At the Command prompt, run:

```
./nolio_server.sh restart
```

To query the status of the Nolio Server service:

At the Command prompt, run:

```
./nolio_server.sh status
```

To remove Nolio Server service from the services list:

At the Command prompt, run:

```
./nolio_server.sh remove
```

Uninstalling Nolio ASAP Release Automation

To uninstall Nolio ASAP Release Automation from a machine running under Windows:

Invoke the specific uninstall executable supplied:

1. Choose **Start > All Programs > Nolio**.
2. In the menu that opens to the right, choose **Nolio ASAP Release Automation Uninstaller**.
3. When queried whether to remove the installation, click **Yes**.
4. Follow the uninstall wizard instructions.

To uninstall Nolio ASAP Release Automation from non-Windows machine:

1. Go to `<Nolio Server Home Directory>`.
2. Run the uninstall task (`./uninstall`) and follow the instructions.

Note: The schema in the database is not removed.

Uninstalling Nolio Agent

This section provides instructions for uninstalling the Nolio Agent from Windows and Linux systems.

Windows

To uninstall Nolio Agent from a machine running under Windows run the uninstall executable.

To uninstall Nolio Agent:

1. Choose **Start > All Programs > Nolio**.
2. In the menu that opens to the right, choose the Nolio Agent **Uninstaller**.
3. When queried whether to remove the installation, click **Yes**.
4. Follow the uninstall wizard instructions.

Linux/Solaris

To uninstall Nolio Agent from a machine running on non-Windows platform, run the Nolio Agent uninstall shell script.

- If the target machine has a GUI, uninstall as you would on a Windows platform which is described in Windows (on page 69).
- If the target machine does not have a GUI, the uninstall process is run in text mode:
  a. Go to `<Nolio Agent Home Directory>`.
  b. Run the uninstall task (`./uninstall`) and follow the instructions.

Chapter 7

Running Nolio ASAP Release Automation

In This Chapter

This chapter explains how to invoke the Nolio ASAP Release Automation **Client UI**.

Note: Sun Java version 6 update 16 or higher must be installed on your computer.

Launching the Client UI

The Nolio Application Release Automation UIs use Web Start technology.

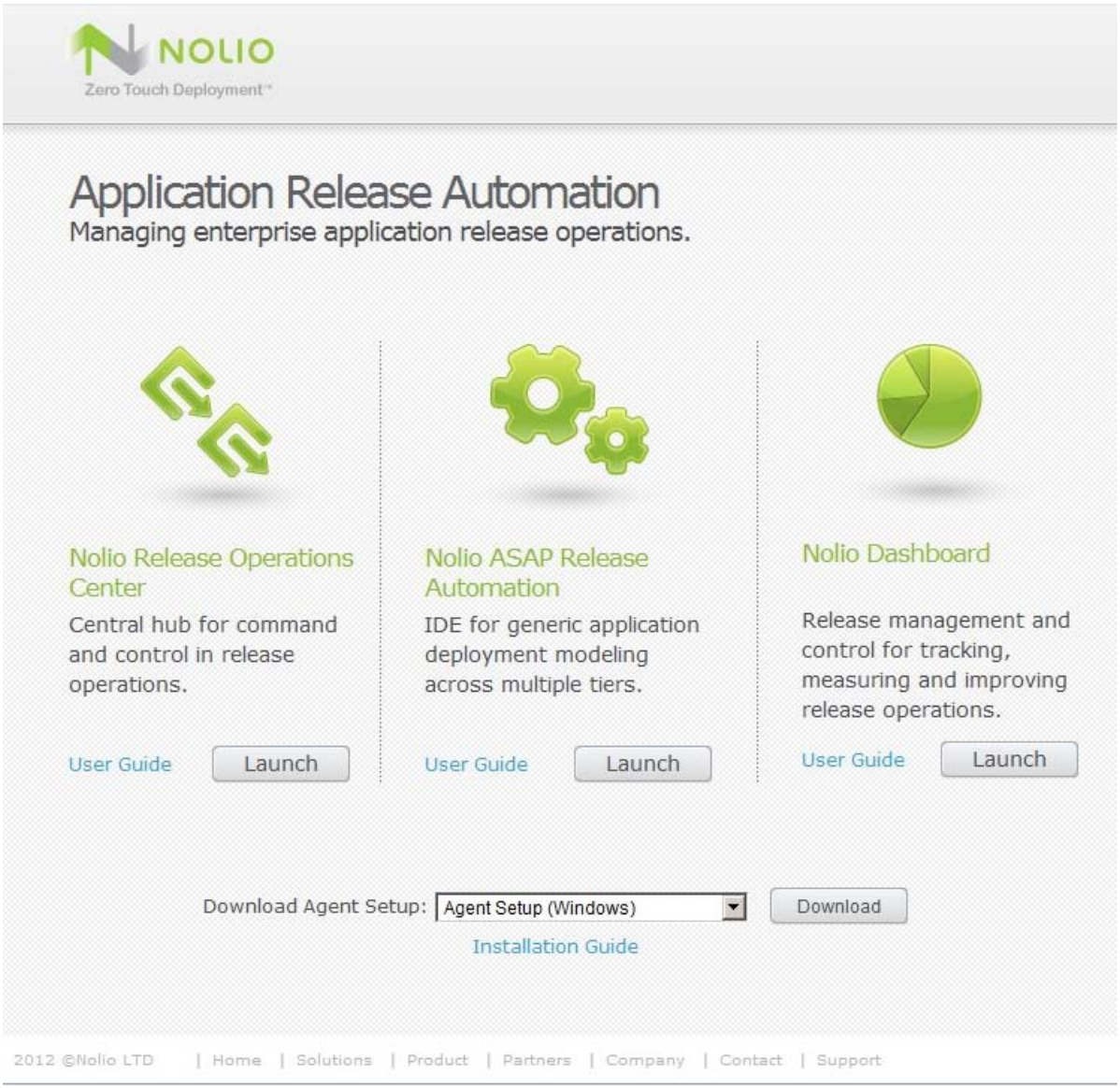
To download and install the Client UI:

1. In your browser, enter:

   `http://<hostname or IP address of center>:8080/nolio-app`

   If Sun Java 6 update 16 or higher is not installed, you are provided with a link to install Java. You need to update your client machine with this JRE version.

The Nolio Application Release Automation page opens.



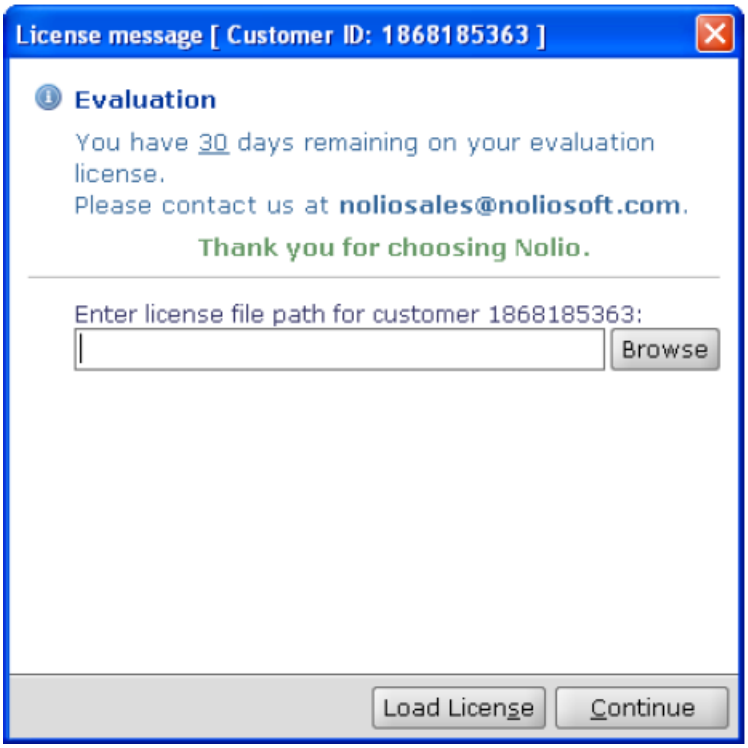
2. Click the Launch button under **Nolio ASAP Release Automation**. The **Download Application** window opens.

3. Click the Launch button under **Nolio Dashboard** to access the Dashboard.

Note: The credentials mechanism for the Nolio Dashboard is based on the mechanism defined within the ASAP User Management component.

4. Click the Launch button under **Release Operations Center** to access the Release Operations Center.

5. If this is the first time you are running the application, the **License Message** window opens.



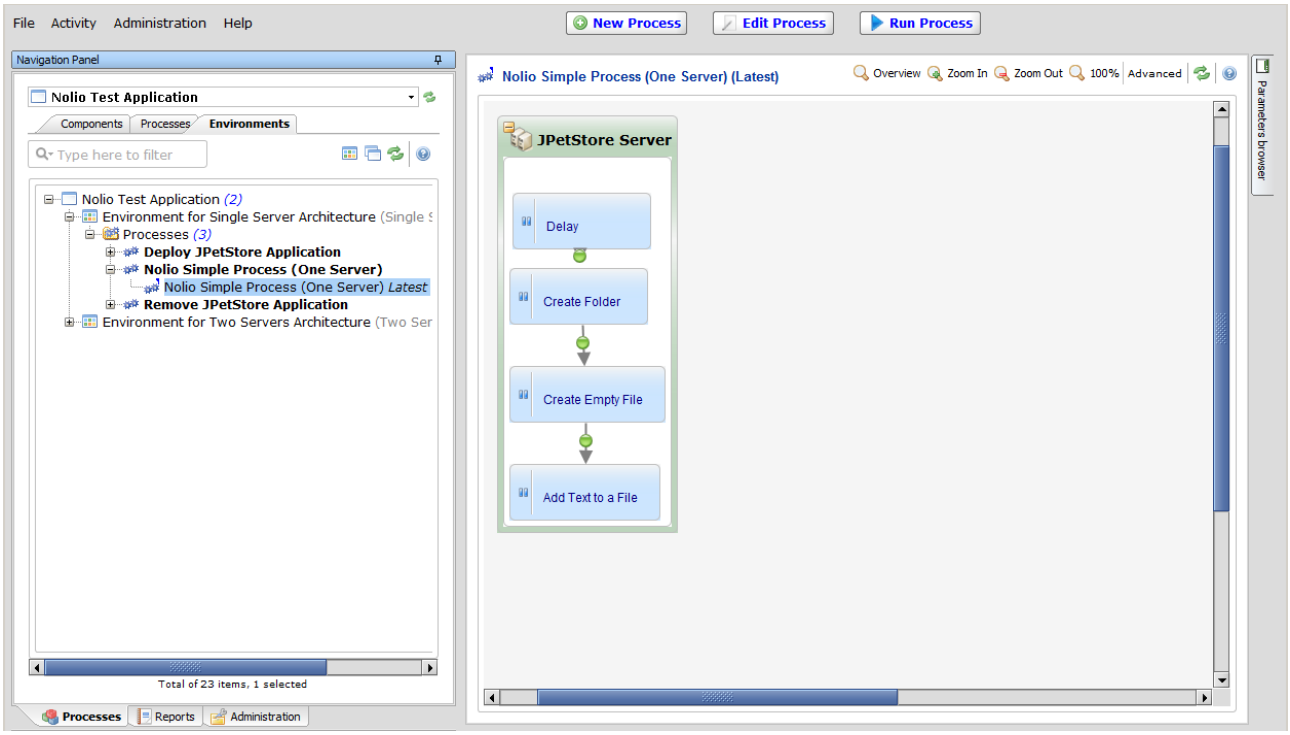
a. If you have obtained a L**icense** file, you may now apply it. Enter the path to the **License** file or click **Browse** and click **Load License**.

b. If you do not have a License file at this time, you may continue your work and apply the License at a later time by clicking **Continue.**

For instructions on how to update the **License** file, see *Updating Nolio ASAP Release Automation License* (on page 142).

Note: If you do not supply a **License** file, the installed product is considered an evaluation kit.

6. The application now loads.



A shortcut  icon opens on your desktop pointing to the application URL. Always use this link to load the application to ensure that you are getting the updated version of the application.

Setting Up Nolio ASAP Release Automation

This section describes the steps required to set up Nolio ASAP Release Automation for use.

Overview

During the Nolio ASAP Release Automation installation, the default administrative user called **superuser** is created. You must use this user on the first login to the Nolio system in order to set up Nolio ASAP Release Automation for use.

Note: For information on changing the default administrative user's details, see *Modifying the Default Administrative User's Details* (on page 96).

Workflow

The workflow for Nolio ASAP Release Automation setup is as follows:

1. Run Nolio ASAP Release Automation Client UI (on page 70).

2. Add Nolio Execution Servers (on page 104).
3. Create Agents Groups (on page 110).
4. Optional: Add Agents to the Test Agents Group (on page 119).
5. Add Agents to Agents Groups (on page 112).
6. Add **Users** and give them Permissions (on page 79).

Chapter 8

Nolio ASAP Release Automation Administration

In This Chapter

This section provides an overview of the tasks that the Nolio ASAP Release Automation Administrator **must** complete to set up and use Nolio ASAP Release Automation.

This section also introduces the Nolio ASAP Release Automation **Administration** tab for administrative tasks.

These tasks require you to log in as **superuser** or one of the **admin user** roles, depending on the particular task. For information on roles, see *Managing Users and Permissions* (on page 79).

Overview

The following administrative tasks are necessary to set up Nolio ASAP Release Automation and use of Nolio ASAP Release Automation:

- Managing Nolio ASAP Release Automation users and user groups.
- Granting application, environment, and server group permissions to Nolio ASAP Release Automation users and user groups.
- Managing the actions inventory.
- Managing the published processes and process tags.
- Managing the agents installed on the organization's servers.
- Managing test agents on which flows and processes can be tested.
- Managing the System Settings.

All administrative tasks are accessed through the Nolio ASAP Release Automation's **Administration** tab.

Note: This section focuses on the **Administration** tab only. For an explanation of the Nolio ASAP Release Automation Client UI, its elements, and their use, see *Introduction to Nolio*.

For information on non-administrative Nolio ASAP Release Automation tasks, see *Nolio ASAP Release Automation User Guide*. Release Operations Center users should also consult *Release Operations Center User Guide*.

Logging in to Nolio ASAP Release Automation

To log in to Nolio ASAP Release Automation Client UI:

1. If you have performed a "Complete Installation" from the client machine, double-click  on your desktop.

   OR

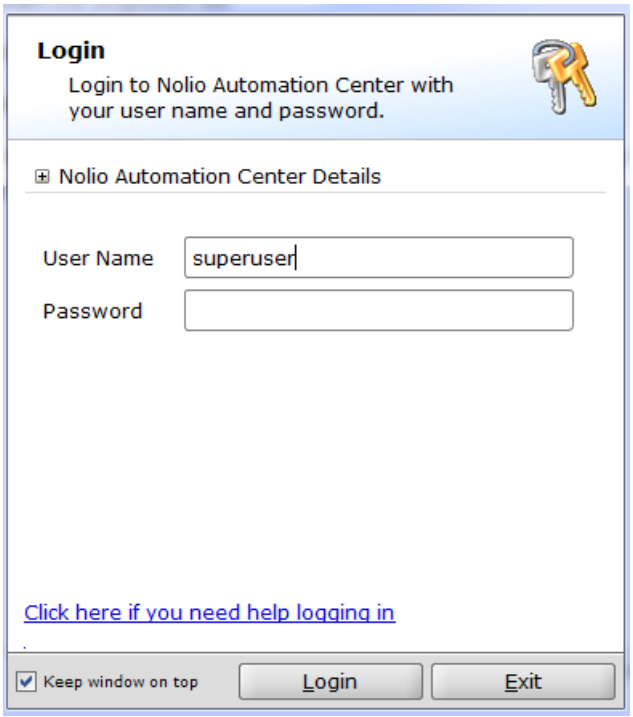
   In your Web browser, type the Nolio ASAP Release Automation URL:

   ```
   http://<IP>:<port>
   ```

   Where **<IP>** is the IP address of the Data Management Server and **<port>** is 8080, unless you have changed the port.

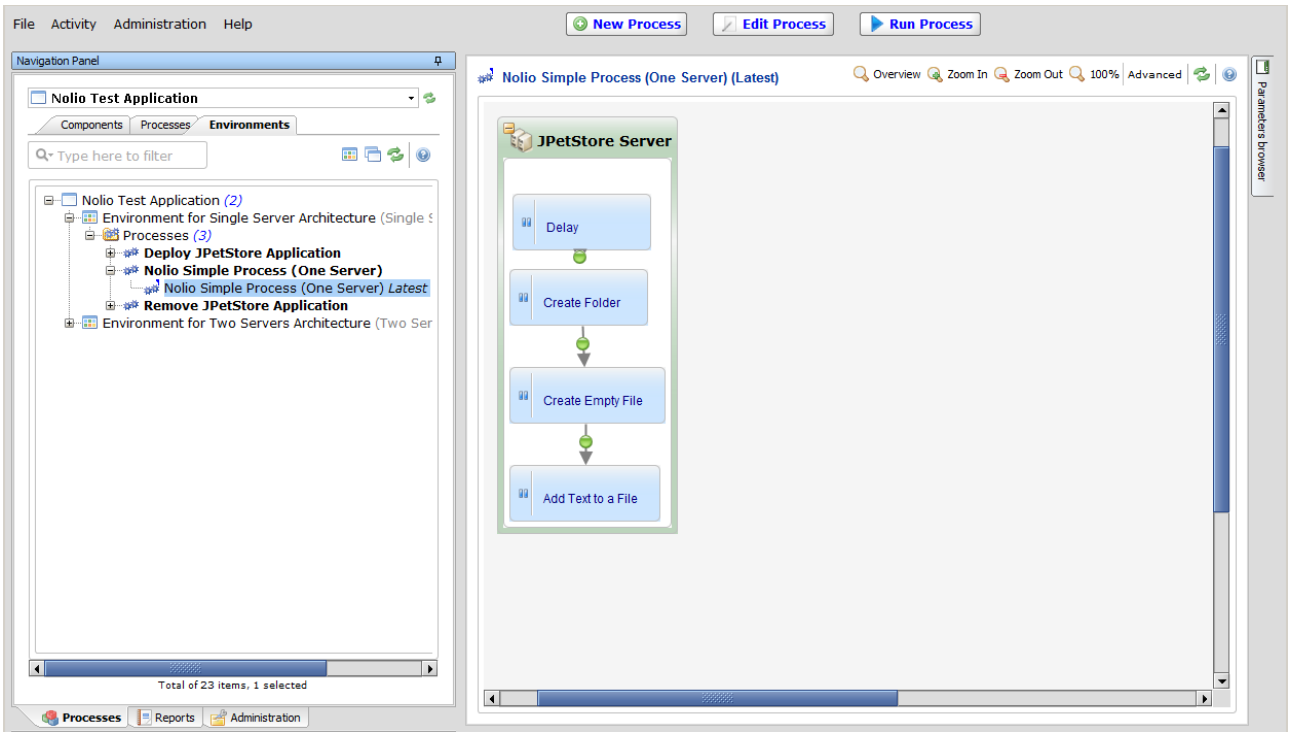
   The Data Management Server Web page opens.

2. Click the **Nolio ASAP Release Automation** button. The Login window opens.



3. If accessing a remote system, expand **Nolio ASAP Release Automation Details**. In the **Nolio ASAP Release Automation Address** box, type the URL of the Nolio ASAP Release Automation server, or select the relevant URL from the drop-down list.
4. In the **User Name** box, type your user name, or leave the default 'superuser'.
5. In the **Password** box, type your password.

   If using the default user name, enter the default password 'suser'. To change the default password, see *Adding and Editing Users* (on page 84).
6. Click **Login**. Nolio ASAP Release Automation opens with the **Environments** tab of the **Processes** window.



Navigating to the Administration Window

To navigate to the Administration window:

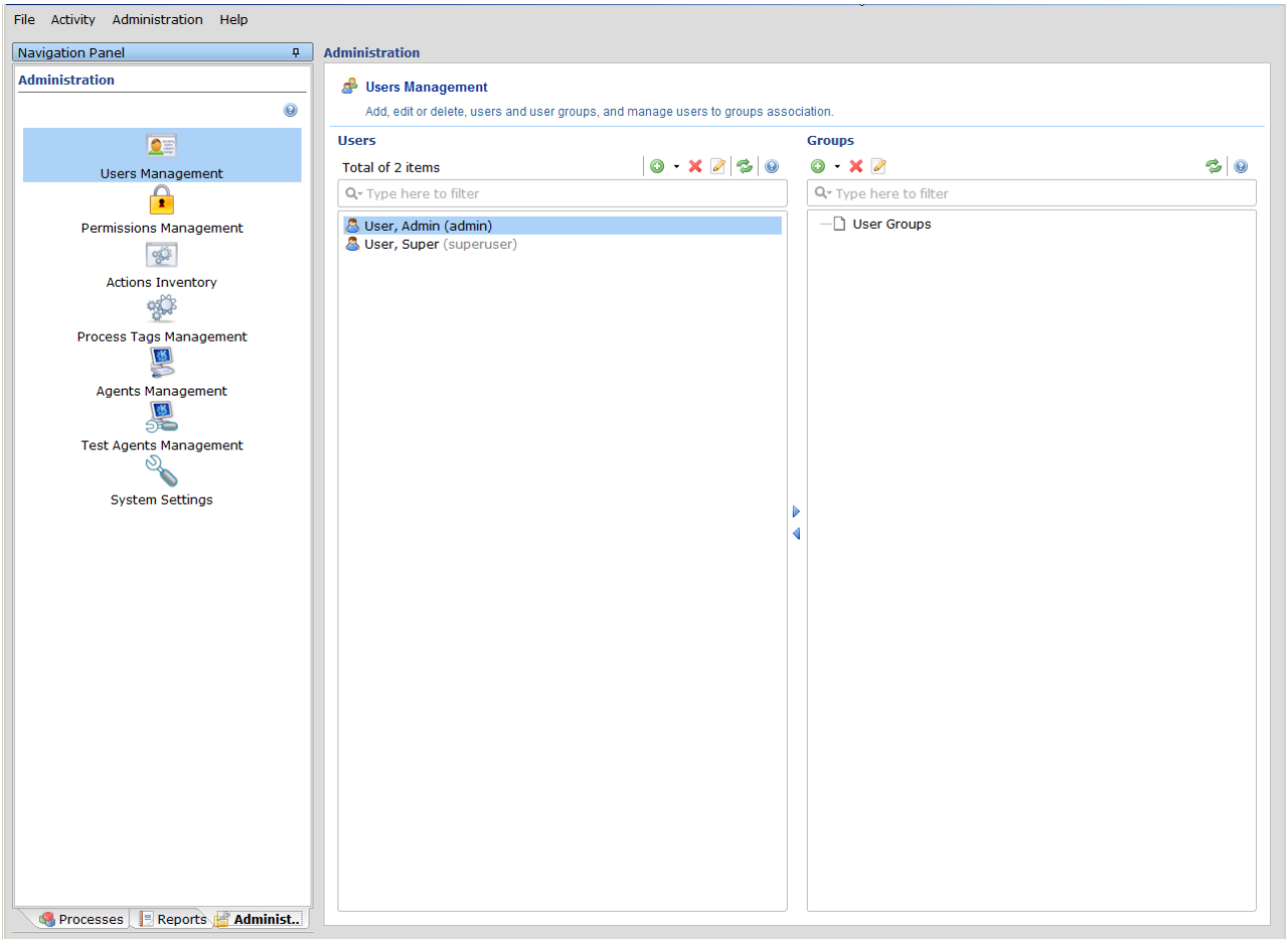
- At the bottom of the **Navigation Panel**, click the **Administration** tab.

  OR
- In the toolbar, click **Administration**, then click the relevant function.

Using the Administration Window

The **Administration** window includes the following components:

- **Administration Panel**: Appears on the left, includes labels for different types of administrative tasks.
- **Central pane**: Displays content determined by the selected Administration task.



Chapter 9

Managing Users and Permissions

In This Chapter

This section explains how to add, edit, and delete Nolio Application Release Automation users and user groups, and how to assign permissions for specific server groups and environments.

Note: These tasks require the administrative user to have authorization as **Superuser** or **Security and Permissions Administrator**.

Overview

Nolio ASAP Release Automation offers three methods for adding users:

- Adding a single user through the Add User dialog. See *Adding and Editing Users* (on page 84).
- Adding multiple users using a batch file. See *Adding Users with a Batch File* (on page 88).
- Importing users from an LDAP directory. See *Importing Users from LDAP* (on page 91).

In addition, Nolio ASAP Release Automation offers a high level of granularity in defining users. Assignable attributes are used to control a user's access and operational capability:

- **Roles** - *Understanding User Roles* (on page 80)

  Roles are defined when a user is added.

- **Permissions** - *Understanding Permissions and Roles* (on page 81)

  Permissions are defined after a user is added, based on control at the application, environment, and process levels.

Understanding User Roles

New users are assigned roles that determine their administrative levels. User roles are combined with *Application Roles* to enable authorization for users to access required areas and operations within Nolio Application Release Automation. User accounts are assigned one of the user level roles:

- **User:** A non-administrative user who:
  - Can access the **Reports** panel.
  - May be granted permissions on server groups.
  - Cannot view applications other than the applications to which they have **Can View Application** permission. Additional permissions are granted at the environment and process levels for an application.
  - Cannot access the **Administration** panel.
- **Superuser**: A user who can perform administrative tasks, such as:
  - Managing Nolio ASAP Release Automation users, permissions, available actions, published processes and process tags, agents, test agents, and system settings.
  - Accessing all panels and tabs.
  - Can view all applications and run all activities on any application. Therefore, there is no requirement to assign application level permissions.
  - Operating on all server groups, applications, and environments.
- **Admin User**: A user with authorization for administrative tasks, but who is not involved in designing or executing processes.

  Admin users can be granted *any* combination of the following administrator roles:
  - **Security and Permissions Administrator**
    - Define new users or admin users, or import from external LDAP.
    - Define new user groups, or import from external LDAP.
    - Grant users and user group permissions at application and environment levels.
  - **Servers Administrator**
    - Manage Execution Servers, such as installing servers remotely and setting properties.
    - Manage Agents, such as installing agents remotely and setting properties.
    - Manage Agents to Agent groups.
    - Manage Test Agents assigned to an application.

- **General System Administrator**
  - Import new Actions libraries.
  - Define general system settings, such as the SMTP port.
  - Create new applications.

Understanding Permissions and Roles

When a regular user is added to ASAP, there are no permissions attached to the user role for access to screens and functions.

The first level of permission granted to a user is to view an application (**Can View Application**). This is an initial permission level. Once a user has **Can View Application** permission, additional permissions can be layered according to the three ASAP levels: application, environment, and process.

- **Application level permissions include:**
  - **Can View Application**
    - View component actions, flows, and parameters.
    - View architectures, Server Types, and processes.
    - Copy components from current application to another application to which the user has permissions.
    - View usages for components and parameters.
    - Can view Reports tab and process activity for the application.
  - **Application Owner**

    ASAP administrators can configure users or user groups **Application Owner** permissions. Defined at the application level, **Application Owner** grants full permissions (superuser) on a specific application and all its environments.
  - **Application Publisher**

    Defined at the application level, **Application Publisher** enables a user to publish any process in any environment under the current application. By default the **Application Designer** permission is enabled.
    - **Application Designer**

      Application Designer enables a user to create and design processes and components under the current application.
  - **Execute Processes in All Environments**

Defined at the application level. This permission enables a user to execute all processes in all environments under the current application.

- **Execute Releases in All Environments (Release Operations Center)**

  Defined at the application level. This permission enables a user to execute all releases in all environments under the current application in Release Operations Center.

- **Release Template Designer (Release Operations Center)**

  Defined at the application level, **Release Template Designer** enables a user to create and design templates in all environments under the current application in Release Operations Center.

- **Environment level permissions include:**
  - **Environment Admin**

    Defined at the environment level, **Environment Admin** enables a user to execute all processes in Nolio ASAP Release Automation, and design releases and execute all releases in Release Operations Center for the current environment.

  - **Can Execute All Processes**

    Can Execute All Processes enables a user to execute all processes in Nolio ASAP Release Automation for the current environment.

  - **Release Designer (Release Operations Center)**

    Release Designer enables a user to design releases in Release Operations Center for the current environment.

  - **Can Execute All Releases (Release Operations Center)**

    Can Execute All Releases enables a user to execute all releases in Release Operations Center for the current environment.

- **Process/release level permissions include:**
  - **Individual processes**

    Defined at the environment level, users who have not been given **Can Execute All Processes** permission for the environment can be authorized to execute individual processes.

  - **Individual release templates (Release Operations Center)**

    Defined at the environment level, users who have not been given **Can Execute All Releases** permission for the environment can be authorized to execute releases created from specific templates in Release Operations Center.

Each user's authorization is validated for a specific request before access is provided. Users with "Superuser" authorization have all permissions.

Combinations of user permissions form functional roles.

- **Design Template** is granted to a user who has **Release Template Designer** or **Application Owner** permission on application level.

- **Design Release** is granted to a user who has **Release Designer** permission on environment level, **Environment Admin** on environment level or **Application Owner** on application level.
- **Release Executor** is granted to a user who has any of the following:
  - **Can Execute All Releases** permission on environment level.
  - **Execute Releases In All Environments** on application level.
  - Can execute only releases created from selected templates in the environment level.
  - **Environment Admin** on environment level.
  - **Application Owner** on application level.

Understanding User Authentication

ASAP provides a user management system that supports user login and authentication. When a user is added to ASAP, their details are added to the user table. These details are used later on to authenticate users upon login. The 'username' attribute is the unique identifier used to lookup that user in the database.

ASAP supports two authentication methods:

- Basic

  The Basic authentication method is a proprietary user management mechanism that stores the user's password in the database and authenticates the user against it upon login.

- LDAP

  Nolio supports authentication of ASAP users against any LDAP server, including Active Directory.

  When using LDAP authentication, the user password is not stored in ASAP. Whenever an LDAP user logs in, the password provided during login is authenticated against an LDAP server. The required LDAP attributes are stored in the user record in the database. See *Understanding LDAP Authentication Attributes* (on page 83).

  ASAP supports authentication against any LDAP server, including Active Directory.

Understanding LDAP Authentication Attributes

The following values are used to authenticate the LDAP user:

Table 3: LDAP Authentication Attributes

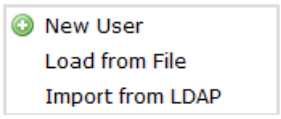
Name	Required	Description
Username	Required	Unique identifier of the user in the ASAP system. If Security Context is not provided, the username is used as both the identifier in the ASAP system and the Security Context for the purposes of LDAP authentication. In this case the username format should adhere to the specifications of the Security Context as defined later in this table.
LDAP Host	Required	Hostname or IP address of the LDAP Server
LDAP Port	Optional	Ports that the server uses for the LDAP/LDAPS protocols. If left blank, uses defaults. This setting is also used when authenticating a user that was created through import operations. If not provided, the port usually resolves to the following defaults: • 389 for LDAP • 636 for LDAPS
Search Context	Required for LDAP	Context in which to search for the user, for example, the user's domain. The Search Context should be provided in a Qualified Name format: `dc=mycompany,dc=com`
Security Context	Optional	User's security context used to authenticate against the LDAP server. If blank, the username is used as the LDAP security context, in which case it must follow the guidelines described here. The Security Context should be an identifier that is recognized and supported by the LDAP server. Common options for Active Directory Security Contexts: • UserPrincipalName: Usually formatted as `user@domain`, for example, `john.doe@mycompany.com` • SamAccountName: Usually formatted as `<domain short name>\"samaccountname"` `mycompany\jdoe` • Distinguished Name: The FQDN of the user, for example, `CN=John Doe,CN=Users,DC=mycompany,DC=com`
SSL	Optional	Boolean indicating whether LDAP or LDAPS should be used. Default is LDAP.

Adding and Editing Users

To add a user:

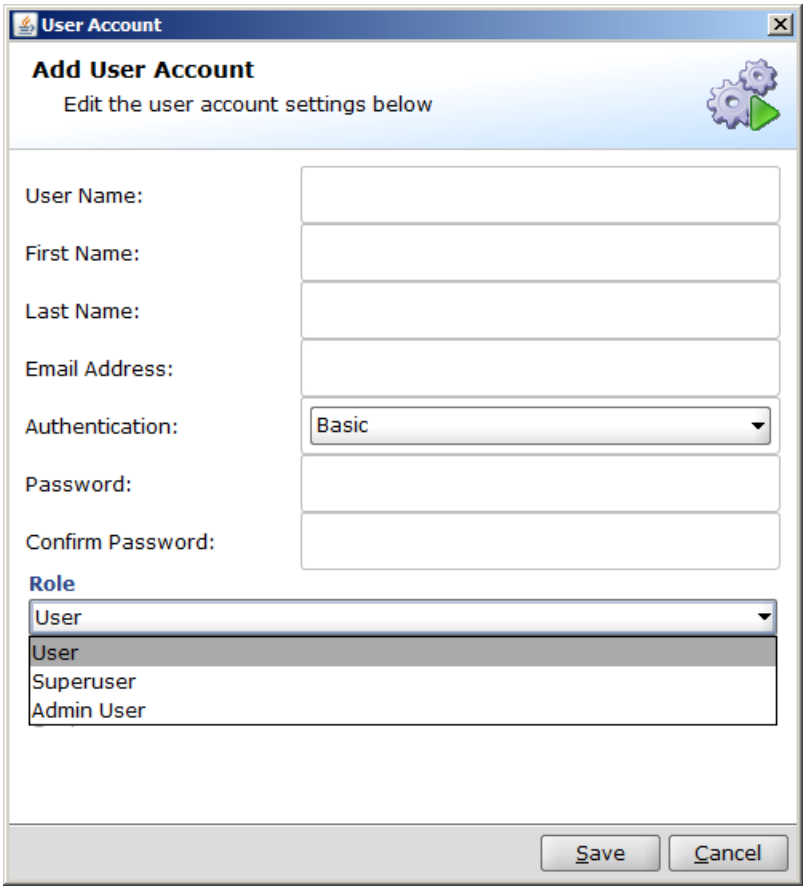
1. In the **Administration** tab of the **Navigation Panel**, click the **Users Management** tab.

2. To add a new user, click  in the **Users** list. A selection window opens.



3. Select **New User** or click  .

4. The **Add User Account Settings** window opens.



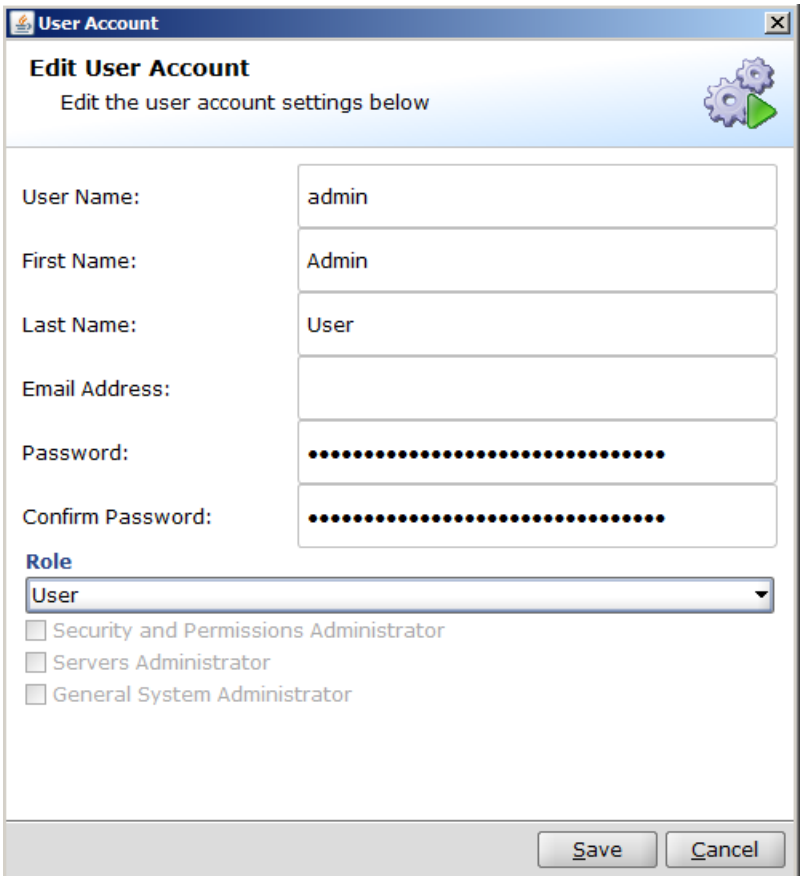
5. Complete the fields according to the User Account Settings table.

6. Click **Save**.

To edit an existing user:

1. Select the relevant user in the **Users** list.

2. Click or double-click the **User Name**. The edit **User Account** window opens.



3. Edit according to the information in the User Account Settings table.
4. Click **Save**.
5. Assign permissions as necessary for role. See *Granting Permissions* (on page 98).

Table 4: User Account Settings

Field	Description	Example
Username	Type a user name for the user. In the **Edit User details** window, this field is read-only.	JohnSmith
First Name	Type the user's first name.	John
Last Name	Type the user's last name.	Smith
Email Address	Type the user's email address.	johnsmith@mycompany.com

Field	Description	Example
Authentication	Select the authentication method for the user: • BASIC (User name and password) • LDAP (includes Active Directory) See *Understanding User Authentication* (on page 83).	LDAP
Role	Select the relevant role for the user. • **User** • **Superuser** • **Admin User** -Select an administration level, choosing one of the options listed in the following row. For role details, see *Understanding User Roles* (on page 80).	USER
Administration Level (Admin user role)	If Role is **Admin User**, select an administration level: • **Security and Permissions Administrator** • **Servers Administrator** • **General System Administrator** For details, see *Understanding User Roles* (on page 80).	Servers Administrator
If **Basic** authentication method is selected, the following fields are displayed:		
Password	Type a password.	mypassword
Confirm Password	Retype the password.	mypassword
If **LDAP** authentication method is selected, the following fields are displayed:		
LDAP Host	Resolvable name or address of the LDAP server. Must contain a valid value if Active Directory or LDAP authentication methods are used.	
LDAP Port	Port number through which the LDAP server serves the LDAP/LDAPS protocol. Leave blank to use LDAP defaults.	
LDAP Search Context	Path to an LDAP entry that is an ancestor of the LDAP user.	
LDAP Security Context	Security context used to authenticate the user. The security context is the value of the **userprincipalname** LDAP attribute. Leave blank to use the username attribute as the LDAP security context.	

Field	Description	Example
Use SSL	Select to use SSL in LDAP connection.	

Adding Users with a Batch File

Multiple Nolio user accounts can be created in a single operation. Individual user attributes are provided through a tab-delimited data file.

To Create a Batch File for Adding Users:

Create a text file with the following characteristics:

- Each line in the tab-delimited file corresponds to a user account.
- Each line *must* contain *all* of the user account attributes listed in the *Add Users Batch File Layout* (on page 88) table even if the values are empty strings.

Add Users Batch File Layout

Table 5: Add Users Batch File Layout

	Entry	Description
1	User Name	Identifier of the user in ASAP. Must be unique across all users. Allowed characters: alphanumeric, backslash (\), period (.), underscore (_), hyphen (-), and "at" sign ('@').
2	Last Name	Last name of the user.
3	First Name	First name of the user.
4	Email	Email address used by ASAP server to send notifications.
5	Password	User's password when using Basic authentication. Leave blank when using LDAP authentication.
6	Authentication Method	Method used to authenticate user. • BASIC: ASAP's proprietary authentication method which requires storing a password in ASAP. • LDAP: Authentication is completed on LDAP server. LDAP authentication requires configuration of a valid LDAP server and a valid LDAP Search Context attribute for looking up users.
7	LDAP Host	Resolvable name or address of the LDAP server. Must contain a valid value if Active Directory or LDAP authentication methods are used. Leave blank when using LDAP authentication.
8	LDAP Port	Port number through which the LDAP server serves the LDAP/LDAPS protocol. Leave blank to use LDAP defaults or Basic authentication.

	Entry	Description
9	LDAP SSL	LDAP: Use the LDAP protocol (no encryption). LDAPS: Use the LDAPS protocol (SSL encryption). Leave blank when using Basic authentication.
10	LDAP Search Context:	Path to an LDAP entry that is an ancestor of the LDAP user. Leave blank when using Basic authentication.
	LDAP Security Context:	Security context used to authenticate the user. The security context is the value of the **userprincipalname** LDAP attribute. If blank, the username attribute is used as the LDAP security context. Leave blank when using Basic authentication.
11	Suffix	Pound sign (#) delimiting end of user record.

Example

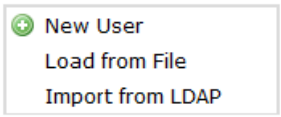
Following is an example of the layout for a batch file to add users:

```
guy.basic<tab>ginzburg<tab>guy<tab>guy@abc.com<tab>guypw<tab>BASIC<tab><ta
b><tab><tab>SUPERUSER<tab><tab><tab>#<cr><lf>
guy.basic2<tab>ginzburg<tab>guy<tab>guy@abc.com<tab><tab>LDAP<tab>monster<
tab><tab>LDAP<tab>CN=Users,DC=nolio<tab><tab>#<cr><lf>
```

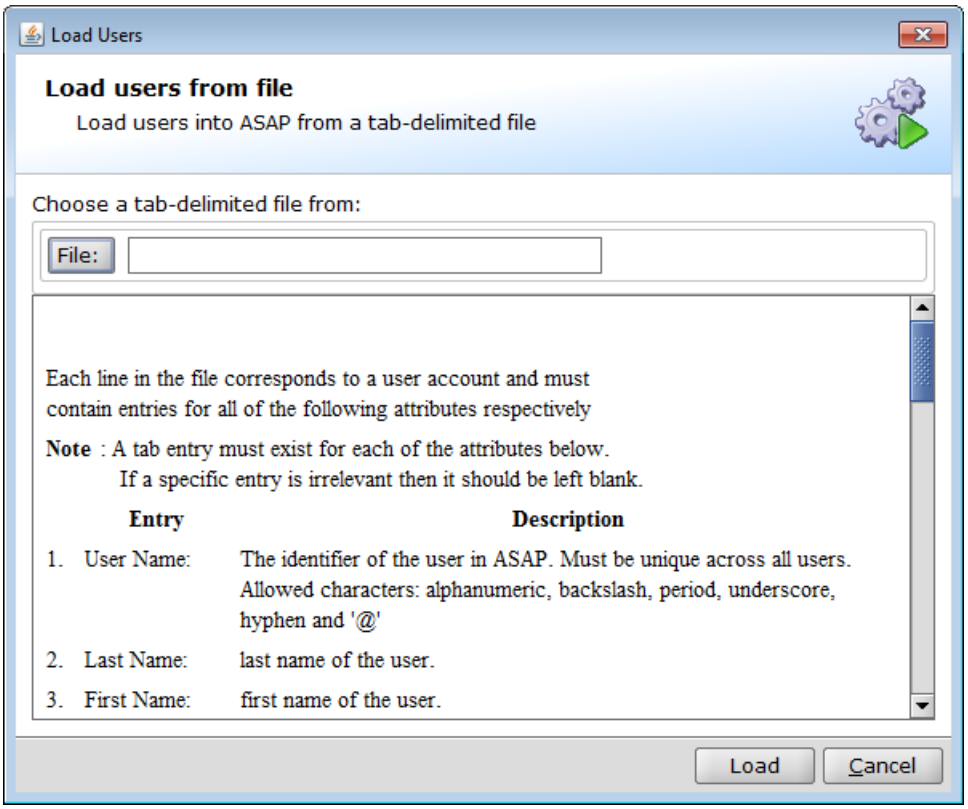
Loading Users with a Batch File

To Load Users with a Batch File

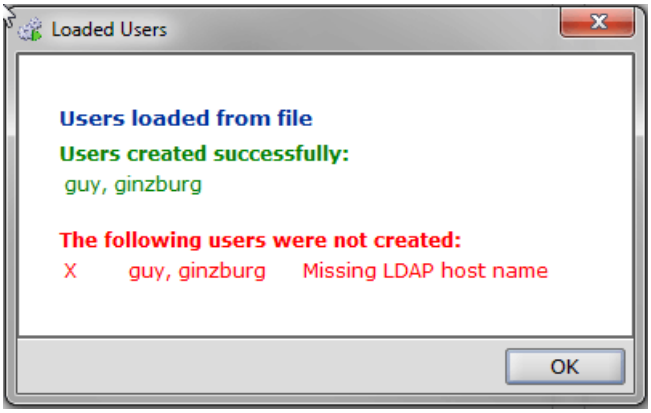
1. In the **Administration** tab of the **Navigation Panel**, click **Users Management**.
2. In the **Users** panel, click  **Users** list. The load user method menu opens.



3. Select **Load from File**. The **Load Users** window opens.



4. Click **File** to open an Open dialog box for selecting an input file. The Open dialog box opens.
5. Select an input file and click **Open**. Control returns to the **Load Users** window.
6. Click **Load** to load the selected file. The load process begins.
7. When loading completes, the **Loaded Users** message opens, providing detailed information about the load:



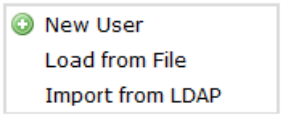
8. Click **OK** to close the Loaded Users window.

Importing Users from LDAP

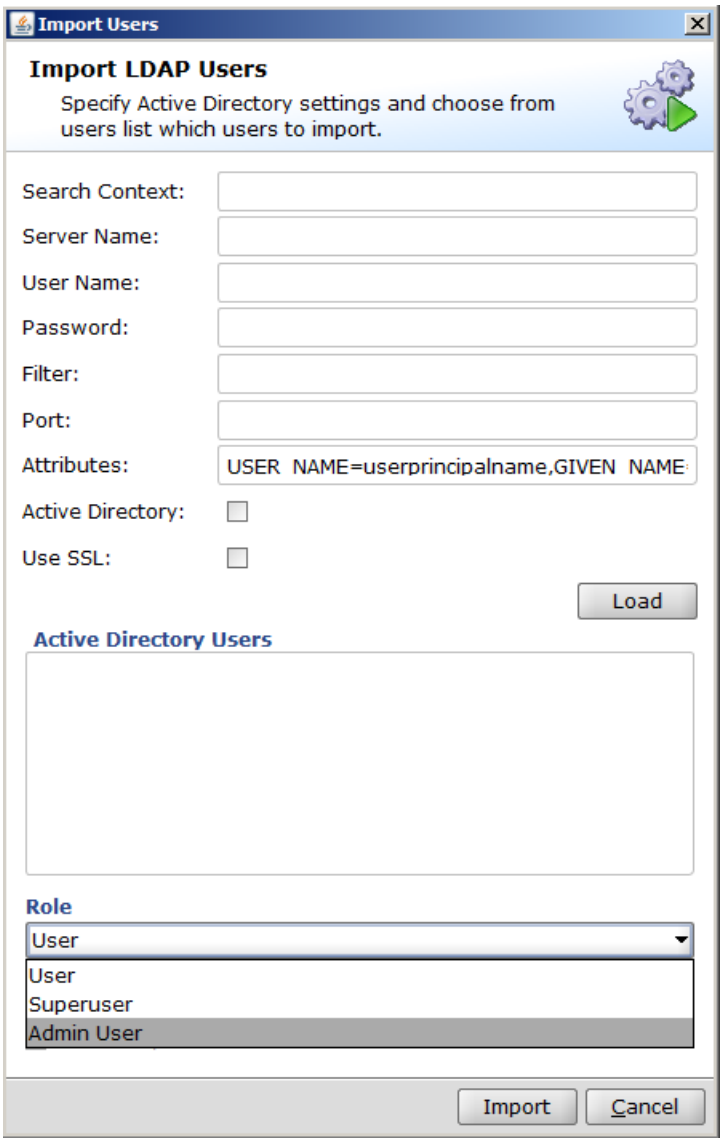
Note: Before you start, contact your Nolio administrator for the list of attributes required to connect to browse the LDAP directory. Or, use an external LDAP browser to look up LDAP attribute values.

To import users from an LDAP directory:

1. Browse the LDAP server for a list of users.
2. Select the LDAP users that should be added to the ASAP system.
3. In the Nolio ASAP Release Automation **Administration** tab of the **Navigation Panel**, click **Users Management**.
4. In the **Users** panel, click  in the Users list. A selection menu opens:



5. Select **Import from LDAP**. The **Import Users** window opens.



6. Enter the field data as required according to the *LDAP Browse Criteria Table* (on page 93).
7. Click **Load** to import users meeting the search criteria.

   Users meeting the browse criteria are listed in the Active Directory Users pane.
8. To accept the list of loaded users for importing:

   a. In the **Role** list, select **LDAP User**.

   b. Click **Import**.
9. To adjust the browsing criteria and start over, click **Cancel**.
10. Click **Save** to store the imported users.

Note: Custom LDAP accounts are verified when the user logs in, not at account creation.

LDAP Browse Criteria Table

Field	Description	Example
Search Context	LDAP directory path to search for the users. The Search Content path is used during user authentication.	DC=mycompany
Server Name	Resolvable alias or address of the domain controller. The Server Name value is used during user authentication.	
User Name	Security context of the browsing user used to connect to and browse the directory.	admin@mycompany.com
Password	Password of the browsing user.	
Filter	LDAP query used to filter the users that reside in the subtree under the search context. If blank, all users are returned.	userprincipalname=*@mycompany.com
Port	Enter ports that the server uses for the LDAP/LDAPS protocols. The Port value is used during user authentication. If blank, defaults are used.	
Attributes	Enter the descriptor for the attributes to be looked up in the LDAP user entry. The attributes should be provided as a comma-delimited list of pairs: `USER_NAME=uid,GIVEN_NAME=givenname,SURNAME=sn,EMAIL=email,USERNAME_DECORATION=@mycompany.com` See *LDAP Attributes Table* (on page 94).	
Active Directory	Indicates whether Active Directory standards should be used when looking up the users. In an Active Directory server, using this attribute reduces the number of returned records.	True
Use SSL	Indicates whether to use SSL (LDAPS) or not (LDAP) when connecting to the directory. The Use SSL setting is used during user authentication.	True

LDAP Attributes Table

Option	Description
USER_NAME	Required. Name of the attribute that stores the user's login name: `USER_NAME=userprincipalname`. The lookup value can be decorated using the USERNAME_DECORATION option: • For Active Directory, the user name attribute is usually either userprincipalname or samaccountname. • For other LDAP servers, a common username attribute is uid.
GIVEN_NAME	Name of the attribute that stores the user's given name: `GIVEN_NAME=givenname`
SURNAME	Name of the attribute that stores the user's surname: `SURNAME=sn`
EMAIL	Name of the attribute that stores the user's email address: `EMAIL=email`
USERNAME_ DECORATION	An expression that supports appending a prefix or suffix to the retrieved user name: `USERNAME_DECORATION=mycompany.com\\` or `USERNAME_DECORATION=@mycompany.com`. Formats: • Prefixes always end with '\\'. • Suffixes always begin with '@'.

LDAP Groups

LDAP user groups can be imported into the Nolio User Management console. LDAP organizations can preserve control of the user management process within their LDAP systems while allowing user access to Nolio applications. When an LDAP group user tries to connect to Nolio, Nolio accesses the LDAP server for authentication and authorization.

When the LDAP group user is using Nolio ASAP Release Automation, access to tabs, applications, and functions is controlled by the permissions assigned in Nolio to the user's LDAP group. Any user created in LDAP and assigned to an LDAP group which was imported to Nolio enjoys all Nolio permissions assigned within Nolio to the group. Domain users not part of the imported LDAP group can only view a blank screen in Nolio.

To enable LDAP integration, system administrators must manually update the `distributed.properties` file, located on the Nolio Server machine under the webapps/datamanagement/WEB-INF folder. For implementation details, see *Enabling LDAP Integration* (on page 167).

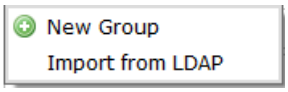
Importing LDAP Groups

To import an LDAP group:

1. Verify that LDAP Integration is enabled (on page 167).

2. In the **Administration** tab of the **Navigation Panel**, click **Users Management**.

3. In the **Groups** panel, click . A selection menu opens:

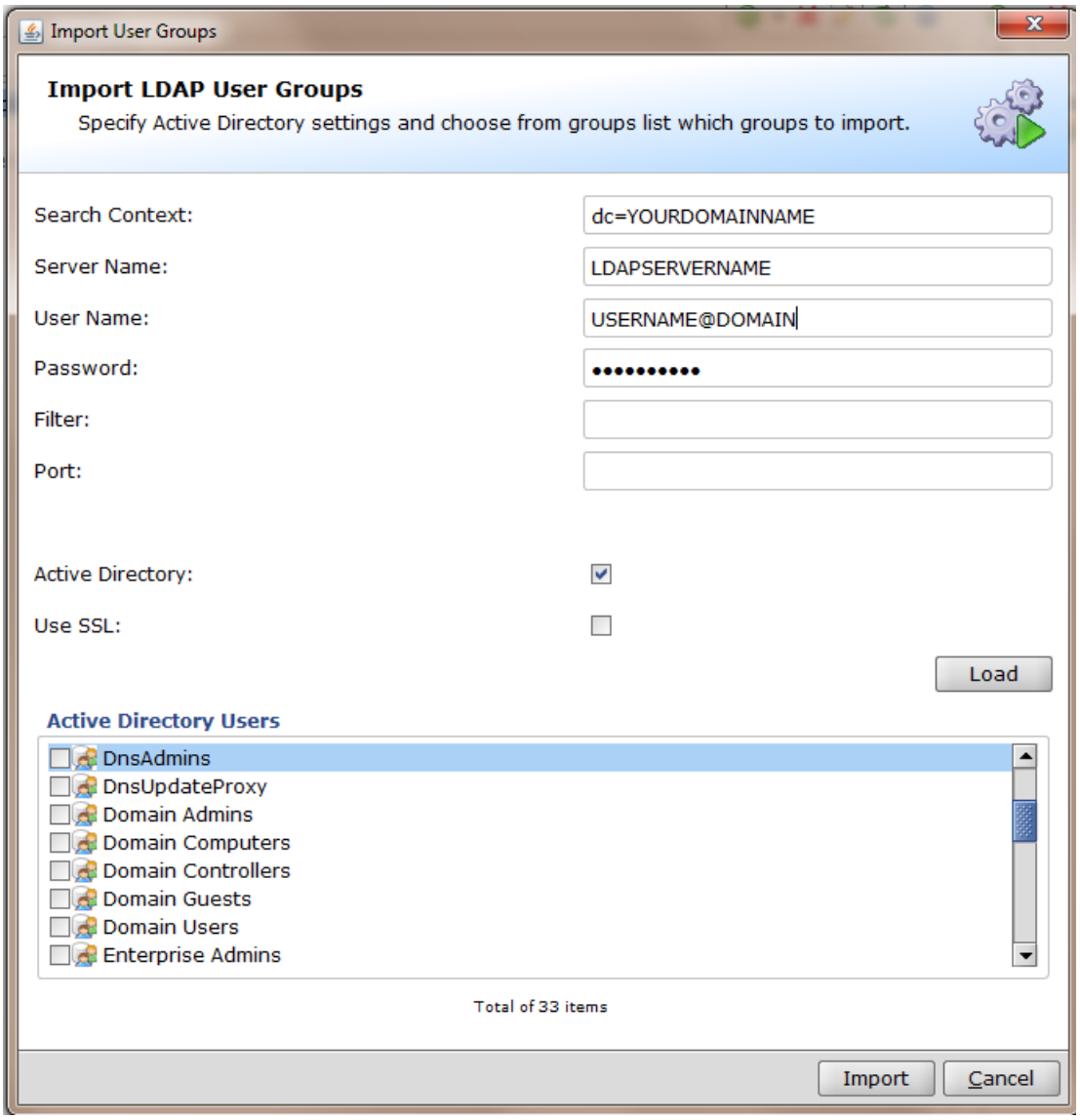


4. Select **Import from LDAP**. The Import User Groups dialog box opens.

5. Enter the field data as required, except for Attributes, according to the *LDAP Browse Criteria Table* (on page 93).

6. Click **Load** to import users meeting the search criteria.

   Users meeting the browse criteria are listed in the Active Directory Users pane.



7. To accept the list of loaded users for importing, click **Import**.

8. To adjust the browsing criteria and start over, click **Cancel**.
9. Click **Save** to store the imported group.
10. Grant permissions to the imported group. See *Granting Permissions* (on page 98).

Modifying the Default Administrative User's Details

During Nolio ASAP Release Automation installation, a default administrative user called "superuser" is created. If necessary, you can change the default administrative user's details. See *Adding and Editing Users* (on page 84).

Deleting Users

To delete a user from Nolio ASAP Release Automation:

1. In the **Administration** tab of the **Navigation Panel**, click **Users Management**. The **Users Management** page opens.
2. In the **Users** list, select the relevant user, click , and confirm the operation. The **user** is deleted.

Adding and Editing User Groups

To add or edit a user group in Users Management:

1. In the **Administration** tab of the **Navigation Panel**, click **Users Management**. The **Users Management** page opens.
2. To **add** a new **user group**, click in the Groups list. A **New Users Group** window opens, where you can add the name for the group.
3. To **edit** an existing **user group**, select the relevant user group and click . The **Edit Users Group** window opens.
4. Complete the fields using the information in the following table.
5. Click **Apply**.

Table 6: User Group Fields

Field	Description	Example
Group Name	Type a user name for the user group. In the **Edit Users Group** window, this field is read-only.	Operations Team
Description	Type a description of the user group.	This is a group for the operations team.

Deleting User Groups

To delete a user from Nolio ASAP Release Automation:

1. In the **Administration** tab of the **Navigation Panel**, click **Users Management**. The **Users Management** page opens.
2. In the **Groups** list, select the relevant user group, click , and confirm the operation. The **user group** is deleted.

Adding Users to User Groups

To add a user to an existing user group:

1. In the **Administration** tab of the **Navigation Panel**, click **Users Management**. The **Users Management** page opens.
2. In the **Users** list, select the relevant user.
3. In the **Groups** list, select the user group to which you want to add the user and click . The user is added to the user group.

Note: An LDAP user group can be managed *only* from the LDAP server. Users cannot be added to an LDAP group from the User Management pane.

Removing Users from User Groups

To remove a user from a user group list:

1. In the **Administration** tab of the **Navigation Panel**, click **Users Management**. The **Users Management** page opens.
2. In the **Groups** list, under the relevant user group, highlight the user you want to remove and click . The user is removed from the user group.

Granting Permissions

Note: To grant, view, or modify permissions, the administrative user must have authorization as **Superuser** or **Security and Permissions Administrator**.

Permissions can be granted per **user** or per **group** for operations on a **Server Group** and an **Application**. Within a permitted **Application**, permissions can be granted at the **Environment** and **Process** level.

Users are only allowed to view or complete actions for which they have the appropriate application role permissions. See *Understanding Permissions and Roles* (on page 81).

Four types of icons are used to represent users and groups in the Permissions Management pane:

-  - Nolio user
-  - LDAP user
-  - Nolio user group
-  - LDAP user group

Granting Permissions for Server Groups

To grant permissions on Server Groups:

1. In the **Administration** tab of the **Navigation Panel**, click **Permissions Management**. The **Permissions Management** page opens.
2. In the **Users and Groups** list, select the **user** or **user group** for which you want to grant permissions.
3. In the **Permissions** area, click the **Server Groups** tab. The **Server Groups** tab displays a tree containing all defined server groups and the servers they contain.
4. Select the check box next to each server group on which the **user** or **user group** should be granted permissions and click **Save.** The user or user group are granted permissions on the servers belonging to the selected server group.

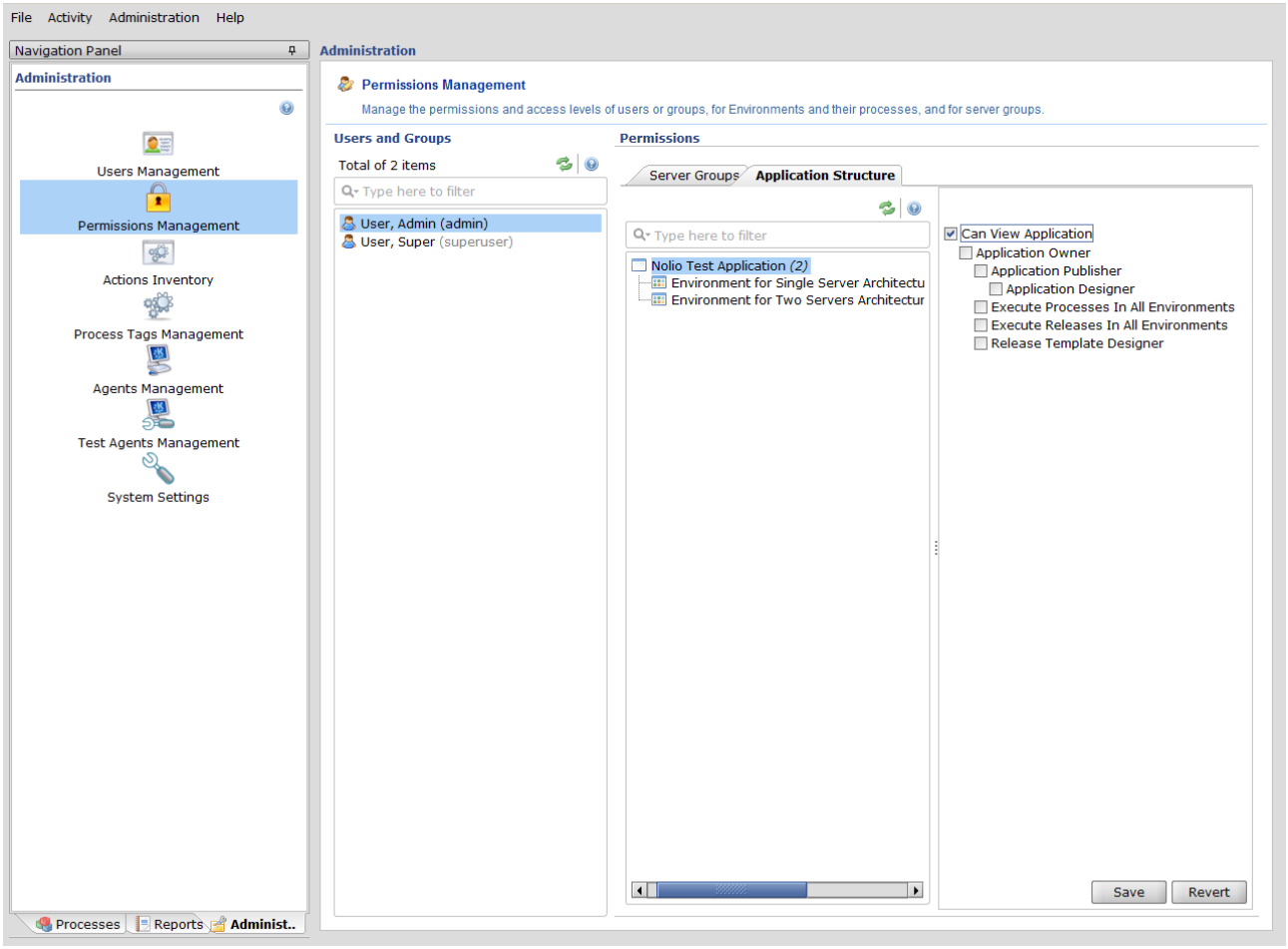
Granting Permissions for Applications

Note: Application permission must be authorized for the target Environment before granting Environment permission.

To grant application level permissions

1. In the **Administration** panel, select **Permissions Management**.
2. In the **Users and Groups** pane, select the target user or group.

3. In the **Permissions** pane, select the **Application Structure** tab. The application and environment tree opens.



4. To allow the user to view an application:

   a. Select the target application. The **Can View Application** check box appears in the top of the right pane.

   b. Select the **Can View Application** check box.

5. Click **Save** to store the selections, or **Revert** to cancel selections.

6. For information on application roles and additional permissions, see *Understanding Permissions and Roles* (on page 81).

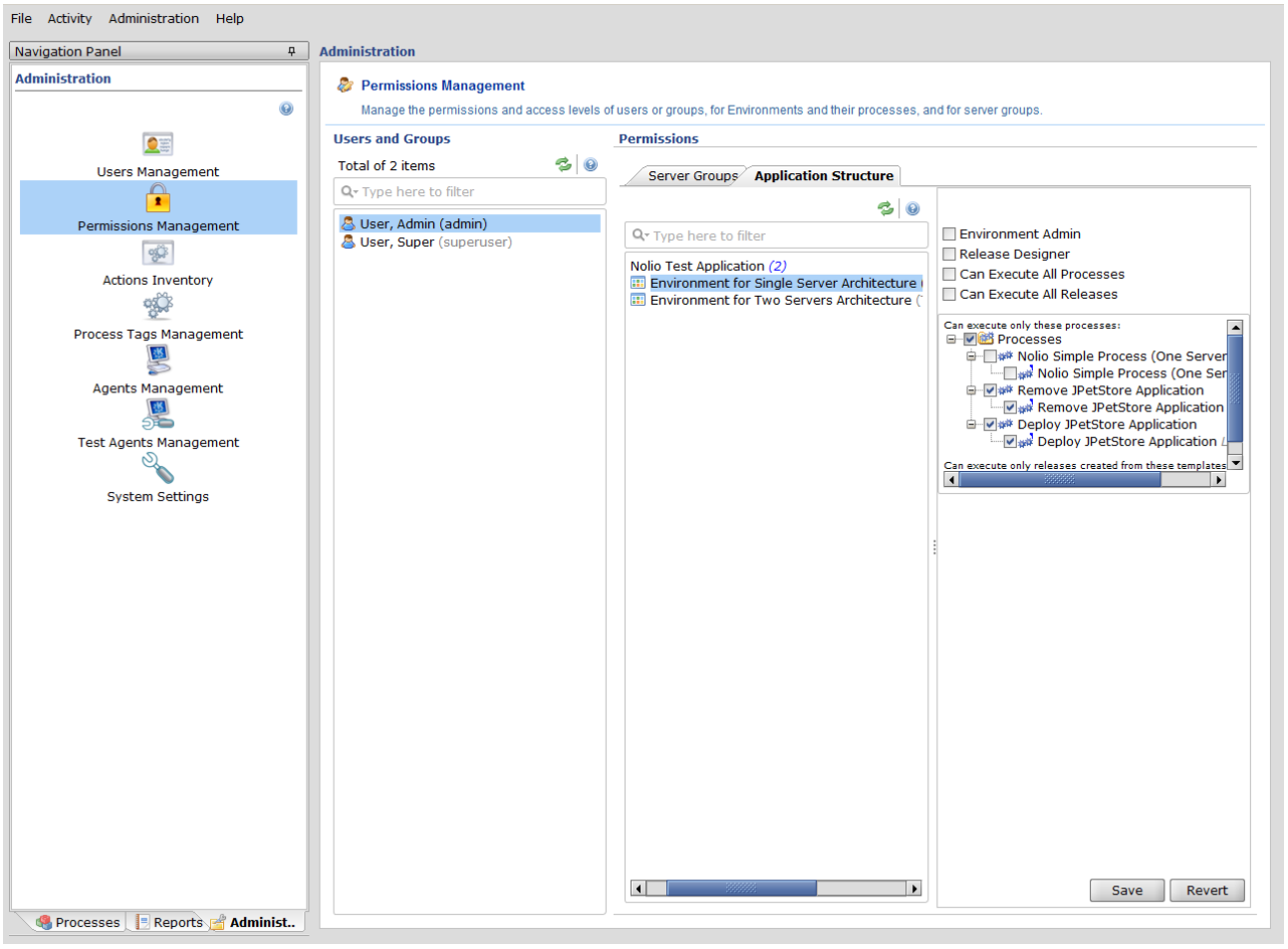
7. To allow the user to execute selected processes or administer an application environment, see *Granting Permissions for Environments* (on page 100).

Granting Permissions for Environments

Note: Application permission must be authorized for the target Environment before granting Environment permission. See *Granting Permissions for Applications* (on page 98).

To grant permissions on Environments:

1. In the **Administration** tab of the **Navigation Panel**, click **Permissions Management**. The **Permissions Management** page opens.
2. In the **Users and Groups** list, select the **user** or **user group** for which you want to grant permissions.
3. In the **Permissions** area, click the **Application Structure** tab. The **Application Structure** tab displays a tree containing all defined applications and environments.



4. Select the Application to which the target Environment belongs.
5. Verify that the **Can View Application** check box is selected for this Application.
   a. If not, select the **Can View Application** check box.
   b. Click **Save** to save the granted Application permission.

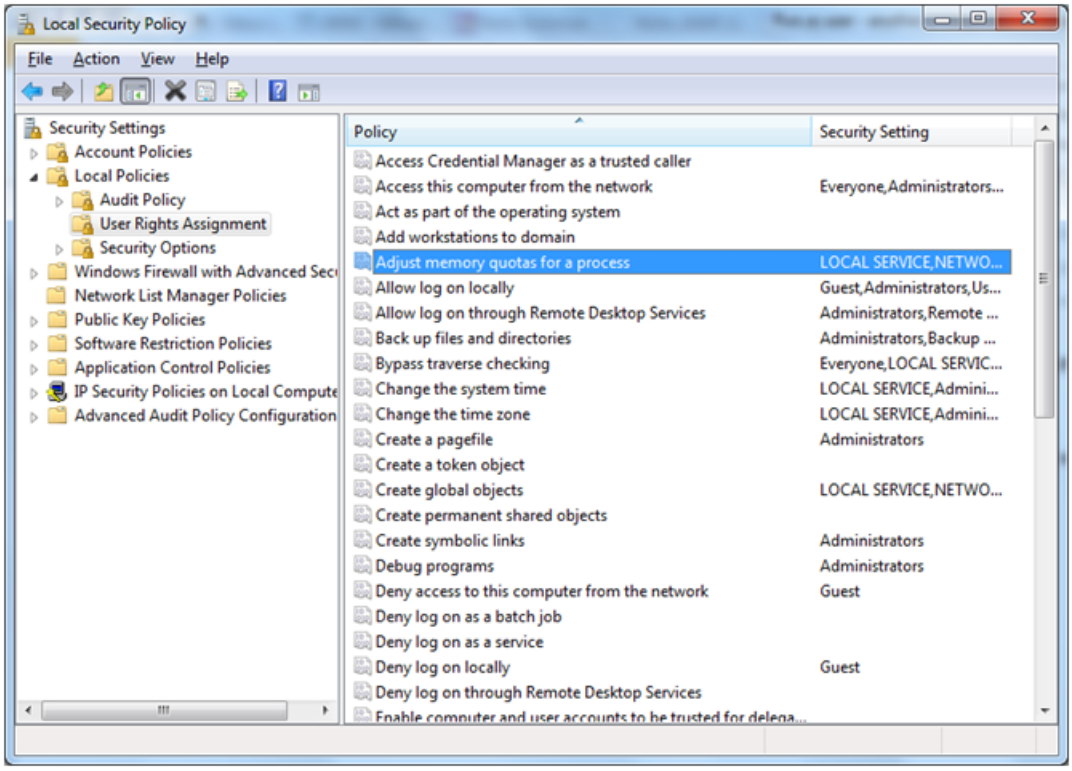
6. **Mark** the environment on which the **user** or **user group** should be granted permissions.
7. You may now grant the user or user group with:
    a. **Environment Admin**: to enable the user or user group to **add, modify,** and **delete** all **processes** of the selected environment, to assign Server Types, and to manage instances and links. This also enables the user to **execute** all **processes** of this environment and to create and modify releases within this environment.
    b. **Release Designer**: to enable the user to create and update releases from templates or ad hoc releases.
    c. **Can execute all processes**: to enable the user to execute all processes within this environment.
    d. **Can execute all releases**: to enable the user to execute all releases defined in this environment.
    e. **Can execute only these Processes**: to enable the user or user group to **execute** only a subset of the processes in the marked environment.
    f. **Can execute only releases created out of these templates**: to enable the user to execute releases created out of specific set of templates.
8. Click **Save**. The user or user group are granted with permissions on the processes belonging to the selected environments.

Assigning User Rights for 'Run as User' Option on Windows

On Windows, users who wish to run an action, process, or process subset, under the system privileges of a non-default user must have certain user rights assignments.

Upon request, set the following assignments in Administrative Tools> Local Security Policy> Security Settings> Local Policies> User Rights Assignments for the non-default user:

- **Replace a process level token**
- **Adjust memory quotas for a process**


Local Security Policy
File Action View Help
Security Settings
Account Policies
Local Policies
Audit Policy
User Rights Assignment
Security Options
Windows Firewall with Advanced Sec
Network List Manager Policies
Public Key Policies
Software Restriction Policies
Application Control Policies
IP Security Policies on Local Compute
Advanced Audit Policy Configuration
Policy
Security Setting
Access Credential Manager as a trusted caller
Access this computer from the network
Everyone,Administrators...
Act as part of the operating system
Add workstations to domain
Adjust memory quotas for a process
LOCAL SERVICE,NETWO...
Allow log on locally
Guest,Administrators,Us...
Allow log on through Remote Desktop Services
Administrators,Remote ...
Back up files and directories
Administrators,Backup ...
Bypass traverse checking
Everyone,LOCAL SERVIC...
Change the system time
LOCAL SERVICE,Admini...
Change the time zone
LOCAL SERVICE,Admini...
Create a pagefile
Administrators
Create a token object
Create global objects
LOCAL SERVICE,NETWO...
Create permanent shared objects
Create symbolic links
Administrators
Debug programs
Administrators
Deny access to this computer from the network
Guest
Deny log on as a batch job
Deny log on as a service
Deny log on locally
Guest
Deny log on through Remote Desktop Services

Chapter 10

Managing Agents and Test Agents

In This Chapter

This section explains how to add, edit, and delete **Agents**, **Test Agents**, and **Execution Servers.**

Note: These tasks require the administrative user to have authorization as **Superuser** or **Servers Administrator**. For information on roles, see *Understanding User Roles* (on page 80).

Overview

Nolio ASAP Release Automation manages the automation of multi-tier applications by channeling data and instructions to Nolio Execution Servers installed at Data Centers. The Execution Servers then provide the information to the Nolio Agents installed on each of the Data Center servers.

To enable Nolio ASAP Release Automation to channel data to Execution Servers and agents, you must first define the Execution Servers and agents in Nolio ASAP Release Automation.

Once you have defined the necessary Execution Servers and agents, organize the agents by adding them to **agent groups**. Each **agent group** represents a group of agents that have commonality.

In addition, you can specify which of the defined agents to serve as **test agents**. **Test Agents** are used for testing actions, flows, and processes while modeling applications in Nolio ASAP Release Automation. In order for an agent to serve as a test agent, it must belong to the **test agents group**.

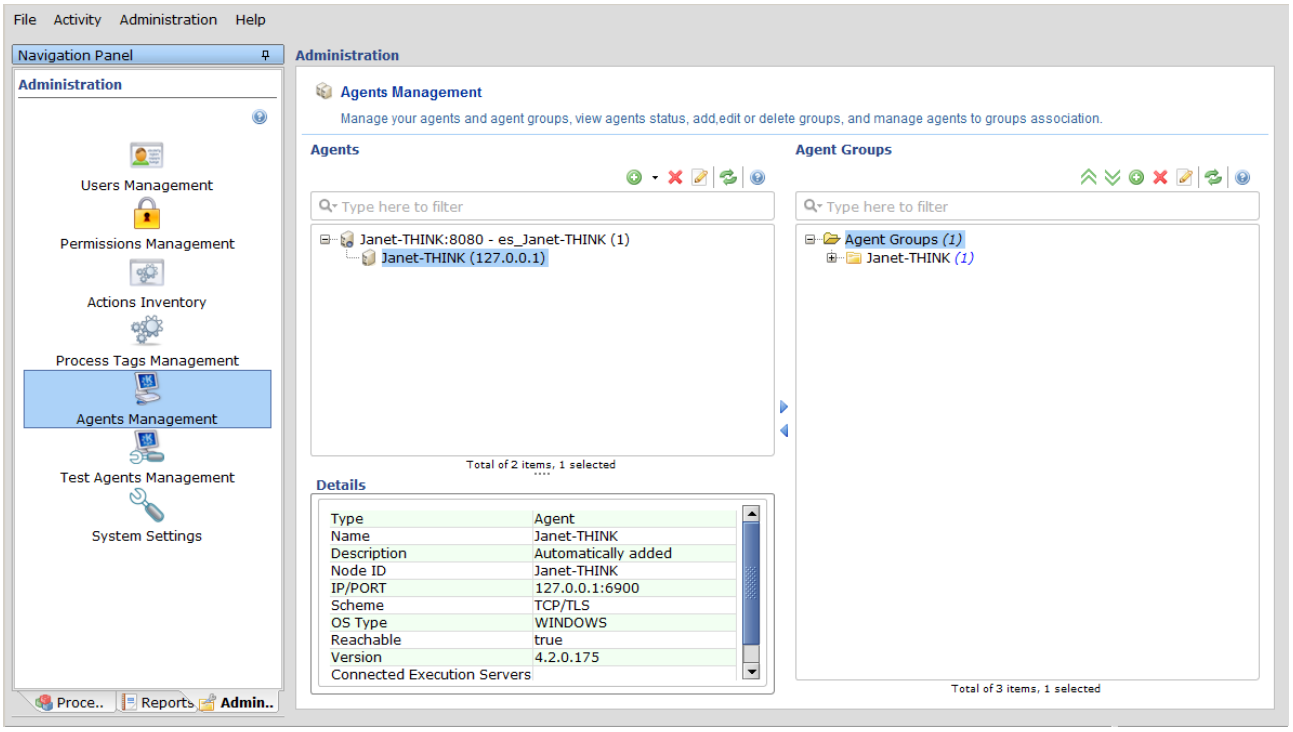
Execution Servers

This section describes how to add, edit, configure, and delete Agent Execution Servers. To change the assigned Execution Server for an Agent, see *Changing Execution Server for Agents* (on page 116). To collect logs for an Execution Server, see *Collecting Execution Server and Agent Logs* (on page 120).

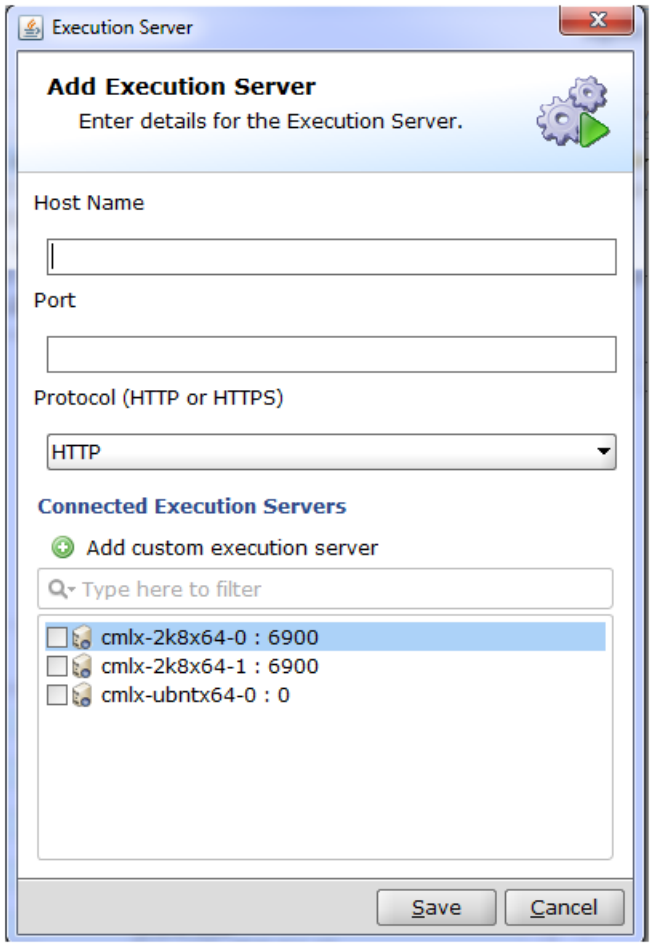
Adding and Editing Execution Servers

To add or edit an agent server:

1. In the **Administration** tab of the **Navigation Panel**, click **Agents Management**. The **Agents Management** page opens.



2. To **add** a new **Execution Server**, click in the **Agents** list, and then select **Execution Server**. The **Add Execution Server** window opens.



3. Complete the fields using the information in the following table and click **Save.**

4. Wait two minutes.

Table 7: Execution Server Fields

Field	Description	Example
Host Name or IP	Type the host name of the Execution Server.	Myhost1
Port	Type the port that should be used for communications between the Execution Server and the Nolio ASAP Release Automation Data Management.	8080
Protocol (HTTP or HTTPS)	Select the protocol to use for communication with Nolio ASAP Release Automation.	HTTPS
Connect Execution Servers	Select the Execution Servers to which this Execution Server should connect.	

To edit an existing Execution Server:

1. Select the desired **Execution Server** from the list, and click  . The **Edit Execution Server** window opens.
2. Edit the required parameters and click **Save**.

Configuring an Execution Server

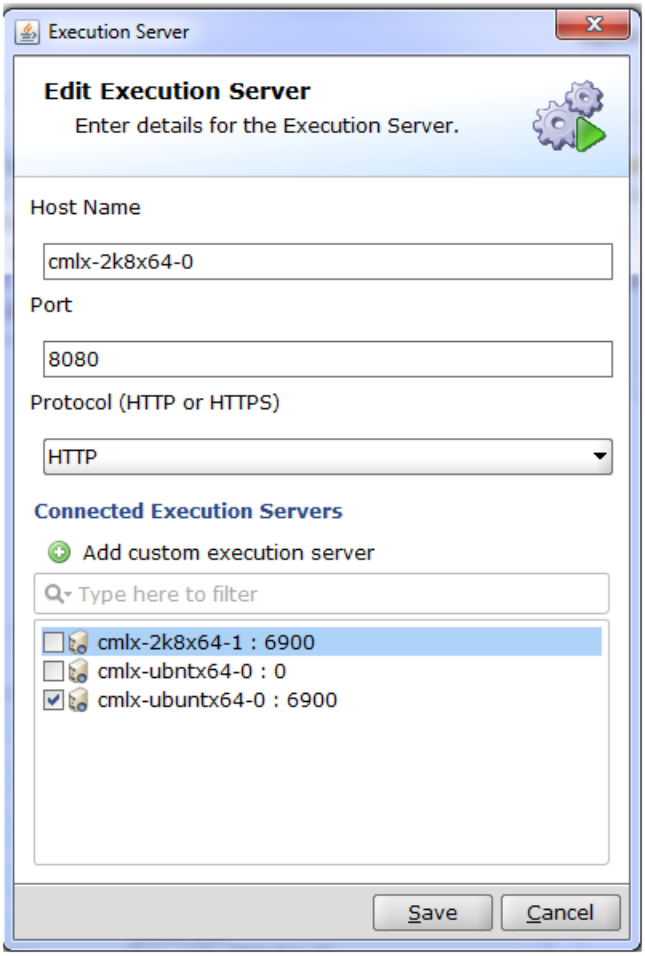
Typically, Nolio Agents reporting to an Execution Server do not recognize other Agents that are reporting to other Execution Server in the system.

In configurations requiring Agents to communicate with Agents that are reporting to different Execution Servers, create sibling connections between the Execution Servers.

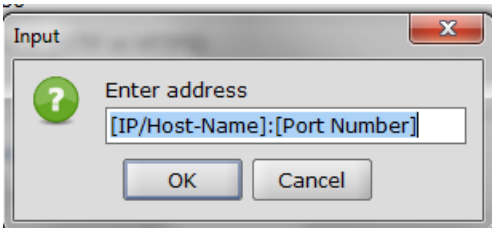
To configure an Execution Server to communicate with Agents reporting to different Execution Servers:

1. In the **Administration** tab of the Navigation Panel, click **Agents Management**.
2. Select the target Execution Server.

3. Right-click and select **Change execution server properties**. The Edit Execution Server dialog box opens.



4. Click  **Add custom execution servers**. The address Input dialog box opens.



5. Edit the Execution Server's Host-Name, or IP address, and Port Number following the specified format, for example, Nolio-ES2:8080. The default port is 8080.

   If the input does not conform to the specified format, a 'Malformed execution server Address message' opens.

6. Click **OK** to return to the Edit Execution Server dialog.

7. Click **Save** to save the configuration.

The Agent detail pane includes a list of the connected Execution Servers.

Deleting Execution Servers

To delete an Execution Server:

1. In the **Administration** tab of the **Navigation Panel**, click **Agents Management**. The **Agents Management** page opens.

2. In the **Agents** list, select the relevant Execution Server and click . The **Execution Server** is deleted. No confirmation message opens.

Nolio Agents

This section describes various operations on Nolio Agents and Agent Groups, including adding, editing, viewing, deleting, installing, updating, and upgrading.

Deleting Agents

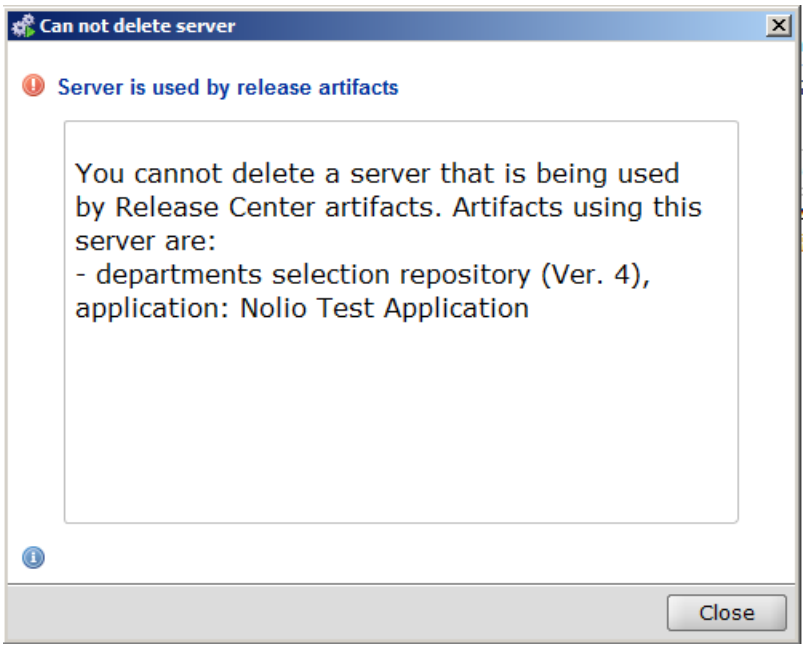
Note: If the agent server is used by a Release Operations Center artifact, you cannot delete the agent.

To delete an agent from the Nolio ASAP Release Automation Client UI:

1. In the **Administration** tab of the **Navigation Panel**, click **Agents Management**. The **Agents Management** page opens.

2. In the **Agents** list, select the desired agent and click .

If the agent is used by a Release Operations Center artifact, a message that the server cannot be deleted appears.



If the agent is not being used by an artifact, the agent is removed from the Client UI.

Note: No delete confirmation message appears.

If you do not uninstall an agent, it continues to be detected by the system, even after you have removed it.

Viewing Execution Server and Agent Details

To view details for an Execution Server or an Agent:

1. In the **Administration** tab of the **Navigation Panel**, click **Agents Management**. The **Agents Management** page opens.
2. In the **Agents** list, select the relevant **Execution Server** or **Agent**. The **Component Details** pane displays information on the Execution Server or Agent, as described in the following table.

Table 8: Execution Server Details Screen

Type	Nolio Execution Server
Name	cmlx-2k8x64-0
Description	Nolio Execution Server
Node ID	es_cmlx-2k8x64-0
IP/PORT	8080
Scheme	HTTP
OS Type	Windows Vista
Reachable	true
Version	3.3.0.156
Connected Execution Servers	[es_cmlx-2k8x64-1]
Additional Info	

Table 9: Agent Details Fields

Field	Description	Example
Type	One of the following types of agent server or agent. • **Nolio Execution Server** • **Nolio Agent**	Nolio Execution Server
Name	Name of the agent server or agent.	cmlx-2k8x64-0
Description	Description of the agent server or agent.	Nolio Execution Server
Node ID	Node name of the agent server or agent.	es cmlx-2k8x64-0
IP/PORT	• When viewing an agent server, this field displays the port used for communications between the agent server and Nolio ASAP Release Automation. • When viewing an agent, this field displays the IP address of the agent.	8080
Scheme	Protocol used for communication with Nolio ASAP Release Automation.	HTTP
OS Type	Operating system of the agent server or agent.	Windows
Reachable	Boolean value indicating whether the agent server or agent is reachable.	true
Version	Version ID of the installed Nolio ASAP Release Automation.	3.3.0.156
Connected Execution Servers	Execution Servers connected with this specific Execution Server	es cmlx-2k8x64-1
Additional Info	Additional Information.	Additional Information

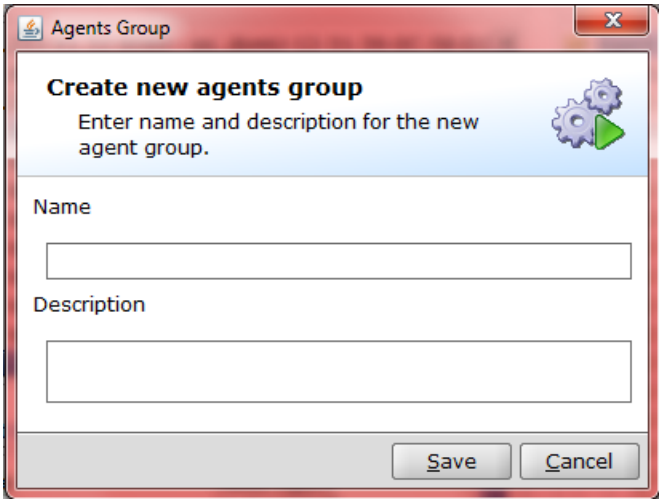
Adding and Editing Agent Groups

Agents are automatically placed in a group based on their Execution Servers. The agents may be moved into different groups.

To add or edit an Agent Group:

1. In the **Administration** tab of the Navigation Panel, click **Agents Management**. The **Agents Management** page opens.

2. To **add** a new **Agent Group**, click in the Agent Groups list. The **Create New Agents Group** window opens.



3. Complete the fields using the information in the following table and click **Save**.

Table 10: Agent Group Fields

Field	Description	Example
Name	Type a name for the agent group	AgentGroup1
Description	Type a description for the agent group	First set of agents

To edit an existing agent user group:

1. Use the following icons to control how the agents are listed within the **Agent Groups** list:

   a. Click to expand all Agent Groups.

   b. Click to collapse all Agent Groups.

2. Select the relevant agent group in the **Agent Groups** list, and click . The **Edit Agents Group** window opens.

3. Complete the fields using the information in the Agent Group Fields table and click **Save**.

Deleting Agent Groups

To delete an Agent Group:

1. In the **Administration** tab of the **Navigation Panel**, click **Agents Management**. The **Agents Management** page opens.

2. In the **Agent Groups** list, select the relevant agent group and click  and confirm the operation. The **Agent Group** is deleted.

Adding Agents to Agent Groups

To add an Agent to an Agent Group:

1. In the **Administration** tab of the Navigation Panel, click **Agents Management**. The **Agents Management** page opens.
2. In the **Agents** list, select the relevant agent.
3. In the **Agent Groups** list, select the agent group to which you want to add the agent and click  . The agent is added to the agent group.

Removing Agents from Agent Groups

To remove an agent from an Agent Group:

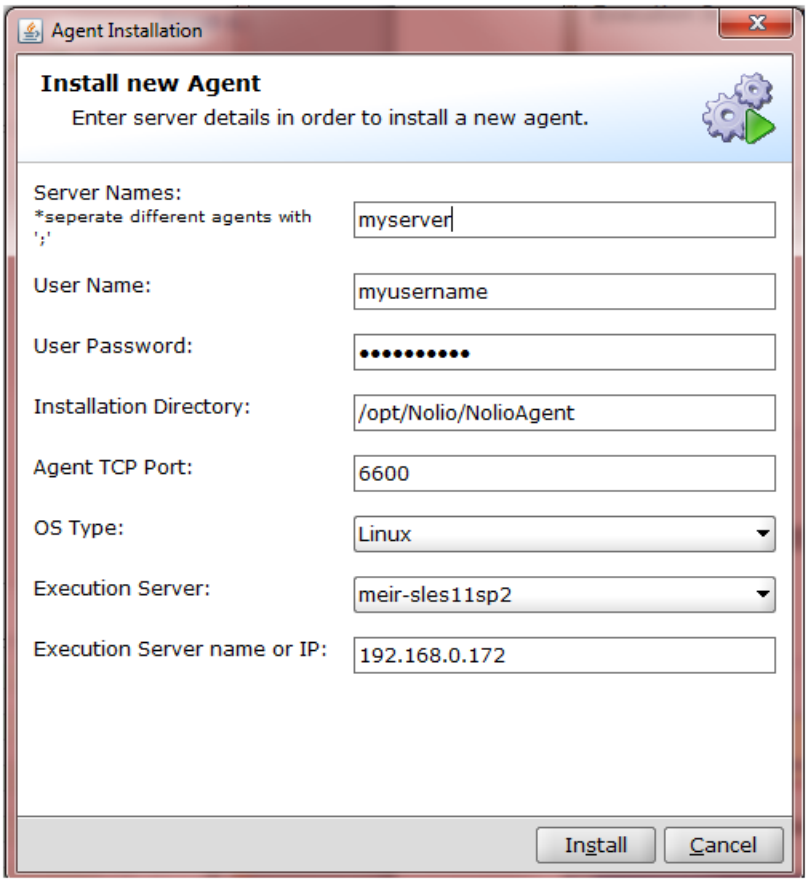
1. In the **Administration** tab of the **Navigation Panel**, click **Agents Management**. The **Agents Management** page opens.
2. In the **Agent Groups** list, under the relevant agent group, select the agent you want to remove and click  . The agent is removed from the agent group.

Installing New Agents and Adding Agents to Execution Server in Remote Install

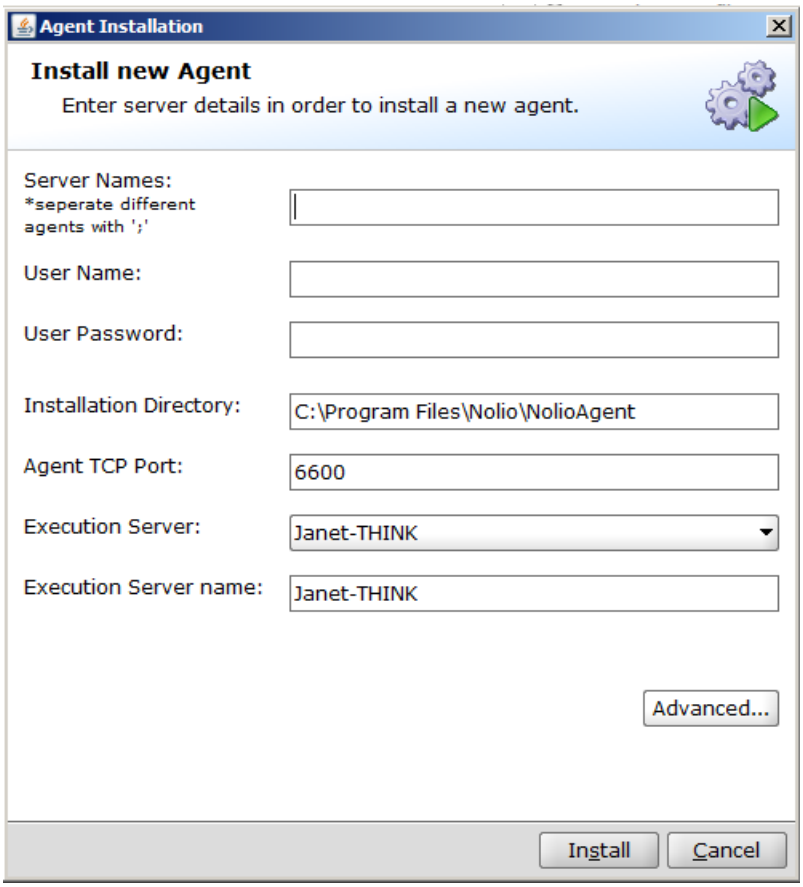
To install new agents and add them to an Execution Server:

1. In the **Administration** tab of the **Navigation Panel**, click **Agents Management**. The **Agents Management** page opens.
2. Click  and from the drop-down menu select **Install Agent on a Windows server** or **Install Nolio Agent on a Unix server (SSH)**.

If Unix was selected, the following **Agent Installation** window opens:



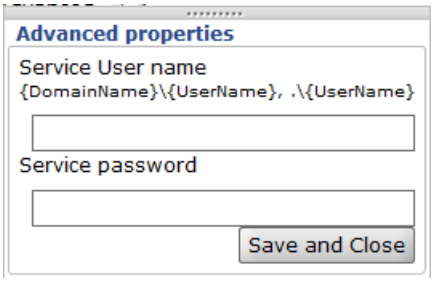
If Windows was selected, the following **Agent Installation** window opens:



Note: **Execution Server Name** represents the execution server name or IP address to be used by the agent during the initial connection to its execution server. This name or IP should be accessible and known to the installed agent.

3. Enter the new server required information. You may enter more than one server at a time, separating them with semicolons (;).

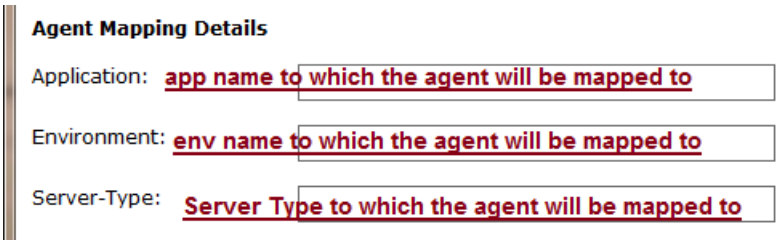
4. If Windows was selected, you can set a service user name and password by clicking **Advanced**. The Advanced properties dialog box opens.



   a. Enter the **Service User name** and **Service password** values.

   b. Click **Save and Close**.

5. If the System Setting parameter **DYNAMIC_AGENT_MAPPING_ENABLED** is set to **TRUE**, the Install new Agent window also displays boxes for entering the Application, Environment, and Server Type to associate with the server agents.



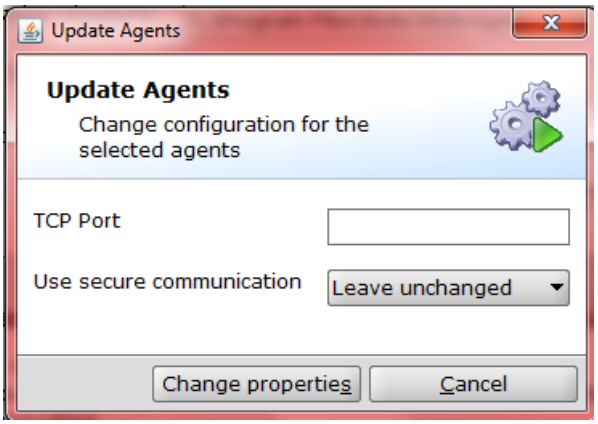
6. Click **Install.**

Additional information on how to install a new agent can be found in *Remote Agent Installation* (on page 52).

Updating Agents

To update configuration properties of an installed Agent:

1. In the **Administration** tab of the **Navigation Panel**, click **Agents Management**. The **Agents Management** page opens.
2. Select and right-click the agent you want to update.
3. Select **Change Properties of Selected Agents**. The **Update Agents** window opens.



4. Fill in the parameters that you want to change and click **Change properties.** Fields left blank keep their current settings.

Changing Execution Server for Agents

You can change the Execution Server to which agents report.

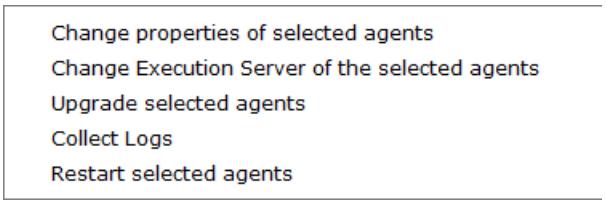
Notes:

- Before updating the Execution Server for an agent, verify that the agent is not currently participating in any deployment process.
- The Nolio Agent restarts after this process.

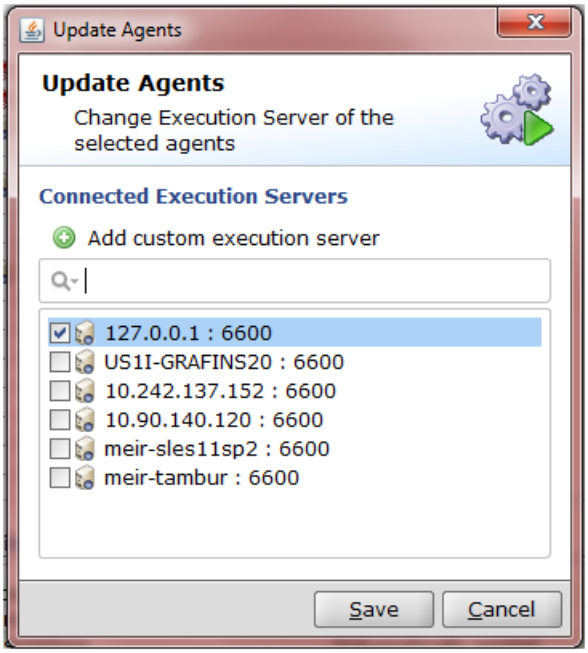
To change the Execution Server for specified Agents:

1. In the **Administration** tab of the Navigation Panel, click **Agents Management**. The Agents Management page opens.
2. In the **Agents** list, select an agent or agents.

   To select multiple agents, press CTRL while highlighting target agents.
3. Right-click and select **Change Execution Server of the selected agents**.



   The Update Agents Change Execution Server of the selected agents dialog opens.



4. Select the Execution Servers to which the agents will report.

Note: If more than one Execution Server is selected, the Agent reports to the first one. The order cannot be predefined.

5. Click **Save**.

   The agents connected to the Execution Server automatically restart after their current deployments complete.

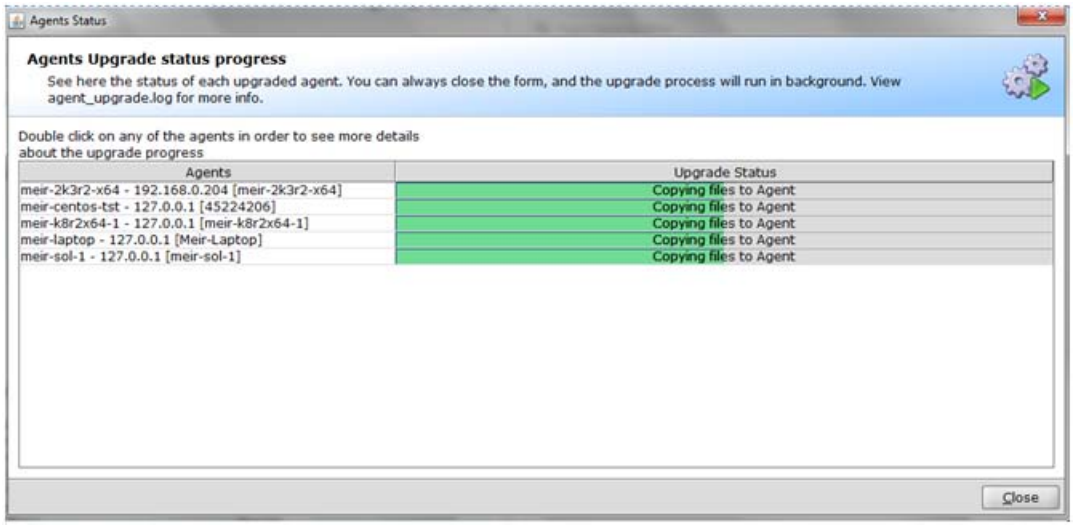
Upgrading Agents

This option enables customers to upgrade their previous version of the Nolio environment. Instead of upgrading each individual client, you may select all agents and upgrade them automatically.

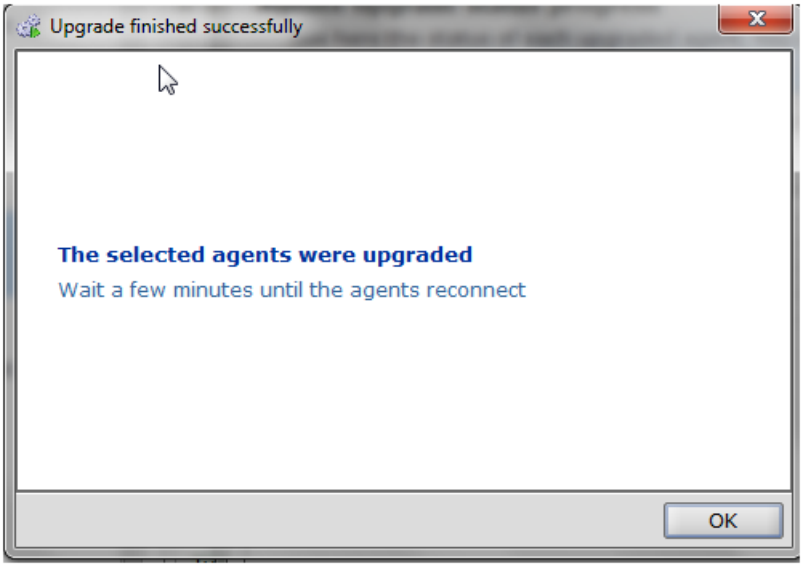
Important Note: Upgrading to ASAP 4.5.1 from the UI is supported from versions 3.3.x only. For earlier versions, contact *Nolio Technical Support* (on page 11).

To upgrade agents:

1. In the **Administration** tab of the **Navigation Panel**, click **Agents Management**. The **Agents Management** page opens.
2. In the **Agent** list, select the **Agents** you want to upgrade.
3. Right-click and select **Upgrade selected agents**. All selected agents are upgraded to the newest version of the Nolio environment.
4. When the Agents Upgrade process begins, an Agents Status window opens and displays the upgrade progress. See *Understanding the Upgrade Status Progress* (on page 118).



5. When the Agents Upgrade process completes, an 'Upgrade finished successfully' message opens.



Important Note: The upgrade process of a previous Nolio environment requires an Upgrade of all Nolio components, in the following order: Data Management Server, Execution Server(s) and Nolio Agent(s). The upgrading process for the Nolio Data Management Server and Execution Server is explained separately in the zipped upgrade instructions file.

Understanding the Upgrade Status Progress Display

The list of agents being upgraded appears in the left column. The progress and the status of the upgrade appear in the right column.

The progress is displayed by a green bar which moves across the column row as the upgrade process proceeds through the job steps. The sequence of possible successful job step messages is:

- Upgrade started
- Copying files to Execution Server
- Copying files to agent
- Restarting agent
- Upgrade succeeded

If an upgrade step fails, an error message for the step appears in the status column and the cell will have a red background. The likely sequence of failure messages is:

- Failure to copy file to Execution Server
- Failure to copy files to agent
- Failed restarting agent
- Upgrade failed

If the upgrade includes multiple agents and fails, an additional popup opens with the message 'At least 1 agent failed to upgrade'. At any time during the upgrade process, you may click on a row and a new popup opens a message with additional information. You can close the Agents Status window during the upgrade process. The job will continue to run in the background.

Nolio Test Agents

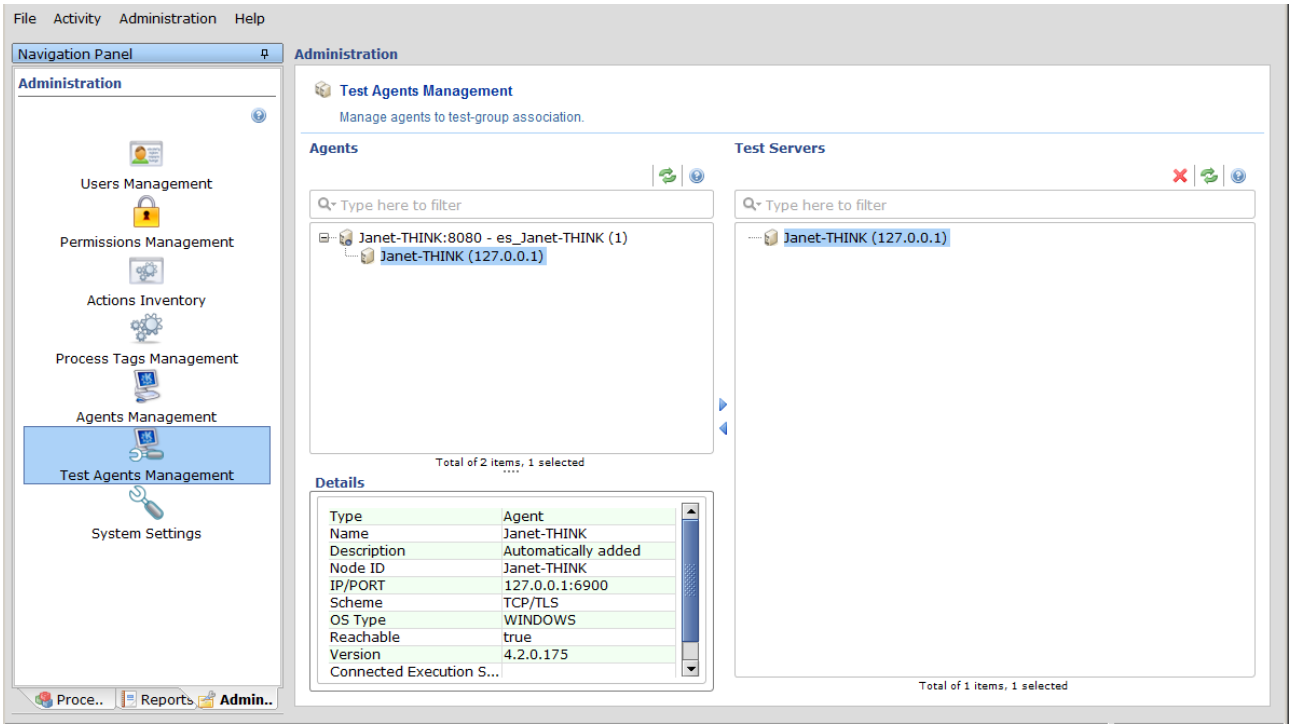
This section describes how to add and remove agents from Test Agents groups.

Adding Agents to the Test Agents Group

Test Agents are used for testing actions, flows, and processes while modeling applications in Nolio ASAP Release Automation.

To assign an Agent to a Test Agents group:

1. In the **Administration** tab of the **Navigation Panel**, click **Test Agents Management**. The **Test Agents Management** page opens.



2. Select an agent from the **Agents** list, and click . The agent is added to the Test Agents group.

Removing Agents from the Test Agents Group

To remove an Agent from the Test Agents group:

1. In the **Administration** tab of the **Navigation Panel**, click **Test Agents Management**. The **Test Agents Management** page opens.
2. Select the agent you want to remove from the **Test Agents Group** list and click . The agent is removed from the Test Agents group.

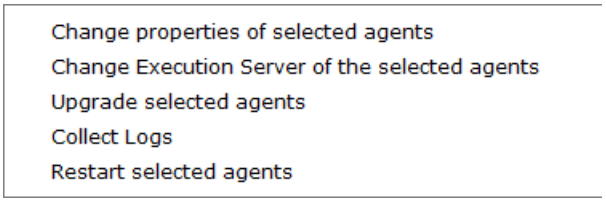
Administration Tasks on Agents or Execution Servers

The following topics describe general administration tasks on Agents or Execution Servers.

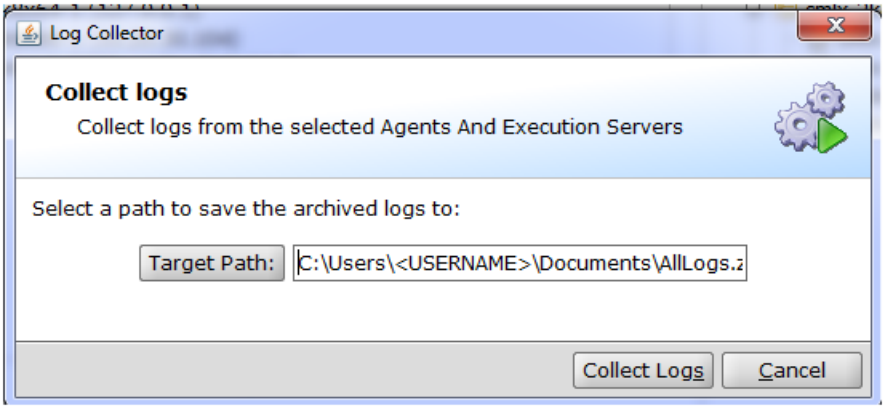
Collecting Execution Server and Agent Logs

To collect logs from an Execution Server or Agent:

1. In the **Administration** tab of the Navigation Panel, click **Agents Management**. The Agents Management page opens.
2. In the **Agents** list, select an Execution Server or Agent.
3. Right-click and select **Collect Logs**.



The Log Collector dialog box opens.



4. Click the **Target Path** button to open a browser to locate and select the path for saving archived logs; or in the **Target Path** box, enter the path.

5. Click the **Collect Logs** button to start the collection process.

Note: Collect Logs may take several minutes.

Restarting an Agent

From the ASAP Client UI, you can restart Nolio Agents installed on a Windows machine.

To restart Agents on a Windows machine:

1. In the **Administration** tab, click **Agents Management**.
2. Select a Nolio Agent.
3. Select additional agents while pressing the CTRL button.
4. Right-click and select **Restart selected agents**.

Note: The right-click restart agent option is **not** available on non-Windows machines.

Chapter 11

Managing Actions Inventory

In This Chapter

This section explains how to manage action templates in the Nolio Application Release Automation actions inventory.

Note: These tasks require the administrative user to have authorization as **Superuser** or **General Administrator**. For information on roles, see *Understanding User Roles* (on page 80).

Detailed information on individual actions can be found in the *Nolio Application Release Automation Actions Reference Guide*.

Overview

When modeling a server-based application in the **Modeling** window, it is necessary to define actions that are available for modeling the application's deployment.

An action is defined by selecting a predefined **action template** from the Nolio Application Release Automation's **Actions Inventory** and then modifying the action as desired.

The **Actions Inventory** displays the action templates organized in **categories**, where each category represents a group of action templates that have a common usage. This enables you to quickly locate the action templates you need. Nolio Application Release Automation automatically includes several predefined categories of action templates. You can change the category to which a specific action template is assigned. You can also add new categories, modify existing categories, or delete categories as needed. Together, the predefined action templates and action categories make up the **actions inventory**.

Nolio ASAP Release Automation obtains the actions inventory from a default library that is provided with Nolio Application Release Automation and is located on the Nolio Center Server. The actions included in the default library are described in detail in the *Nolio Application Release Automation Actions Reference Guide*. If desired, you can purchase or implement libraries of custom action templates, and use these libraries instead of or in addition to the default library.

For instructions on implementing a custom actions library, see the *Nolio Application Release Automation Custom Actions SDK*. New libraries must be loaded in Nolio ASAP Release Automation. See *Reloading Actions Libraries*. (on page 127)

Note: When working with action packs, preliminary configuration tasks may be required before using the packs. These preliminary tasks are described in the *Nolio Application Release Automation Action Reference Guide* under the specific action pack. For example, preliminary configuration tasks are required for each Nolio Agent machine that will execute WebSphere or WebLogic actions.

Managing Existing Actions

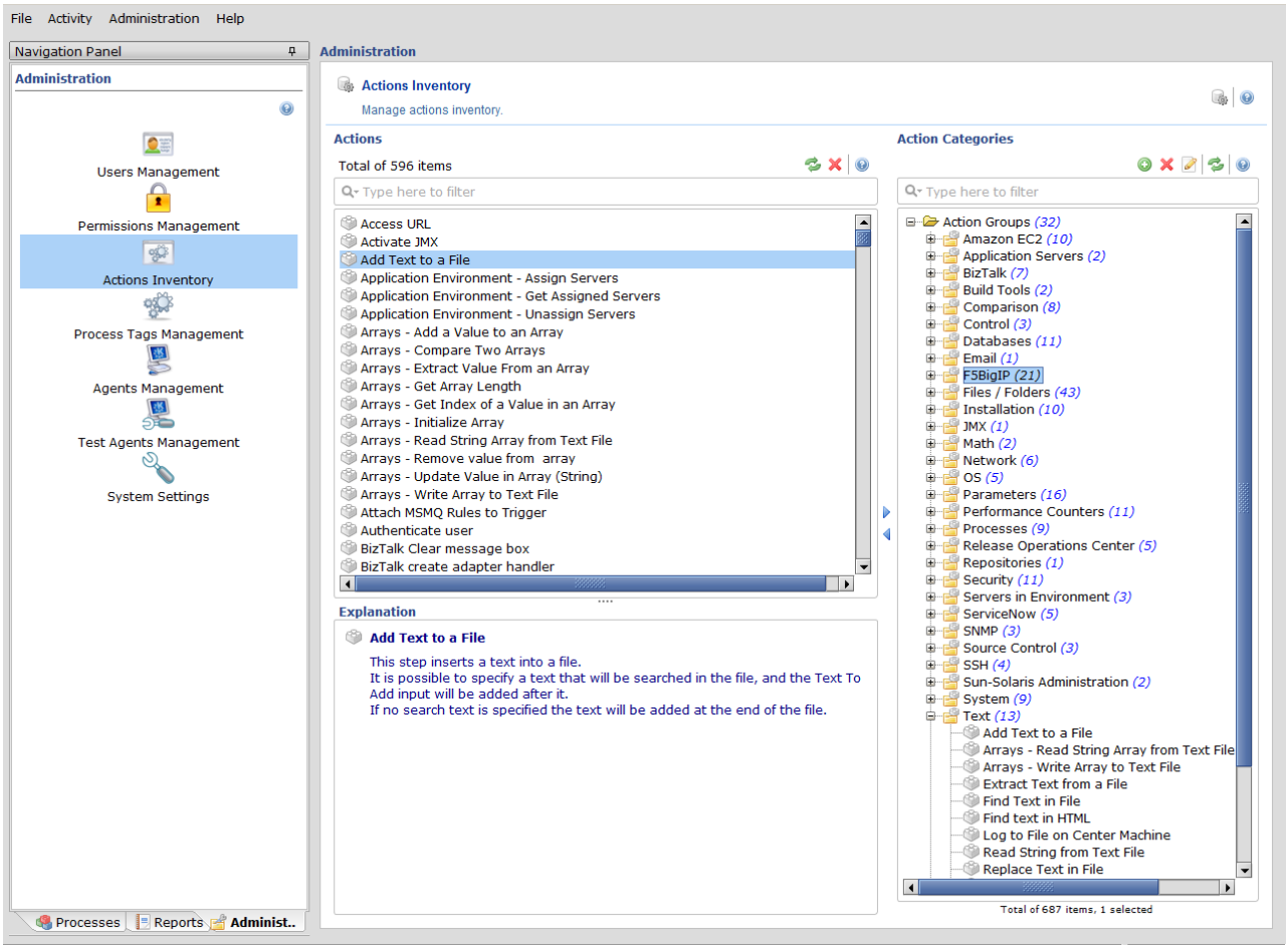
This section describes how to manage existing actions, including adding, editing, and deleting action categories, as well as adding and removing action templates from action categories.

Adding and Editing Action Categories

The actions templates are already divided into logical categories. If you prefer to group them differently, they may be reorganized into different categories.

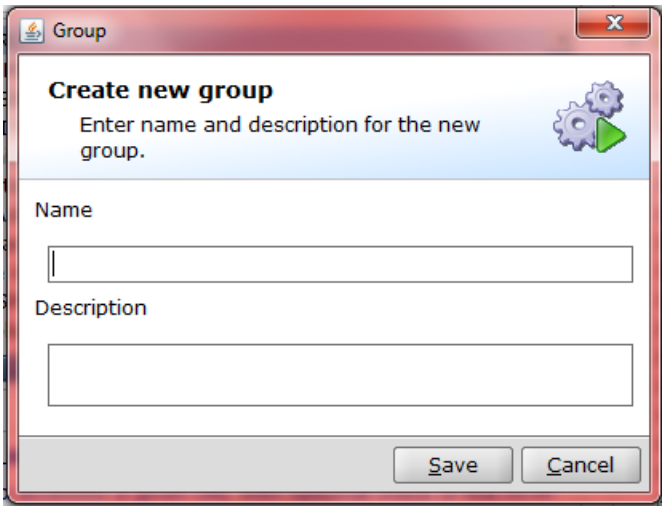
To add or edit an action category:

1. In the **Administration** tab of the **Navigation Panel**, click **Actions Inventory**. The **Actions Inventory** page opens.



2. To **add** a new category, select the relevant parent node in the **Action Categories** list and click . The **Create new group** window opens.

3. Complete the fields using the information in the following table and click **Save**.



4. To **edit** an existing category, select the relevant category in the **Action Categories** list, and click . The **Rename group** window opens.

5. Complete the fields using the information in the following table and click **Save**.

Table 11: Action Category Fields

Field	Description	Example
Name	Type a name for the category	Preliminary Checks
Description	Type a description of the category	Actions related to preliminary checks

Deleting Action Categories

To delete an action category:

1. In the **Administration** tab of the **Navigation Panel**, click **Actions Inventory**. The **Actions Inventory** page opens.

2. Select the category you wish to **delete** from the **Action Categories** list.

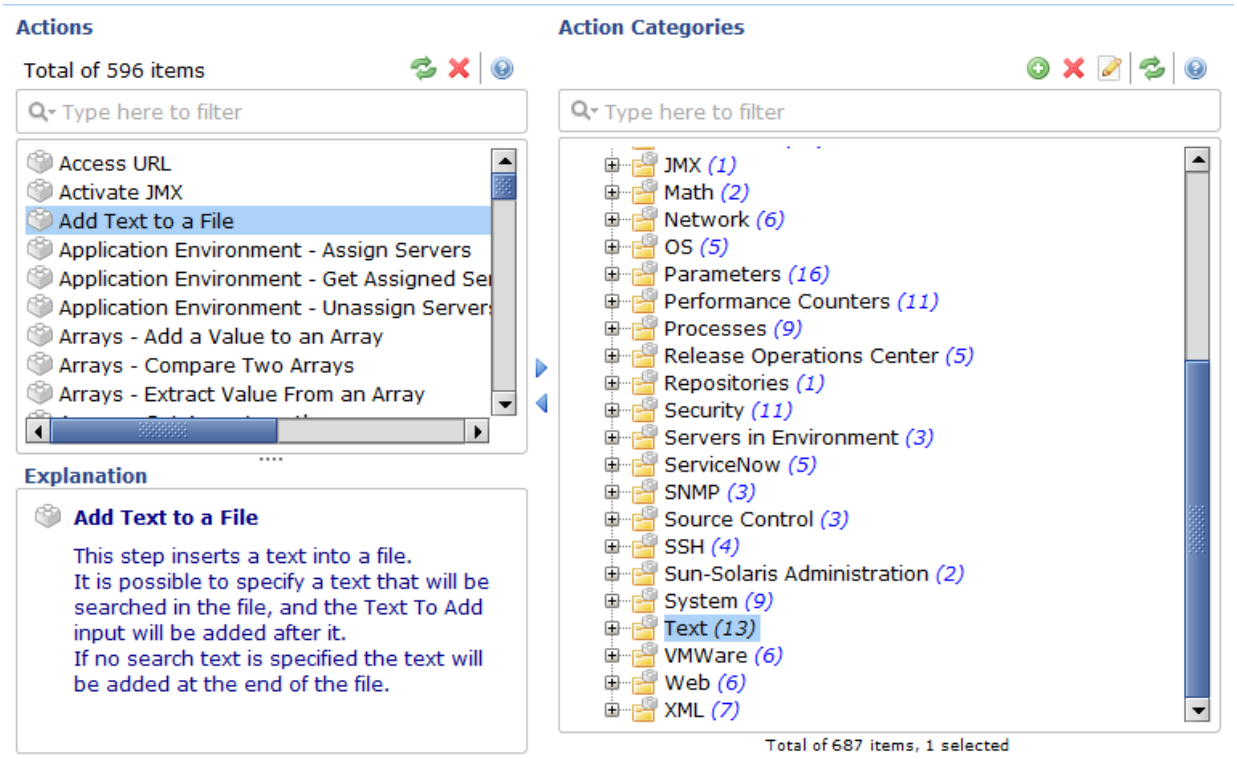
3. Click and confirm the operation. The category is deleted.

Note: To restore a deleted category, see *Reloading Actions Libraries* (on page 127).

Adding Action Templates to Action Categories

To add a new Action Template to existing Actions Categories:

1. In the **Administration** tab of the **Navigation Panel**, click **Actions Inventory**. The **Actions Inventory** page opens.
2. Select the relevant action template from the **Actions** list. The **Explanation** pane, shown in the following figure displays a description of the selected action template.



3. In the **Action Categories** list, select the category to which you want to add the selected action template and click . The action template is added to the category.

Removing Action Templates from Action Categories

To remove an action template from an action category:

1. In the **Administration** tab of the **Navigation Panel**, click **Actions Inventory**. The **Actions Inventory** page opens.
2. In the **Action Categories** list, expand the relevant category, and select the action template you want to remove from this category.
3. Click . The action template is removed from the category.

Adding Actions

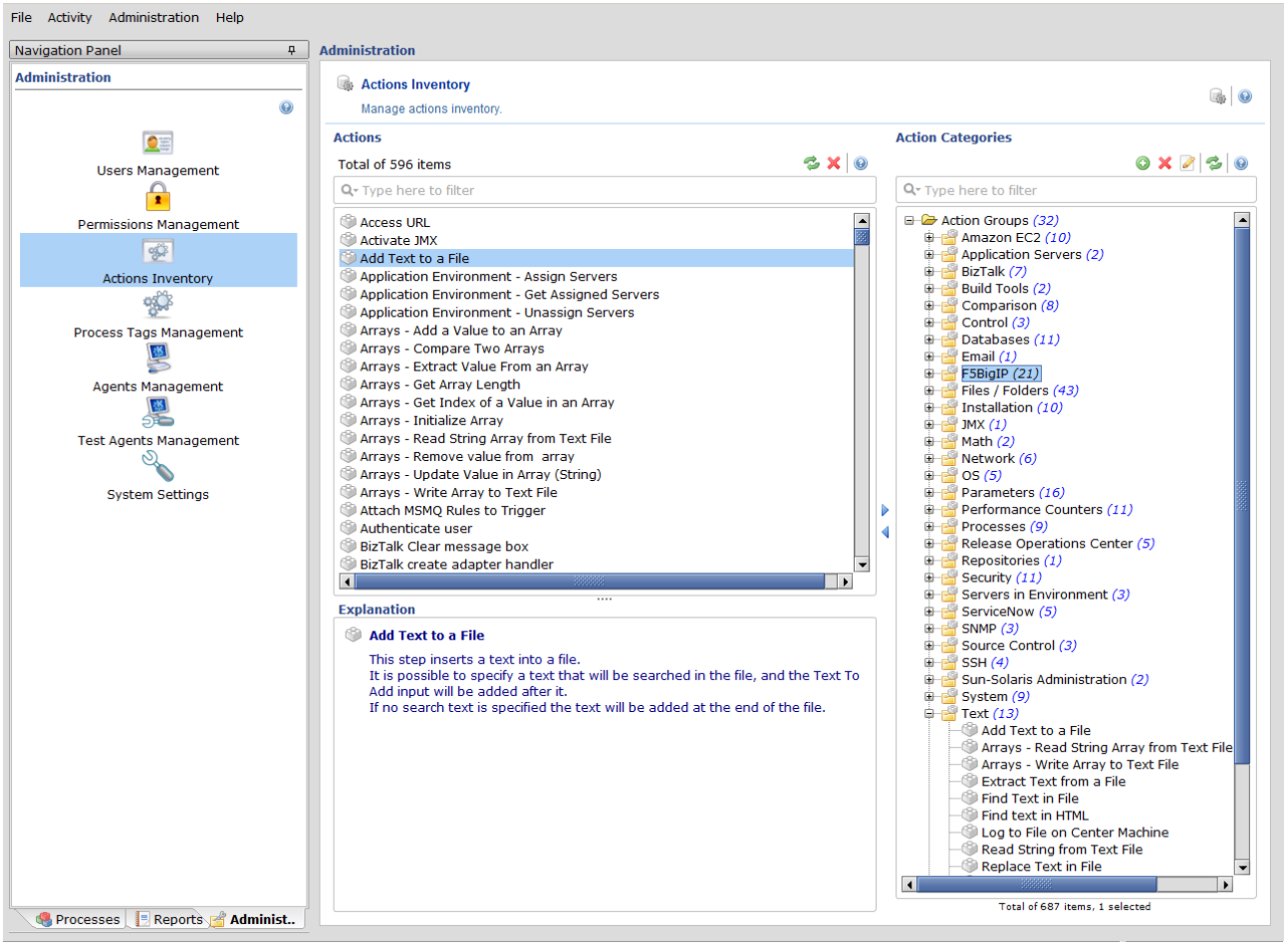
Customers can create and add custom actions to the Nolio ASAP Release Automation action pack sets using the *Nolio Application Release Automation Custom Actions SDK*.

Actions, other than those provided by Nolio, are defined in a **customerActions** library. **CustomerActions** libraries are loaded into Nolio ASAP Release Automation using the Manage Locations function. See *Reloading Actions Libraries* (on page 127).

Deleting Actions

To delete an action:

1. In the **Administration** tab of the **Navigation Panel**, click **Actions Inventory**. The **Actions Inventory** page opens.



2. In the Actions pane, select the action to delete.

3. Click the delete icon.

   The Delete Action confirmation dialog box opens.

4. Click **Yes** to complete the deletion.

Managing Action Template Libraries

The action inventory is comprised of all action template libraries defined in Nolio Application Release Automation, including Nolio-supplied libraries and customer-developed libraries. To define a library, you must specify its location on the Nolio Center Server. To develop a custom library, see the *Nolio Application Release Automation Custom Action SDK*.

This section describes how to reload libraries.

Reloading Action Libraries

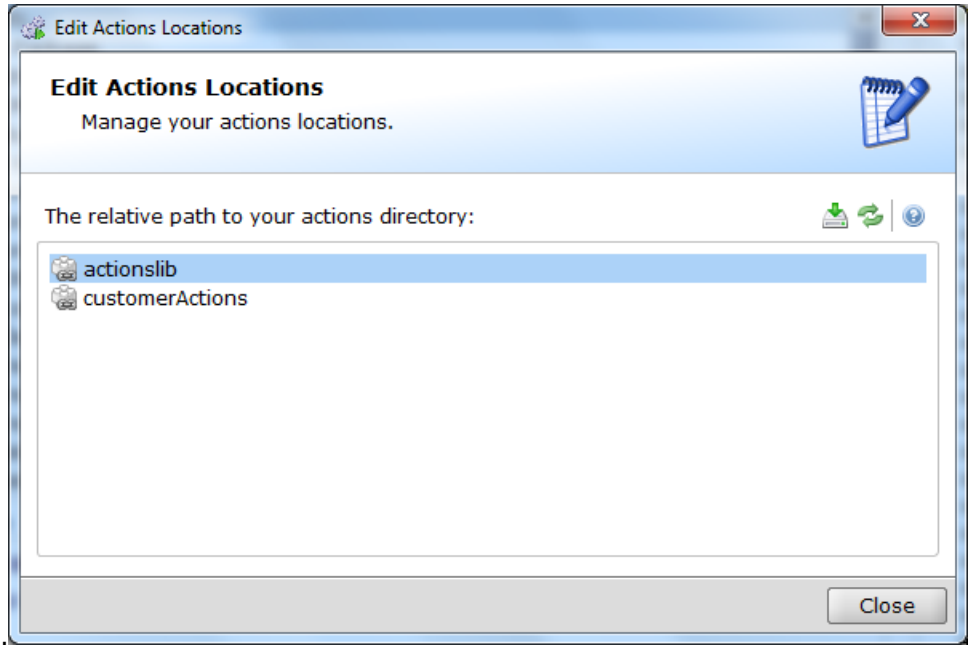
You can reload all of the defined action libraries to Nolio ASAP Release Automation. This option is used when:

- New libraries with new templates have been received from Nolio for the **actionslib.**
- New custom templates have been added to the **customerActions** library.
- After a system upgrade.

Note: Customer-defined action libraries residing in the `<Nolio Home Directory>/customerActions` folder are detected automatically by the Manage Locations function.

To reload all defined libraries:

1. In the **Administration** tab of the **Navigation Panel**, click **Actions Inventory**. The **Actions Inventory** page opens.
2. In the upper-right corner of the page, click  . The **Edit Actions Location** window opens with a list of defined library locations.



3. Select the library, or libraries, to reload:

   a. To reload a single actions library, select a library.

   b. To reload multiple action libraries at once, hold the CTRL key down while selecting libraries.

4. Click . The selected libraries are reloaded to Nolio ASAP Release Automation.

   A message with the location of the currently loading library opens in the Edit Actions Locations dialog box, as well as the Loading actions library progress bar and message. At the end of a successful reload, the following message opens.

   Operation completed successfully

5. Click **Close** to close the Loading actions library window.

6. Click **Close** to close the Edit Actions Locations dialog.

Note: The reload actions function completes one library at a time. If you need to reload actions from both libraries, execute the reload on each library separately.

Chapter 12

Managing Published Processes

In This Chapter

This section explains how to view, promote, and delete published processes.

Note: These tasks require the administrative user to have authorization as **superuser**. For information on roles, see *Understanding User Roles* (on page 80).

Overview

Once an application has been modeled in the **Modeling** window, the relevant processes must be **published** to the **Control** window, where they can be assigned to an environment. The processes are then ready for implementation on your organization's servers.

As part of the working process with Nolio ASAP Release Automation, the personnel that design and execute actions and flows are able to test their work using Test Agents. Before a process can be implemented, a user with **Superuser** or **Security and Permissions Administrator** authorization must set the permissions for the user who is to execute the new processes. See *Granting Permissions* (on page 98).

During the publishing process, it is possible to create a tag for the process.

Understanding Process Tagging

Unique tags allow you to keep and execute different versions of a process. For example, you may wish to maintain multiple versions that have been modified for different customers or products.

Following are the methods for managing process tags:

- Tagging a process:
  - When publishing a process. See *Publishing a Process and Creating a Process Tag* (on page 130).
  - After publishing a process. See *Tagging Latest Published Process* (on page 138).
- Renaming a previously tagged process. See *Renaming Published Process Tags* (on page 139).
- Deleting a tagged process. See *Deleting Published Processes* (on page 140).

Published Processes are displayed as follows:

- After assignment to an environment, tagged and untagged versions of published processes are displayed in the Environments tab tree.
- Tag information for the latest and previously tagged processes is managed in the Administration tab.
- If the last process was not tagged during publishing, it is labeled as '*Latest*'.
- If the last process was tagged during publishing, it is labeled with the provided tag followed by 'Latest', such as '*My Tag 1 Latest*'.
- If a process was tagged during publishing, in the Administration tab there is also be a duplicate system-tagged entry in the Process Tags table with ID 'Latest'.

Publishing Processes and Creating Process Tags

After you have completed process creation and testing, you can now:

1. Publish the process.

   Publishing a process creates a single version of the process labeled 'Latest'.

   When publishing, you can also assign an optional tag to the process. An additional version of the process with your tag is created. Your newly tagged process and the system-defined 'Latest' process are the same.

   Nolio ASAP Release Automation stores multiple process tags up to a system-defined limit. See *Changing Maximum Number of Process Tags* (on page 146) in the *Nolio Application Release Automation Installation and Administration Guide*.

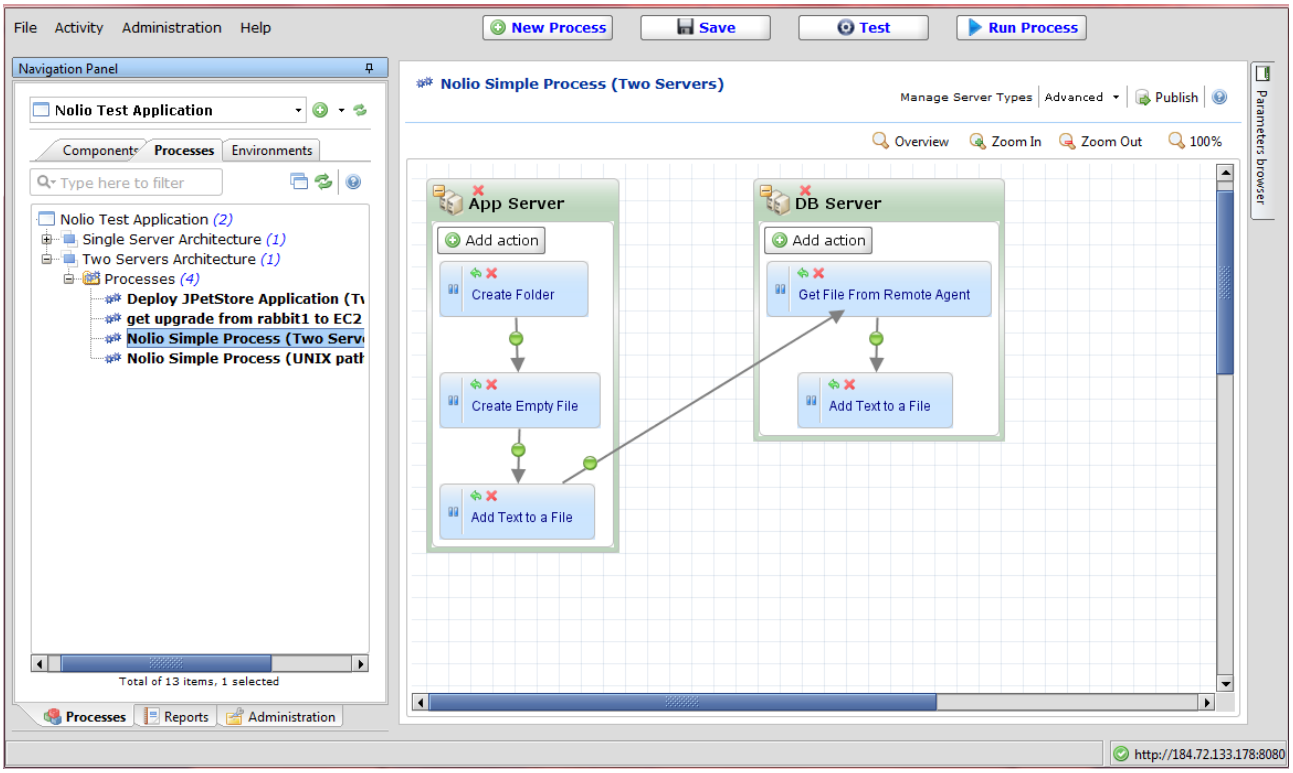
2. Assign an environment to the 'Latest' published process or a published process with a specific tag.

3. Execute the process.

Note: Running the published process from the Environment tab while highlighting the untagged process invokes the execution of the process tagged '*Latest*' (most recently updated). When triggering the execution of this process from the Processes tab, execution is also of the '*Latest*' version of the process.

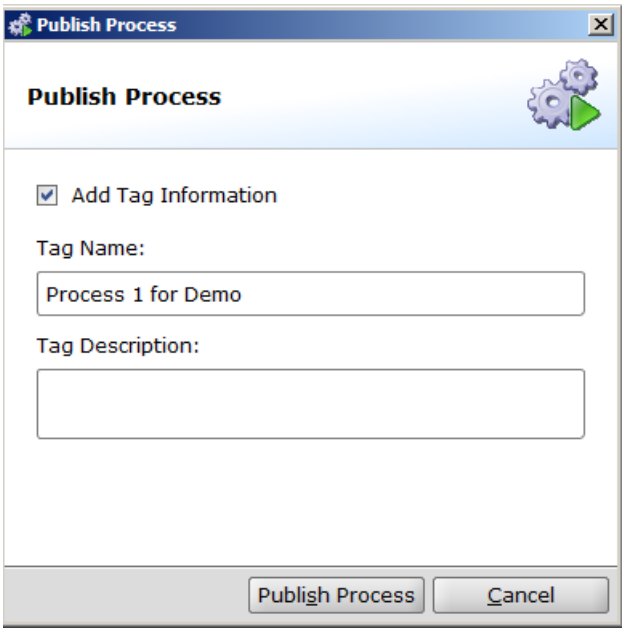
To publish a process:

1. In the **Processes** tab of the **Navigation Panel**, click the **Processes** tab. The **Processes** page opens.



2. Expand the **Architecture** node for the process you wish to publish and select the required process.

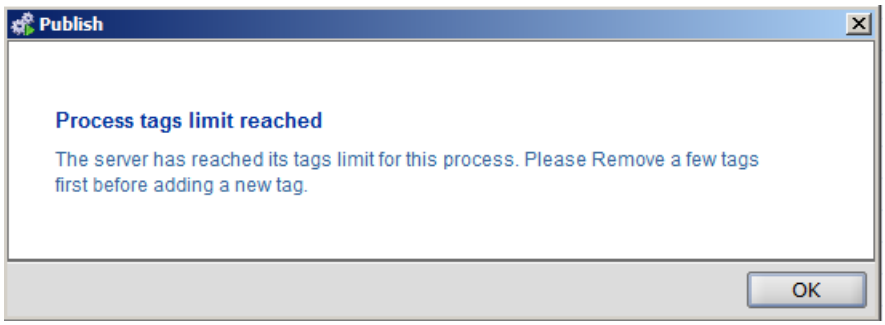
3. Click Publish. The Publish Process dialog box opens.



4. If you want to create a tag for the process at this time, select the **Add Tag Information** check box and enter the **Tag Name** and **Tag Description** as required.

   a. If the tag name entered already exists, you receive an error message that
   A tag with this name already exists. Enter a unique tag name.

   b. If the system-installed maximum number of tags of 5 has been reached, you receive an error message and the following instructions:



Note: The process publishes, but without a tag.

Click **OK.**

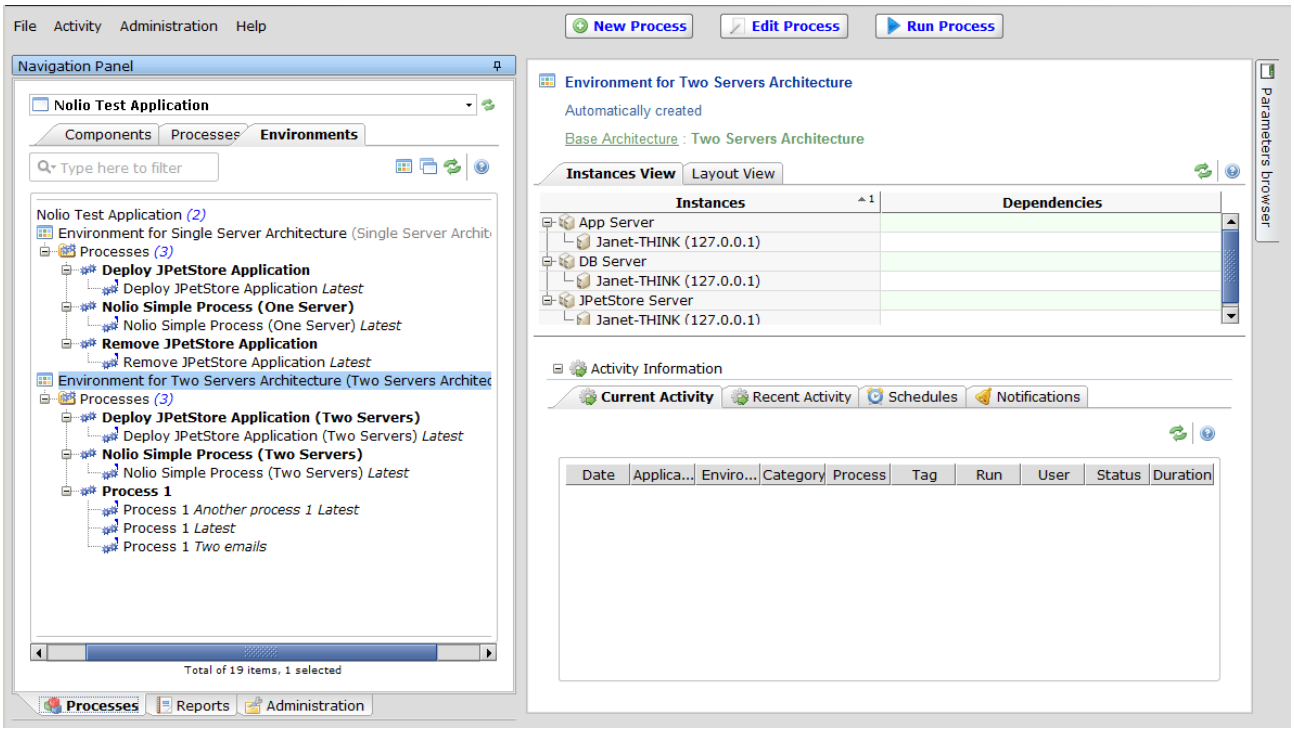
Note: Users with appropriate administration privilege can *remove tags* (on page 140) and *tag the latest published process* (on page 138).

5. Click **Publish Process**.

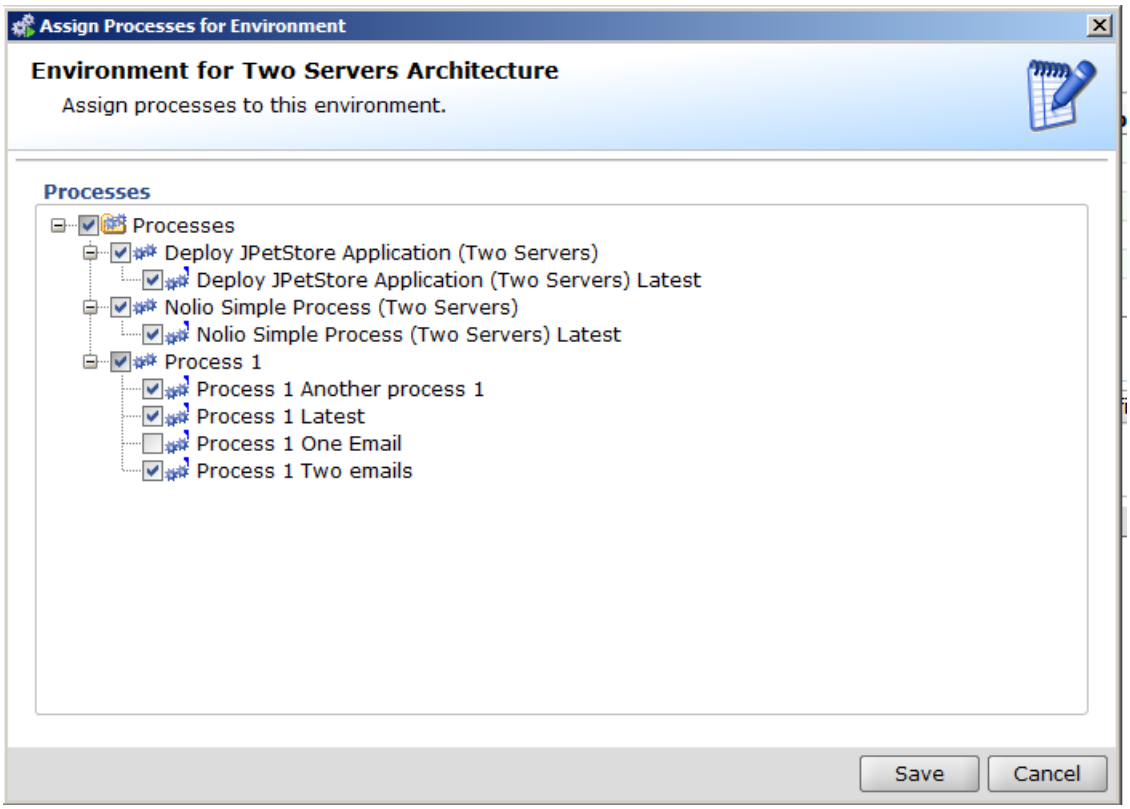
   The process is now published.

Note: If you added tag information, the tag name appears in the environment tab tree *after* you assign an environment to the process.

6. In the **Processes** tab of the **Navigation Panel**, click the **Environment** tab. The **Environment** page opens.



7. Right-click the **Environment** you wish to assign the published processes to, and select **Assigned Processes**. The **Assign Processes for Environment** window opens.



- If the last process was not tagged during publishing, it is labeled as '*Latest*'.
- If the last process was tagged during publishing, it is labeled with the provided tag followed by 'Latest', such as '*My Tag 1 Latest*'.

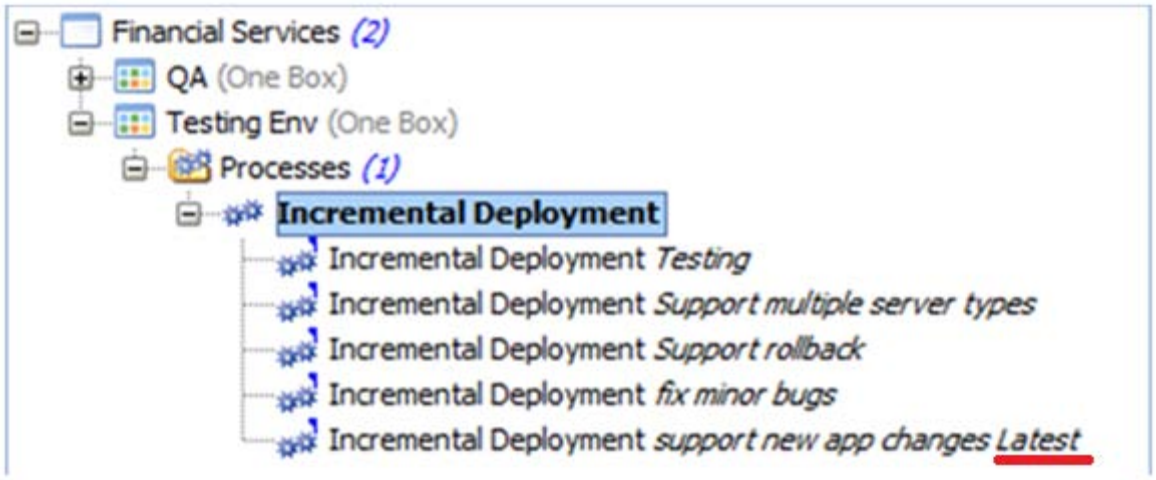
8. In the tree, select the processes you just published**.**
9. Click **Save.**

If you added tag information, the tag name appears in the environment tab tree with the appended label '*Latest*'. At this point, the latest tagged process and the latest untagged process are the same.

Viewing Published Processes in Environment Tab

To view published processes in Environments tab:

1. In the Environments tab, expand the Application and Environment tree nodes for the target process.



2. In the Processes tree, expand the node for the target process.

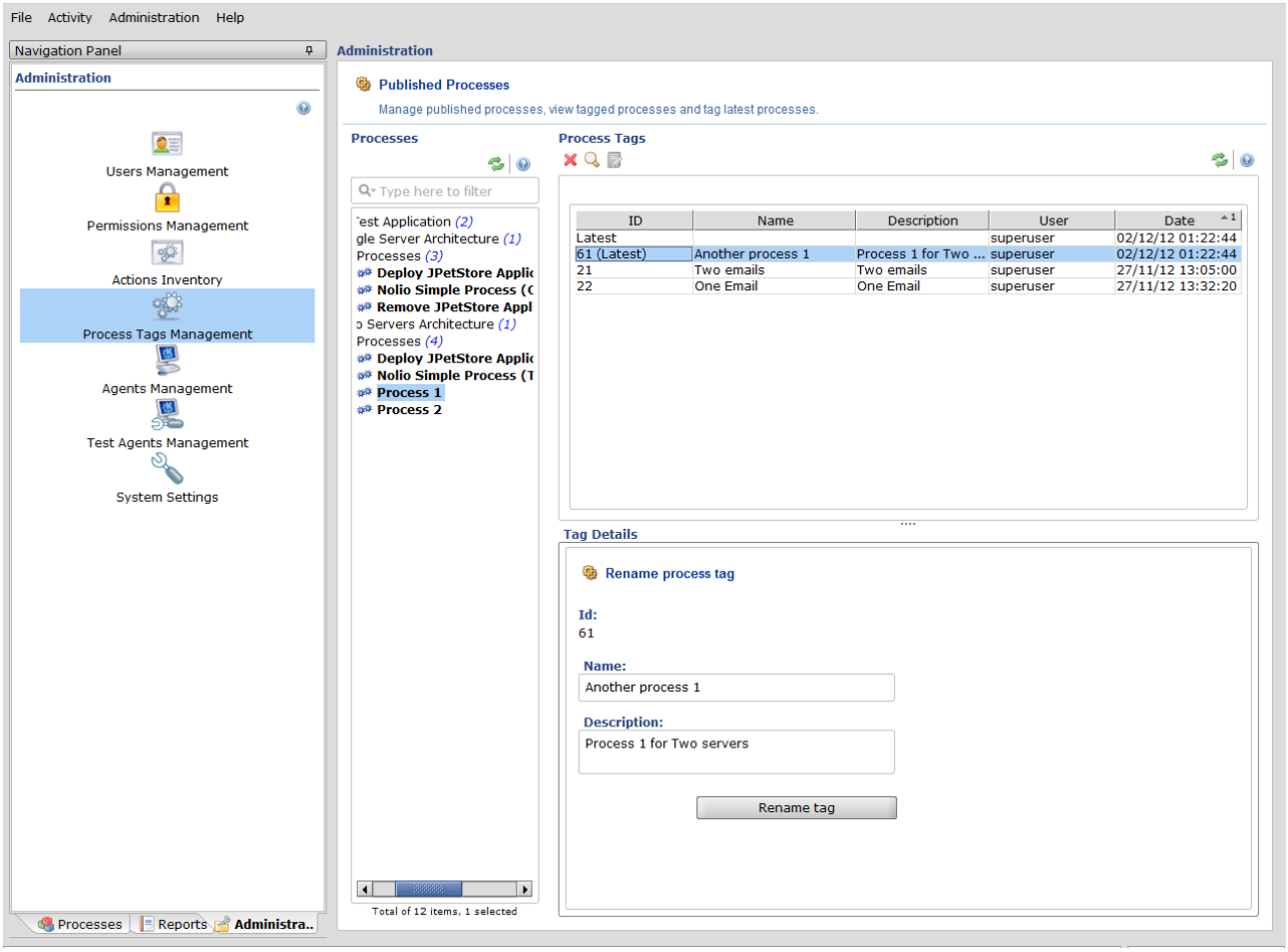
Up to the maximum system-defined number of tagged are listed for the process in ascending time order. The last version published appears with the additional tag '*Latest*'.

Viewing Published Processes in Administration Tab

Users with administration privilege may view published processes in the Administration tab.

To view published processes:

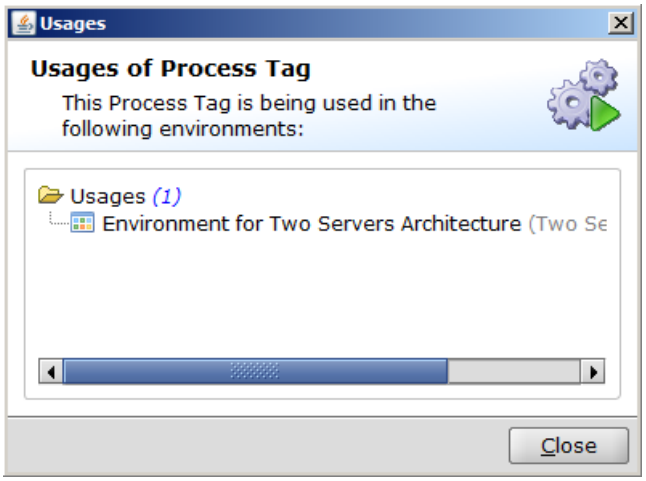
1. In the **Menu Bar**, click **Administration** and select **Process Tags Management**. A tree of published processes appears in the center pane.



2. Select a process. In the right pane a table of process tags and the last version for the selected process appears.

3. To view the environment to which a process is assigned, if any, select an entry and click  .

- If the process is assigned to an environment, the Usages of Process Tag message opens.



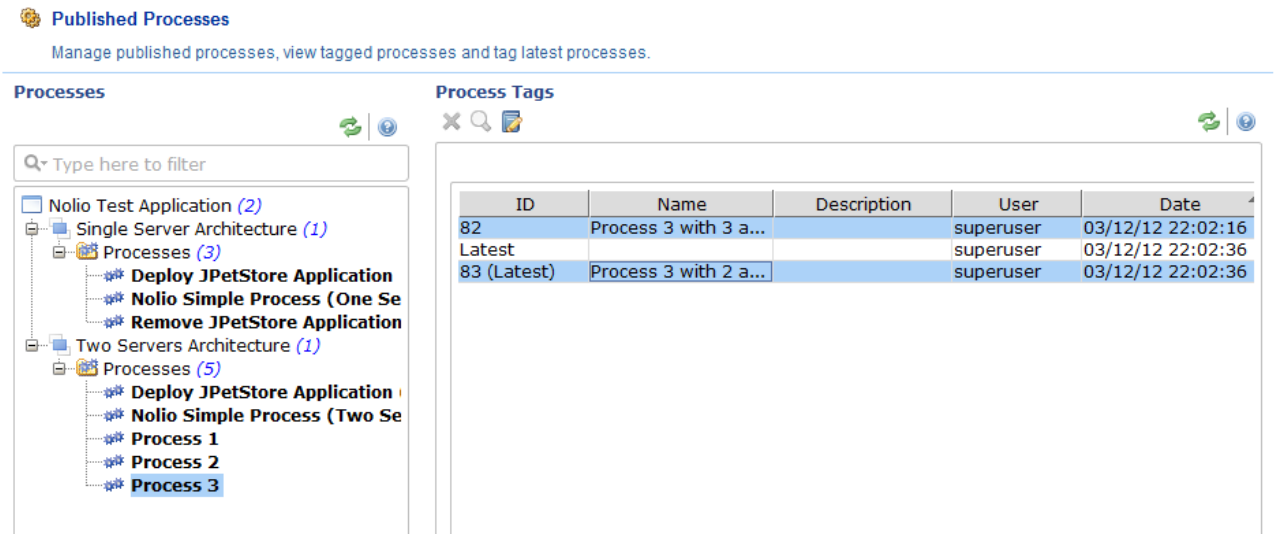
- If the process is *not* assigned to an environment, a notification message opens.

Viewing Changes between Tagged Processes

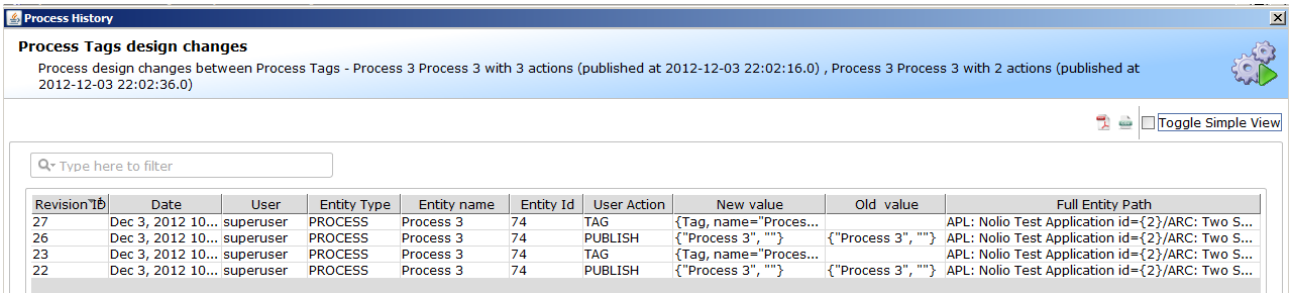
During the period when *Audit Design Changes* (on page 146) is enabled, changes between tagged processes are captured. An administrator can view the changes.

To view the changes between two tagged processes:

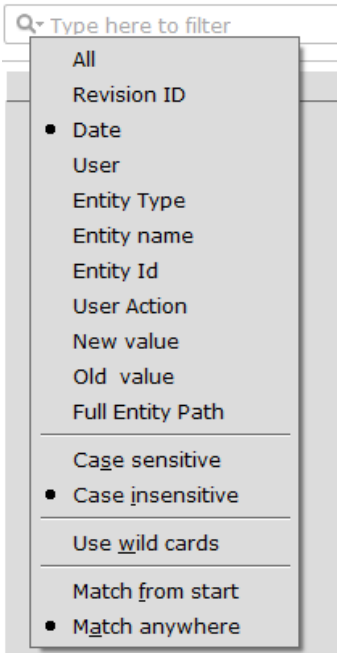
1. Select a process tag, and while pressing the CTRL key, select a comparison tag.



2. Click the icon. The Process Tags design changes table dialog box opens.



3. To filter the table results, select filter options in the select list and enter a value in the filter box.



4. To display a simple view, select the **Toggle Simple View** check box.

5. To return to the full view, clear the **Toggle Simple View** check box.

Tagging Latest Published Process

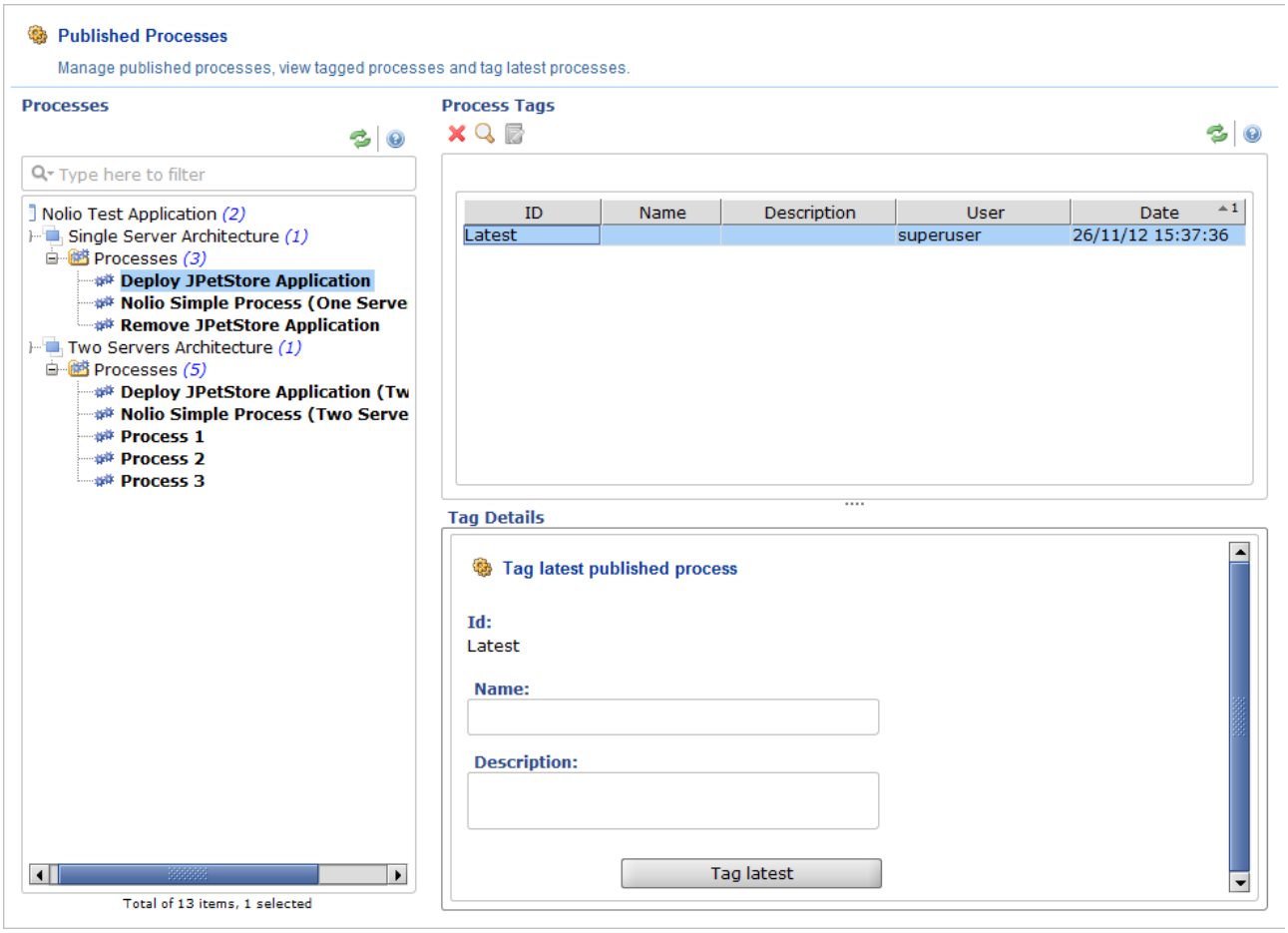
If you did not create a tag when publishing the latest process, you may add a tag afterwards.

To tag the latest published process:

1. In the Administration tab, select **Process Tags Management**.

2. In the Processes pane tree, select a process.

The process tag information for the selected process appears in the Process Tags pane.



3. Select a process to modify in the Process Tags table.

   If you attempt to modify the tag for the entry with ID equals 'Latest' and there is an entry for Latest that is tagged, a message window opens informing you that the latest published process is already tagged.

4. In the Tag Details pane, in the **Name** box, enter a unique tag for the process.

5. In the **Description** box, enter an optional description for the tagged process.

6. Click **Tag latest**. The Process Tags table lists the updated tag.

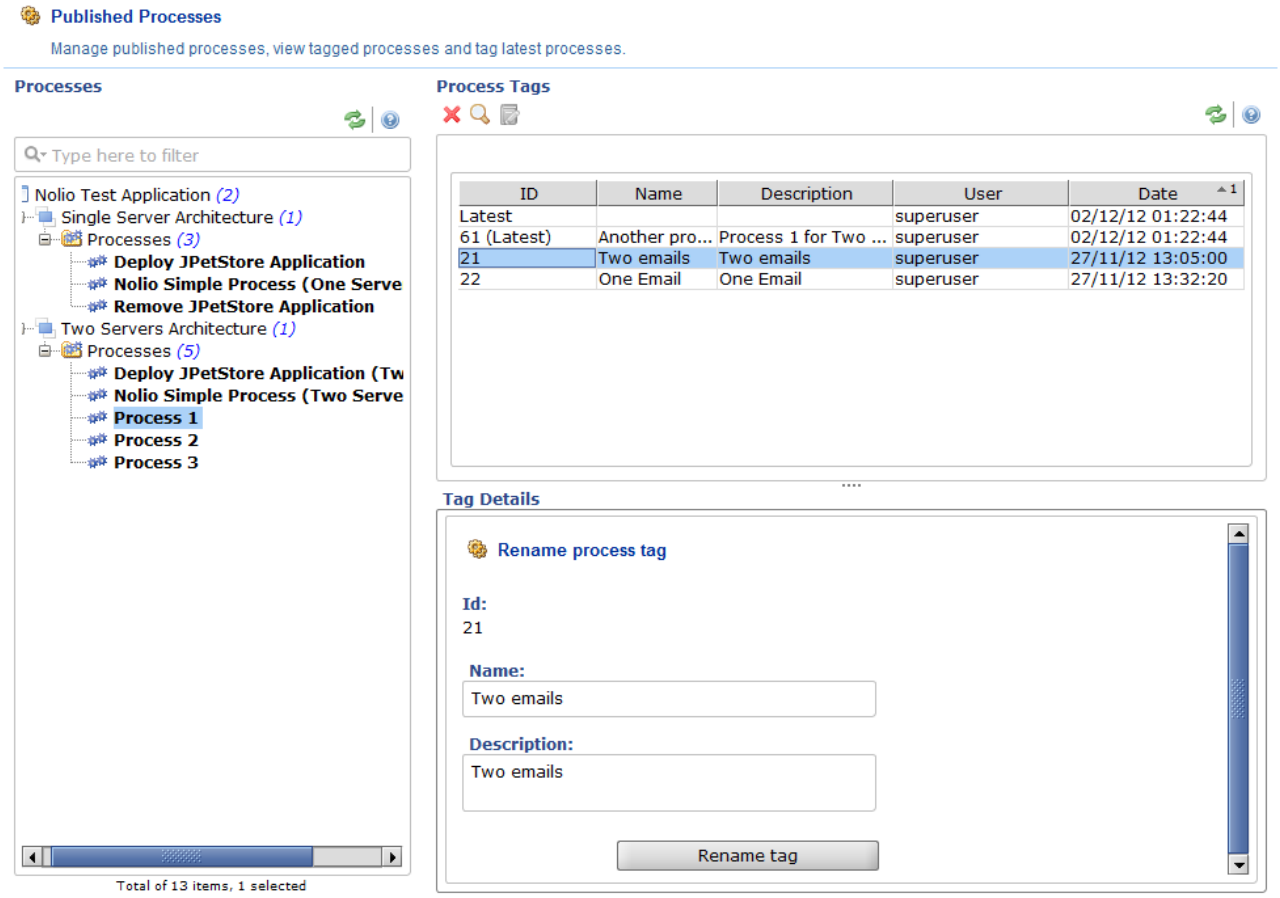
Renaming Published Process Tags

You can change the tag name and/or description for a tagged process.

To rename tagged processes:

1. In the Administration tab, select **Process Tags Management**.

2. In the Processes pane tree, select a process. The process tag information for the selected process appears in the Process Tags pane.



3. In the Process Tags table, select a process to modify.

   If you attempt to modify the tag for the entry with ID equals 'Latest' and there is already an entry for Latest that is tagged, a message window opens informing you that the latest published process is already tagged.

4. In the Tag Details panel, in the **Name** box, enter a unique name for the tagged process.

5. In the **Description** box, enter an optional description for the process.

6. Click **Rename tag**.

Deleting Published Processes

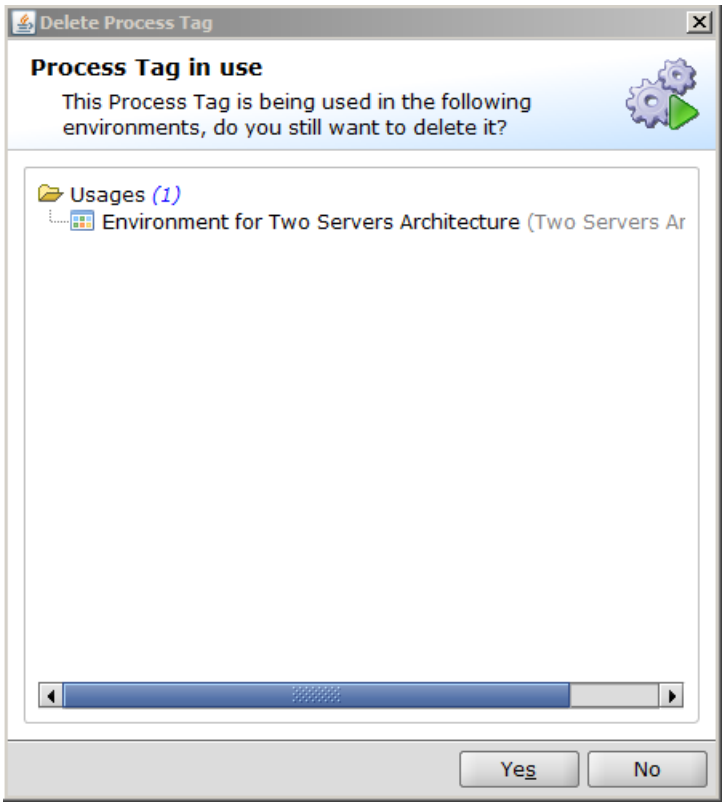
You can delete tagged published processes.

To delete a tagged published process:

1. In the **Administration** tab of the **Navigation Panel**, click **Process Tags Management**. The **Published Processes** page opens.

2. In the **Processes** tree, select the process you want to delete and click  .

   If the process tag is assigned to an environment, the 'Process Tag in use' message appears.



3. To delete, click **Yes**.

The process is removed from the **Processes** tree list.

Chapter 13

Managing Application Services and System Settings

In This Chapter

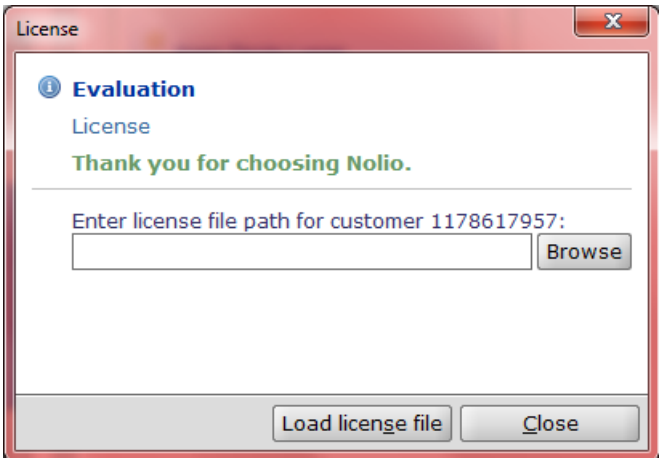
This section covers application services and system settings relevant to the installation and operation of Nolio.

Note: These tasks require the administrative user to have authorization as **Superuser** or **General Administrator**. For information on roles, see *Understanding User Roles* (on page 80).

Updating Nolio ASAP Release Automation License

To update your Nolio ASAP Release Automation license from Evaluation key to Full or to extend your license time:

1. In the Nolio ASAP Release Automation toolbar, click **Help > Enter License**. The **License** window opens.

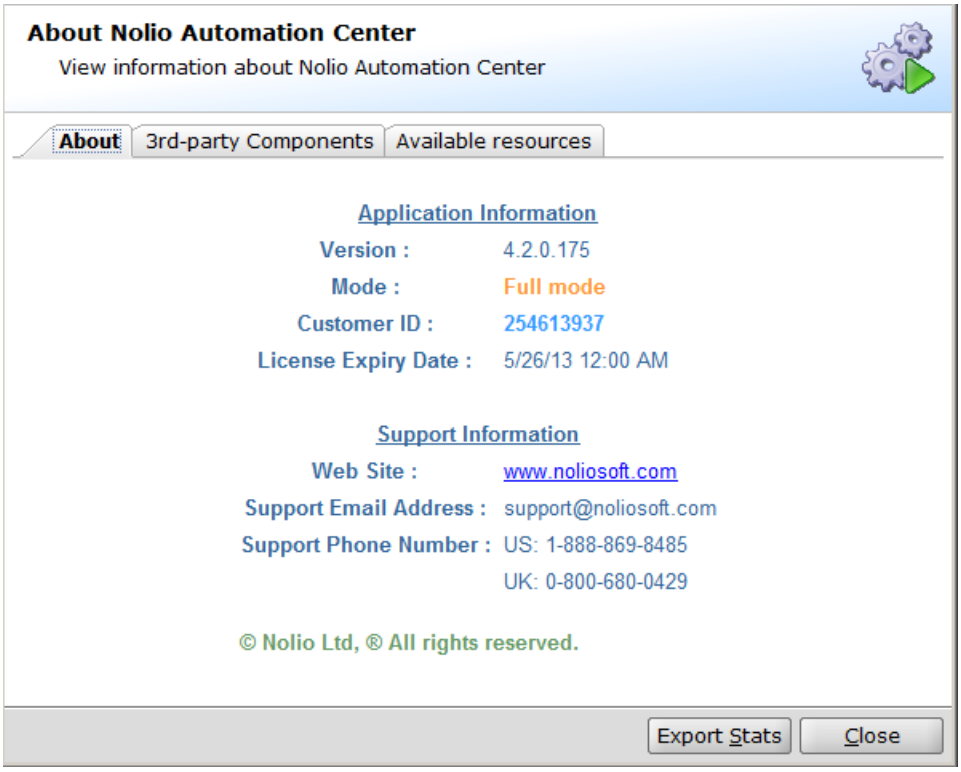


2. Browse to the location of the license file or supply a path to that file and click **Load license file**.

Displaying 3rd-Party License Agreements

To display 3rd-party licenses for libraries integrated in Nolio ASAP Release Automation:

1. In the Nolio ASAP Release Automation toolbar, click **Help** > **About**. The **About Nolio Application Services** window opens.



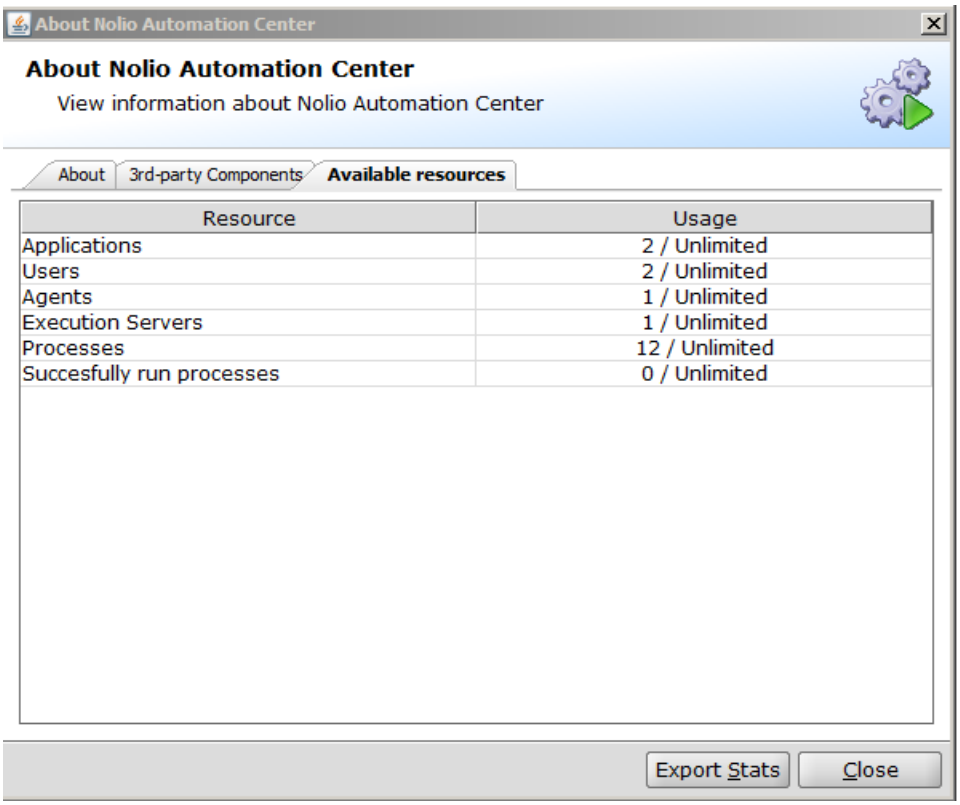
2. Click the **3rd-party Components** tab. The **3rd-party Components tab** lists the 3rd-party licenses for the libraries used by Nolio ASAP Release Automation.
3. To access detailed information about a specific license, click the relevant hyperlink.
4. Click **Close** to return to Nolio ASAP Release Automation.

Viewing Available Resources

To view available resources:

1. In the Nolio ASAP Release Automation toolbar, click **Help** > **About**. The **About Nolio Application Services** window opens.

2. Click the **Available resources** tab. A table of resources and usages opens.



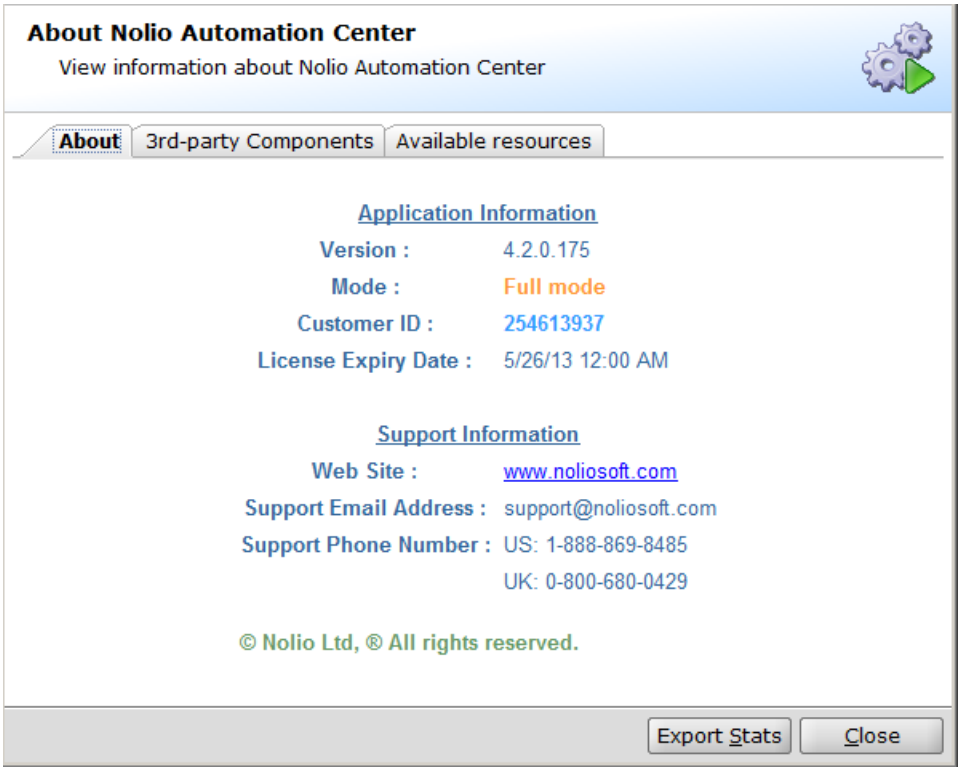
3. Click **Close** to return to Nolio ASAP Release Automation.

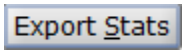
Exporting System Resource Statistics

On occasion Nolio support may request that you provide resource statistics for your installation.

To export statistics:

1. In the Nolio ASAP Release Automation toolbar, click **Help** > **About**. The **About Nolio Application Services** window opens.



2. Click 

.

   The Finished exporting Nolio ASAP statistics message appears with the location of the output text file.

3. Click **OK** and then **Close** to return to ASAP.

Changing Default Local Font

Nolio ASAP Release Automation Client UI provides the ability to support special characters and local fonts, such as European languages.

To enable local fonts:

1. From the ASAP Client UI **File** menu, select **Use Local OS Font**.

2. Restart the ASAP UI.

Note: For the font change to take effect, ASAP UI must be restarted.

Enabling Design Auditing

Design Auditing captures and allows reporting on changes made to:

- Any design components.
- Processes since last publication.
- Changes at the administrative level.
- Execution logging.

The Design Auditing feature is not set to active at installation. The user must manually change its setting from **false** to **true**.

To enable Design Auditing:

1. From the ASAP UI, open the **Administration** tab.
2. Select **System Settings**.
3. For Parameter name **Audit Design Changes**, double-click in the Parameter Value column. The Edit System Settings dialog box opens.
4. In the **New value** box, type **true** and click **Save**.
5. Close ASAP UI.
6. Restart Nolio Server service on the Data Management machine for the change to take effect.

Changing Maximum Number of Process Tags

The **MAX_PROCESS_TAGS** system settings controls the number of process tags that can be stored for a process.

To change the limit for number of process tags:

1. From the ASAP UI, open the **Administration** tab.
2. Select **System Settings**.
3. For Parameter name **MAX_PROCESS_TAGS**, double-click in the Parameter Value column. The Edit System Settings dialog box opens.
4. In the **New value** box, type the new number and click **Save**.
5. Close ASAP UI.
6. Restart Nolio Server service on the Data Management machine for the change to take effect.

Enabling Display of Deprecated Actions

By default, deprecated actions do not appear in the actions filter and search options. If a deprecated action is already in use by a specific flow or process, it can be viewed in context. However, you cannot add the deprecated action again.

To view deprecated actions:

1. From the ASAP UI, open the **Administration** tab.
2. Select **System Settings**.
3. For Parameter name **Show Deprecated Actions**, double-click in the Parameter Value column. The Edit System Settings dialog box opens.
4. In the **New value** box, type **true** and click **Save**.
5. Close ASAP UI.

   The change takes effect without restarting Nolio Server service.

Appendix A

Using MS SQL Server as Database for Nolio

In This Appendix

As described in *Installing Nolio Server* (on page 21), when selecting MS SQL Server as the database for Nolio, the user can select to create the required database components as part of the installation or to use a pre-defined database and existing login.

The following information is mainly relevant for users who:

1. Select Custom installation with the 'Skip Database Configuration' option

   or

2. Want to install against a database that was previously created by a DBA for the sole use of Nolio

Following are instructions on how to manually create the database and login.

The following pre-installation tasks are required before the installation can proceed, and prior to the Nolio Server service start-up:

1. Create an MS SQL Server database for Nolio use.
2. Verify TCP/IP protocol and properties are enabled on the Server.
3. Enable SQL Server Browser Service.

Note: Supported MS SQL Server versions are SQL 2005 and higher.

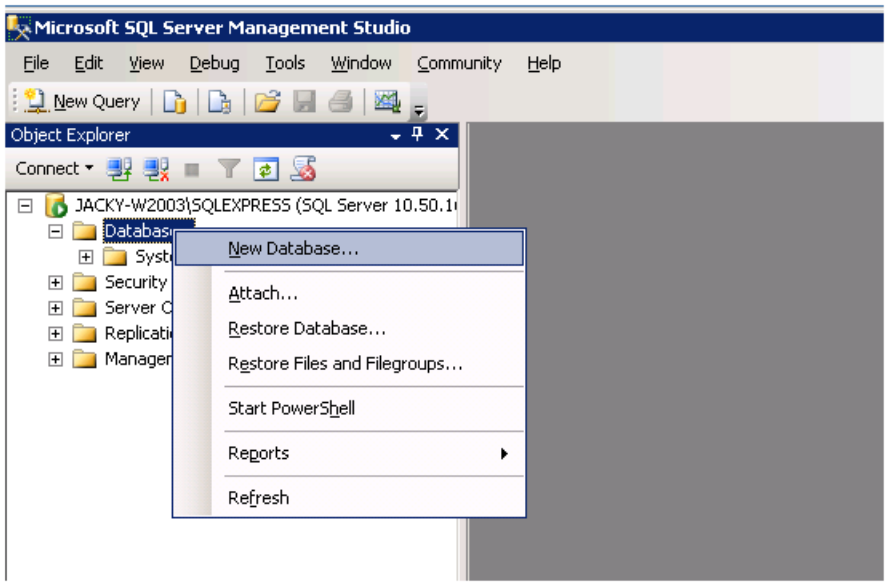
Creating MS SQL Server Database

On the MS SQL Server instance, create a new database to be used by Nolio Server.

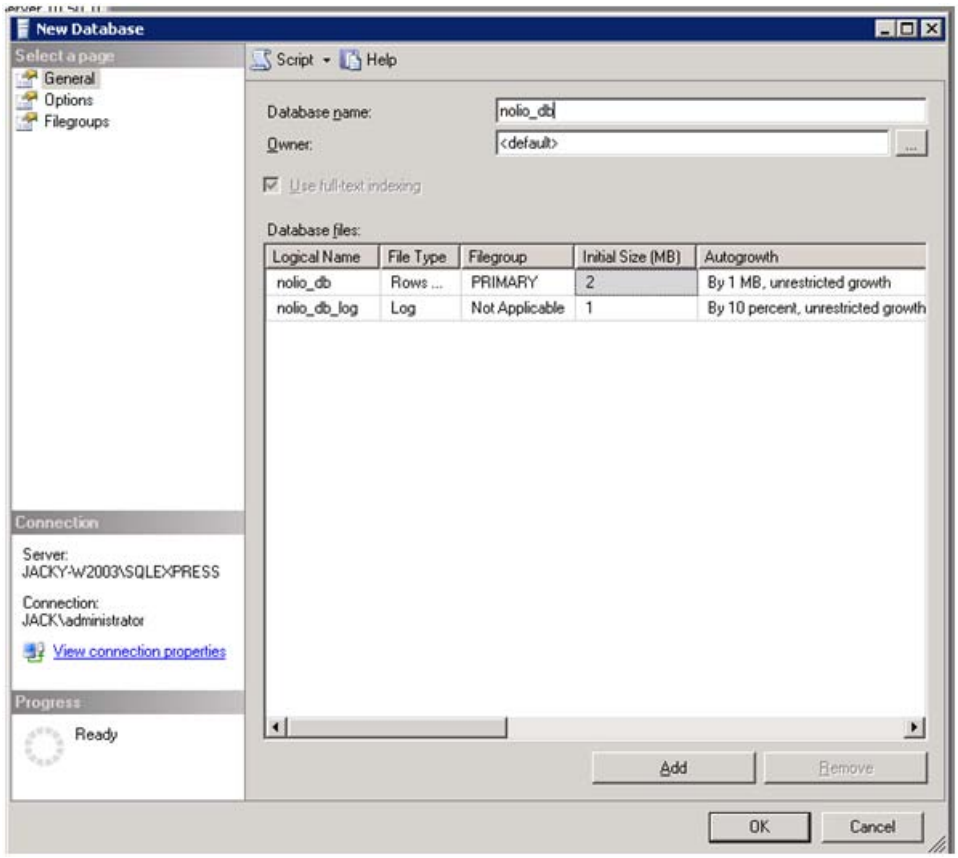
To create an MSSQL Server database:

1. Log in to SQL Server Management Studio.

2. Right-click on the Databases folder and select **New Database**.



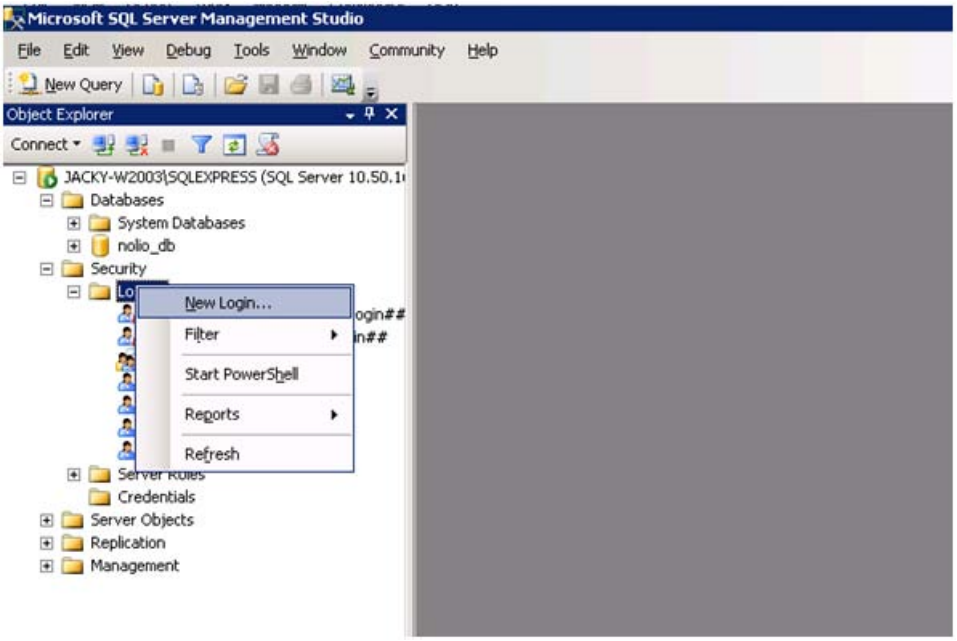
3. Enter the new database name and click **OK**.



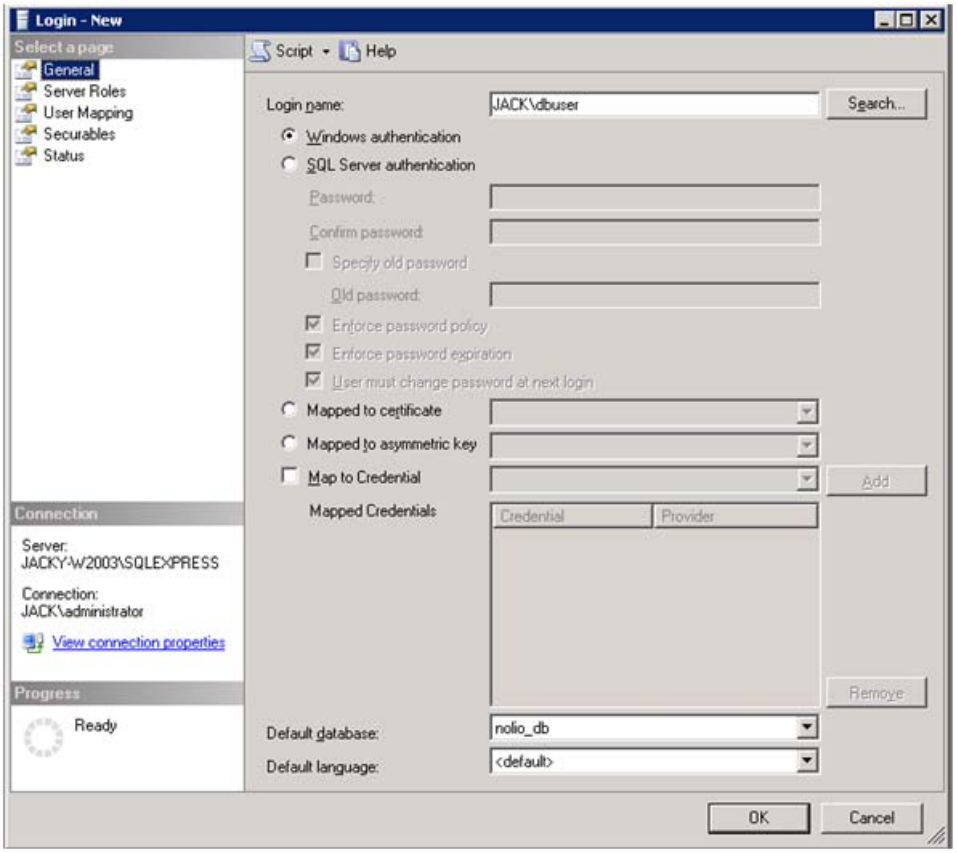
To add a new login:

1. Open the server Security folder.

2. Right-click on **Logins** and select **New Login**.



The general page for Logins- New opens.



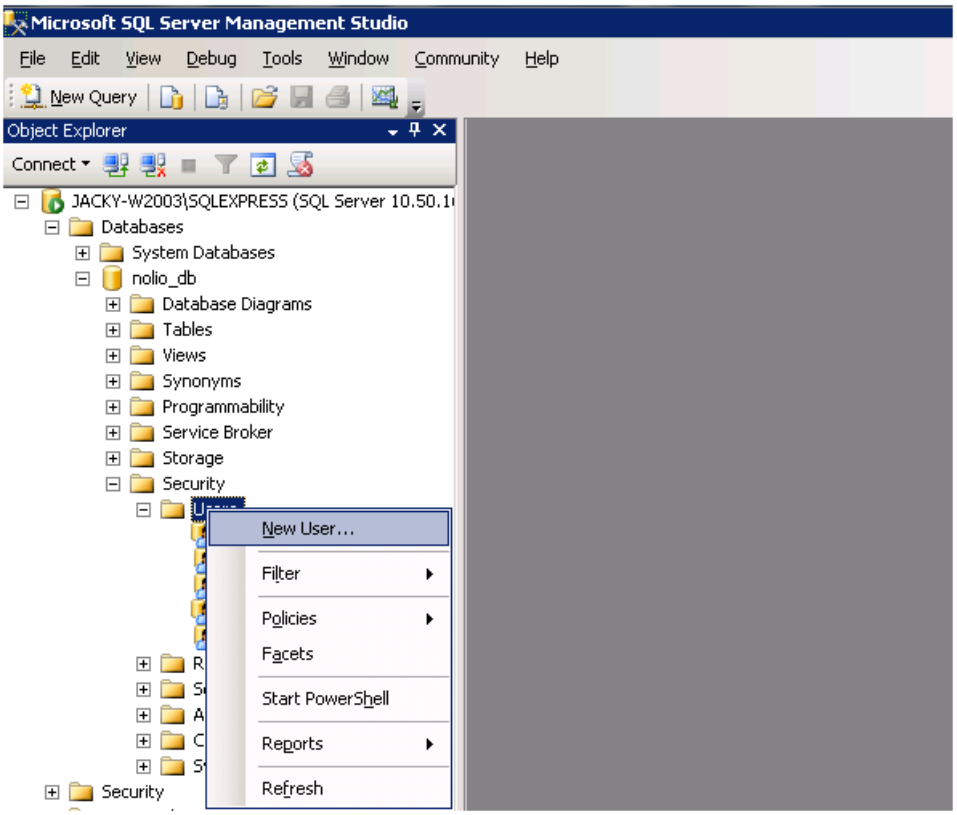
3. In the **Login name** box, enter the name of the database user.

4. Select **Windows authentication**.

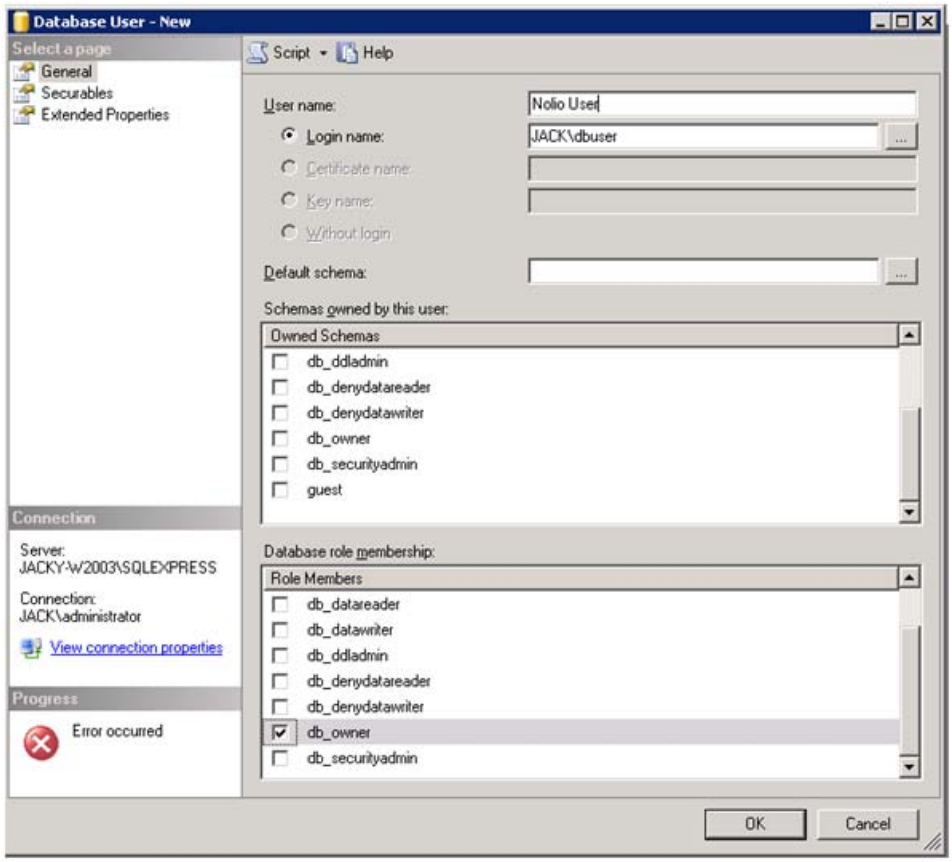
5. In the **Default database** box, enter the name of the new Nolio database. The default is nolio_db.
6. Click **OK** to add the user to the Nolio database.

To add a new user to the database:

1. In the Databases tree, open the **nolio_db** folder.
2. In the nolio_db **Security** folder, right-click on **Users** and select **New User**.



The Database User – New window opens.



3. In the Database User – New window, enter the following:
   a. In the User name box, enter the name of the newly created user.
   b. Select **Login name**, click the browse icon, and select the login name of the new user.
   c. In the Data role membership pane, select the **db_owner** check box.
   d. Click **OK**.

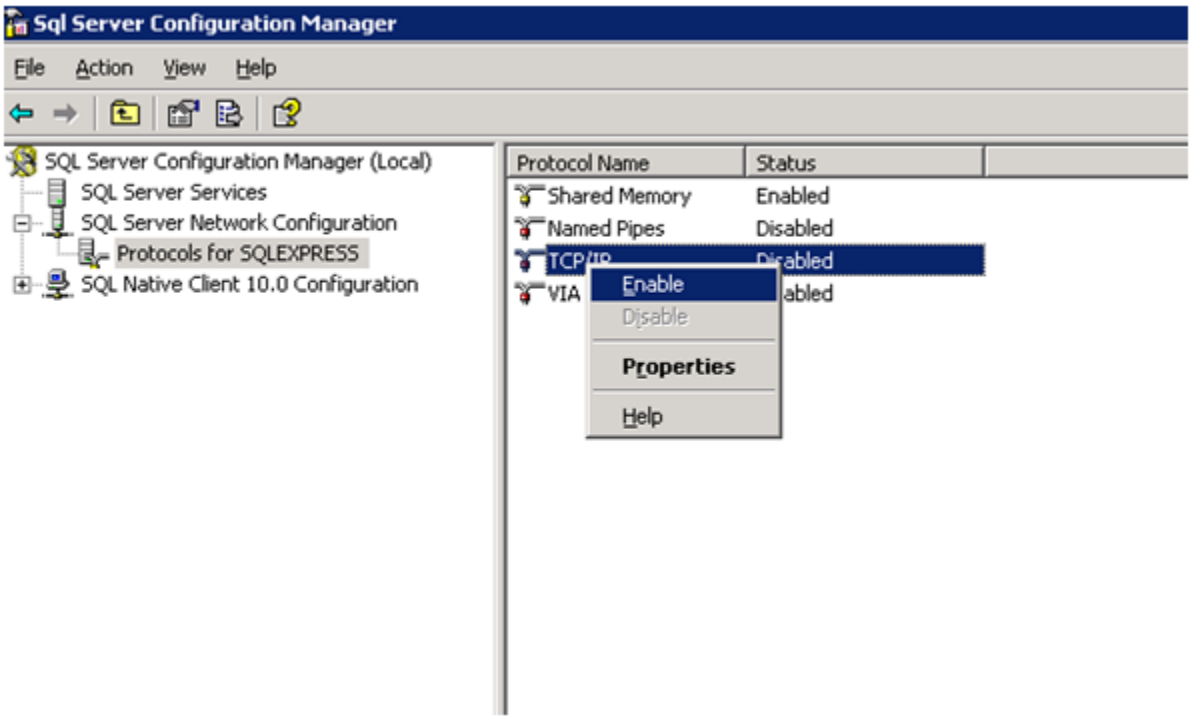
Enabling TCP/IP Protocol and Restarting SQL Service

Verify that TCP/IP protocol and properties are enabled and restart the SQL Server service.

To verify TCP/IP protocol and properties enabled on MS SQL Server:

1. Login in to the SQL Server Configuration Manager.
2. In the SQL Server Configuration Manager tree, under **SQL Server Network Configuration**, select **Protocols for <INSTANCENAME>**.

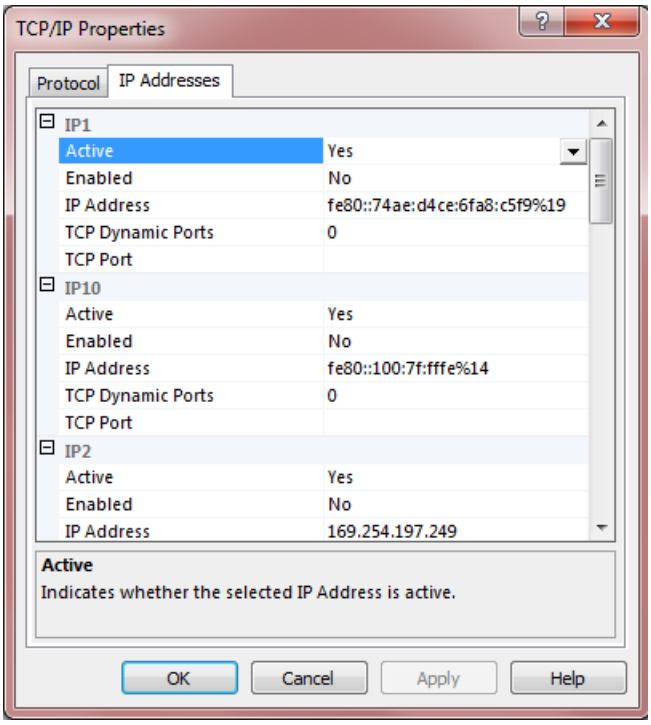
In the following example, the instance name is SQLEXPRES.



3. In the right panel, verify that the status for TCP/IP protocol is enabled. If not, right-click on **TCP/IP** and select **Enable**.

4. In the right-click menu, select **Properties**. The TCP/IP Properties window opens.

5. Click the **IP Addresses** tab.

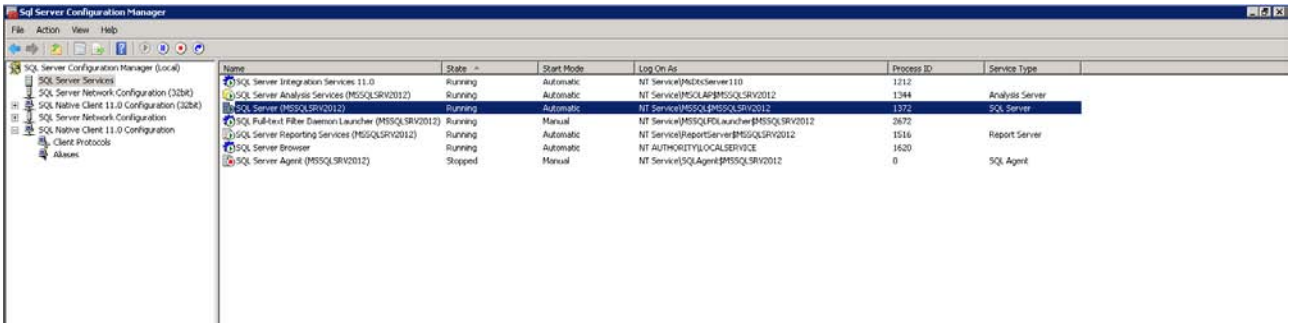


6. Verify the following for each interface:
   a. TCP Dynamic Ports is set to the TCP port you want MS SQL to use. The default is 1433.
   b. Enable binding is enabled on relevant interfaces.

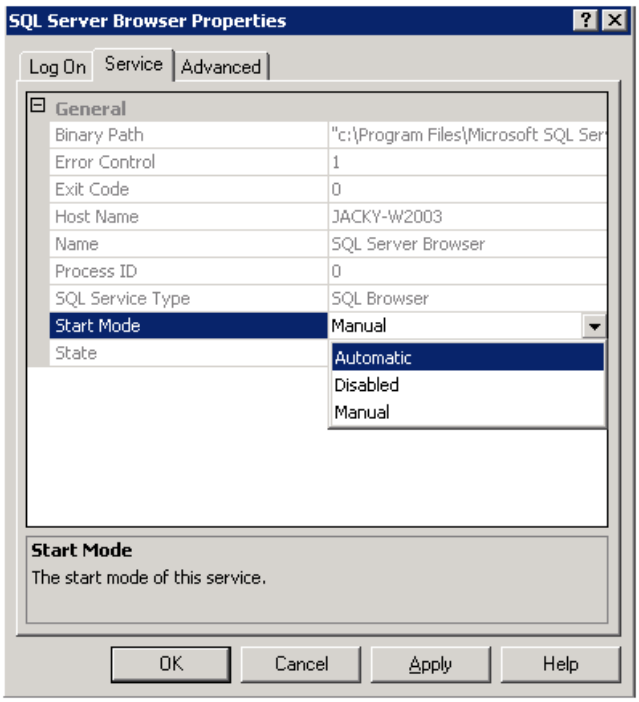
Enabling SQL Server Browser Service

To enable the SQL Server Browser Service:

1. Log in to the SQL Server Configuration Manager and select **SQL Server Services**.



2. Right-click on **SQL Server Browser** and select **Properties**. The SQL Server Browser Properties dialog box opens.



3. Click the **Service** tab.
4. In the **Start Mode** list, select **Automatic** and click **OK**.
5. Right-click on SQL Server Browser again and select **Start**.

Appendix B

Using Oracle as Database for Nolio

In This Appendix

As described in *Installing Nolio Server* (on page 21), when selecting Oracle as the database for Nolio, the user can choose to create the required schema owner and its tablespace as part of the installation or to use a pre-defined database user and tablespaces.

The following information is mainly relevant for users who:

1. Select Custom installation with the 'Skip Database Configuration' option

   or

2. Want to install against a database that was previously created by a DBA for the sole use of Nolio

Creating Oracle Database

The following information includes instructions for how to manually create the database user, create the tablespaces, and provide the required grants.

A database user with DBA privileges should complete the following instructions:

1. create user <USERNAME> identified by <PASSWORD>;
2. create tablespace <TABLESPACENAME> datafile '<FILENAME.DBF>.dbf' size 500m autoextend on;
3. alter user < USERNAME > default tablespace < TABLESPACENAME >;
4. grant unlimited tablespace to < USERNAME >;
5. grant connect to < USERNAME >;
6. grant create table to < USERNAME >;
7. grant create sequence to < USERNAME >;
8. grant create trigger to < USERNAME >;

Checking for Oracle Listener Name

To check for the Oracle Listener Name:

1. From the command line, or prompt, on the database machine, run the following command , replacing LISTENER NAME with the actual listener name:

   ```
   lsnrctl services <LISTENER NAME>
   ```

   A list of SERVICE_NAMES that Oracle Listener is expecting appears.

2. Identify the SERVICE NAME representing the Oracle SID to which you are referring, and use that name as the value for SID or Service Name as provided during installation.

Example 1:

```
C:\Users\Administrator>lsnrctl services listener
LSNRCTL for 32-bit Windows: Version 10.2.0.3.0 - Production on 14-MAR-2011
10:27:13
Copyright (c) 1991, 2006, Oracle.  All rights reserved.
Connecting to (DESCRIPTION=(ADDRESS=(PROTOCOL=IPC)(KEY=EXTPROC1)))
Services Summary...
Service "ora10g.nolio.com" has 1 instance(s).
  Instance "ora10g", status READY, has 1 handler(s) for this service...
    Handler(s):
      "DEDICATED" established:2 refused:0 state:ready
         LOCAL SERVER
Service "ora10gXDB.nolio.com" has 1 instance(s).
  Instance "ora10g", status READY, has 1 handler(s) for this service...
    Handler(s):
      "D000" established:0 refused:0 current:0 max:1002 state:ready
         DISPATCHER <machine: nolio-ORA10G-SRV, pid: 1216>
         (ADDRESS=(PROTOCOL=tcp)(HOST= nolio-ORA10G-SRV)(PORT=49159))
The command completed successfully
```

In Example 1, the Nolio schema is to be created in the "ora10g" SID. Therefore, according to the SERVICE_NAME, the value for "data.management.database.name" should be "ora10g.nolio.com".

Example 2:

```
C:\Users\Administrator>lsnrctl services listener
LSNRCTL for 32-bit Windows: Version 11.2.0.1.0 - Production on 14-MAR-2011
19:30:37
Copyright (c) 1991, 2010, Oracle.  All rights reserved.

Connecting to (DESCRIPTION=(ADDRESS=(PROTOCOL=IPC)(KEY=EXTPROC1521)))
Services Summary...
Service "ora11gXDB.nolio.com" has 1 instance(s).
```

```
  Instance "ora11g", status READY, has 1 handler(s) for this service...
    Handler(s):
      "D000" established:0 refused:0 current:0 max:1022 state:ready
         DISPATCHER <machine: nolio-ORA11G-SRV, pid: 2268>
         (ADDRESS=(PROTOCOL=tcp)(HOST=2k8-x64-0)(PORT=49171))
Service "orcl" has 1 instance(s).
  Instance "orcl", status READY, has 1 handler(s) for this service...
    Handler(s):
      "DEDICATED" established:0 refused:0 state:ready
         LOCAL SERVER
The command completed successfully
```

In Example 2, the Nolio schema is to be created in the "orcl" SID. As such, according to the SERVICE_NAME, the value for the "data.management.database.name" should be "orcl".

Appendix C

Installing Server using varfile

In This Appendix

Copy the following varfile template to a new file named varfile response.varfile.

Note: After copying the template, it is necessary to edit the new file to remove all comments including angle brackets ('<text>') before adding site-specific values.

Server varfile Template

```
## MAIN Information

#Installation Path (if windows, path should include '\\' replacing single '\'.
For example: C:\\Program Files (x86)\\Nolio\\Nolio ASAP Release Automation)

sys.installationDir=<MyInstallationPath>

#Installation Type 0-CleanInstall,  1-Upgrade

nolio.installation.type.user$Integer=<0>

#Supernode IP Address (should include value only if server installation includes
an Execution Server)

nolio.agents.supernode=<127.0.0.1>

#Execution Server Name (the name of the Execution Server as known to the Agent
machines)

nolio.execution.name=<MyExecutionServerHostName>

#Execution Server Node Name (a unique node id)

nolio.nimi.node.id=<es_ MyExecutionServerHostName>

#Program Group Name

sys.programGroupName=Nolio

#Nolio Serice as Local System (true if installed with LocalSystem account.
otherwise, false)
```

```
install.service.lsa$Boolean=<true>

#Nolio Service Password (blank if using LocalSystem account. otherwise, service password)

nolio.service.pw=

#Nolio Service User (blank if using LocalSystem. otherwise, service owner. If the installation will use mssql windows authentication, the service user must be defined administrator in the mssql database. When using the format domain\user, the format should include '\\' replacing single '\'. For example: mydomain\\myusername.)

nolio.service.user=

#Add shortcut of Nolio to Desktop (true of false)

createDesktopLinkAction$Boolean=<true>


## DB Variables

#DB TYPE 0-MYSQL,  1-MSSQL, 2-ORACLE

nolio.db.type$Integer=<2>

#DB Hostname or IP Address

nolio.db.host.name=<DBHostName>

#DB Username (when installing with mssql windows authentication, leave blank)

nolio.db.user.name=<myusername>

#DB Password (when installing with mssql windows authentication, leave blank)

nolio.db.password=<mypassword>

#DB Schema Name (for more details what is expected as database name see instructions in the installation and administration guide)

nolio.db.database.name=<mydatabasename>

#DB Create Schema (true or false. If set to false, database will not be created and installation supports only DM and ES installation)

nolio.db.create$Boolean=<true>

#DB Port

nolio.db.port=<1521>
```

```
#DB Demo create true or false (can be ignored)

nolio.db.isempty$Boolean=true

#MSSQL DBA User name (mssql instance username that can create database. blank
if not using mssql or using mssql windows authentication)

nolio.db.mssql.dba.user=

#MSSQL DBA Password (blank if not using mssql or using mssql windows
authentication)

nolio.db.mssql.dba.password=

#MSSQL Windows Authentucation (true or false. blank if not using mssql)

nolio.db.mssql.winauth=

#MSSQL DBA Windows Authentucation (true or false. blank if not using mssql)

nolio.db.mssql.dba.winauth=

#ORACLE DBA Username (oracle user that can create other users and database
objects. typically ‘sys’ or ‘system’ user. blank if not using oracle)

nolio.db.oracle.dba.user=

#ORACLE DBA Password (blank if not using oracle)

nolio.db.oracle.dba.password=

#ORACLE Tablespace Name (blank if not using oracle)

nolio.db.oracle.tablespace=

#ORACLE DATAFILE Name (blank if not using oracle)

nolio.db.oracle.tablespace.file=


## Ports Variables

#Agent NiMi PORT (default is 6900)

nolio.nimi.port=<6600>

#Execution Server NiMi Port (default is 6600)

nolio.execution.port=<6600>

#TOMCAT HTTP Secured Port (default is 8443)
```

```
tomcat.port.ssl=<8443>

#TOMCAT AJP PORT (default is 8009)

tomcat.port.ajp=<8009>

#TOMCAT HTTP Port (default 8080)

tomcat.port.http=<8080>

#TOMCAT Shutdown Port (default is 8005)

tomcat.port.shutdown=<8005>

#JMX FLAG (false if using default setting. True if the JMX port is to be changed)

nolio.hiddenport$Boolean=false

#JMX Port (provide value only if nolio.hiddenport$Boolean is set to true. default
is 20203)

port.hidden=20203


# GENERAL parameters

#Installation Type 0 - Complete, 1 - Custom

nolio.install.type$Integer=0

#Mark to install Data Management (true or false)

nolio.install.dm$Boolean=<true>

#Mark to install Execution Server (true or false)

nolio.install.es$Boolean=<true>

#Mark to install Agent (true or false)

nolio.install.agent$Boolean=<true>

#Mark to Demo Processes (not at use)

nolio.install.flows$Boolean=false

#BRANDING TYPE (nolio or branded company. If left blank will use nolio)

nolio.branding.name=<nolio>

#Just for Windows - STARTUP Menu

sys.programGroupDisabled$Boolean=true
```

```
#Additional Execution Flag

sys.component.12751$Boolean=true

#Server Infrastructure Flag

sys.component.336$Boolean=true

#Additional DM Flag

sys.component.12750$Boolean=true


# Other parameters

#Product Activation Key

nolio.product.key=<youractivationkey>

# Language - not in use

sys.languageId=en

#Nimi Supernode

nolio.nimi.supernode=default

#Nimi Secured flag (true of false. will be update for both Execution Server and
Agent. must be aligned between these components)

nolio.nimi.secured$Boolean=<true>

#Agent Node ID (unique agents node id)

nolio.agent.jxta.node.name=<MyAgentHostName>
```

Appendix D

Installing Agent using varfile

In This Appendix

To install an agent using varfile:

1. Copy the agent varfile template to new file named `deployer.silent.varfile`.

   Note: After copying the template, it is necessary to edit the new file to remove all comments including angle brackets ('<text>') before adding site-specific values.

2. Copy `deployer.silent.varfile` together with the appropriate Nolio Agent installation file to the target agent machine.

3. Grant required permissions to the executable:

   ```
   chmod a+x nolio_agent_<OS>_4_5_1_b<#>
   ```

4. Trigger the silent installation, using the platform-specific file:

   ```
   ./nolio_agent_linux_4_5_1_b<#>.sh –q –varfile deployer.silent.varfile
   ```

Agent varfile Template

```
#Installation Path (if windows, path should include ‘\\’ replacing single ‘\’.
For example: C:\\Program Files (x86)\\Nolio\\Nolio ASAP Release Automation)

sys.installationDir=<MyInstallationPath>

#application name to which the agent should be mapped to. empty if mapping is
done from the UI

nolio.agent.mapping.application=

#environment  name to which the agent should be mapped to. empty if mapping is
done from the UI

nolio.agent.mapping.environment=

#server type  name to which the agent should be mapped to. empty if mapping is
done from the UI

nolio.agent.mapping.servertype=
```

```
#unique node id of the agent. typically, hostname or ip address of the machine

nolio.nimi.node.id=<MyAgentHostName>

#agent port number (default 6600)

nolio.nimi.port=<6600>

#owner of the agents service true if installed with LocalSystem account.
otherwise, false)

install.service.lsa$Boolean=true

#agent service user (blank if using LocalSystem. otherwise, service owner)

nolio.service.user=

#agent service password (blank if using LocalSystem account. otherwise, service
password)

nolio.service.pw=

#nimi secured flag (true of false. must be aligned between the agent and its
execution server)

nolio.nimi.secured$Boolean=true

#execution server name or ip address

nolio.execution.name=<NES Name or IP>

#execution server port

nolio.execution.port=6900


#Not in use and can be ignored

nolio.nimi.supernode=127.0.0.1\:6900

nolio.hiddenport$Boolean=false

sys.programGroupDisabled$Boolean=false

sys.component.336$Boolean=true

sys.programGroupName=Nolio

sys.programGroupAllUsers$Boolean=true

sys.languageId=en
```

Appendix E

Dynamic Agent Mapping

In This Appendix

To automatically map agents to their appropriate application and environment during a silent installation:

1. Create one additional input file, per agent, according to the template in Agent Mapping File Template (on page 166).
2. Place the appropriate agent mapping file in the `NolioAutomationCenter/conf` folder of the target agent machine.
3. When the agent connects to its Execution Server, the application and environments are mapped to the agent according to the agent mapping file.

Agent Mapping File Template

Following is a template for contents of the `agent.mapping.xml` file:

```
<?xml version="1.0" encoding="ISO-8859-1" ?>
<agent-mapping>
    <application name="My Test Application">
        <environment name="Environment for Test">
            <server-type name="Remote"/>
        </environment>
    </application>
</agent-mapping>
```

Appendix F

Enabling LDAP Integration

In This Appendix

To enable LDAP integration, administrators must manually update the `distributed.properties` file, located on the Nolio Server machine under `webapps/datamanagement/WEB-INF` folder.

The file includes a commented-out section for the fields required for enabling LDAP integration.

Procedure

To enable LDAP integration:

1. Close all Nolio client UIs
2. Stop the Nolio Server service.
3. In the `webapps/datamanagement/WEB-INF` folder, update the `distributed.properties` file.
   a. Uncomment the required lines. See *Required Lines in Properties File* (on page 167).
   b. Provide the required inputs.
4. Start the Nolio Server service.

Required Lines in Properties File

```
#Uncomment and edit following lines to be able to log in with your Active Directory domain user.

#NOTE: User will see nothing in ASAP, unless he is a member of some security group in

#the domain, which was previously imported to ASAP, and granted with permissions

#to some application

#NOTE: only one type of LDAP integration, General or Active Directory, can be enabled at the same time.
```

```
#use.active.directory.authentication=true

#use.active.directory.domain=<domain name, e.g: mycompany.com>

#use.active.directory.url=<ldap url, e.g: ldap://server.domain.com>


#Uncomment and edit following lines to be able to log in with your a user defined in your local LDAP.

#NOTE: User will see nothing in ASAP, unless he is a member of some security group in

#the domain, which was previously imported to ASAP, and granted with permissions

#to some application

#NOTE: only one type of LDAP integration, General or Active Directory, can be enabled at the same time.

#use.general.ldap.authentication=true

#use.general.ldap.url=<ldap url, e.g: ldap://localhost:10389>

#use.general.ldap.user.fqdn=<fully qualified DN of domain user that has permissions to see other users, e.g:uid=admin,ou=system>

#use.general.ldap.user.password=<password of the user defined in use.general.ldap.user.fqdn>
```

Glossary

Action

An **action** is a predefined operation that may be made available to and customized for application components. In the context of the *flows* created in Nolio ASAP Release Automation, each such action becomes a *step* in the flow.

Application

In the context of Nolio ASAP Release Automation, an **application** is a high-level design construct whose design and ultimate execution allow achieving a fully-automated implementation of a server-based system. In Nolio ASAP Release Automation, applications are developed in the **Processes** screen's **Components** tab.

Component

A **component** is each one of the system-level software modules that is involved in the implementation of a server-based application designed in Nolio ASAP Release Automation.

Execution Server

The Execution Server is the server that manages a specific Data Center, handles data propagation for a server group, and includes Nolio Agent modules controlling the specific servers involved in the execution of a process. An Execution Server may communicate with other Execution Servers for the purpose of Agent to Agent communication.

Flow

A **flow** is the grouping together of *actions,* made available to an application's component. This grouping together of actions specifies the chronological sequence in which two or more actions occur. In addition, it may specify the conditional nature of the transition made from the completion of one action to the start of the next action in the sequence.

Implementation

The fully automated performance of all operations related to the deployment, maintenance, or other activities, on the software components participating in a server-based application. An implementation is achieved by executing some or all processes created for an architecture.

LDAP

The Lightweight Directory Access Protocol (LDAP) is an application protocol for reading and editing directories over an IP network. LDAP directories often contain user authentication information.

Nolio Agent

Nolio Agent is the Nolio ASAP Release Automation module that receives the appropriate instructions passed to it by Nolio ASAP Release Automation and implements them on the server to which it is linked.

Nolio Center

Nolio Center is the central control mechanism that coordinates the implementation of packaged processes designed in Nolio ASAP Release Automation.

When a process is actually executed, the appropriate data and instructions are channeled from the **Nolio Center** via one or more dedicated **Gateways** to the **Nolio Execution Server** that manages a specific **Data Center**. Handling data propagation for a specific group of servers, each **Data Center** also includes any number of **Nolio Agent** modules, each of which controls a specific physical server involved in the execution of a process.

Process

A **process** is a high-level sequence of planned activity involving one, multiple, or all components of an application. A process is assembled by instantiating the lower-level *flows* that have previously been created per component.

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