Windows Server Installation Guide

Lavastorm Analytics Engine 6.1.3

LAVASTORM
analytics

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Legend

✔	Indicates a prerequisite.
●	Indicates an unordered list.
◊	Indicates a procedure with only one step.
1. 2.	Indicates a procedure with multiple steps.
»	Indicates the result of a procedure.
📄	Indicates a note. A note highlights important information.
💡	Indicates a tip. A tip gives you hints, for example, alternative methods for completing a task.
⚠	Indicates a caution.
Bold text	Indicates user interface text.
`Code font`	Indicates code or system commands.
Menu > Menu item	Indicates navigation to a menu or sub menu item.
[Link]	Indicates a cross-reference to a section within the current document, or a link to an external document.
EXAMPLE	Indicates an example.
Image caption	Indicates an image caption.

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1. Introduction

Welcome to the Lavastorm Analytics Engine 6.1.3 Windows Server Installation Guide.

This installation guide describes the procedure for installing and uninstalling the LAE Server on a Windows machine.

After installation, the LAE license that you have (or will receive) determines which features are available to you.

If you encounter any issues during the install process, please contact Lavastorm Analytics Support at support@lavastorm.com or visit the Lavastorm Analytics forums at http://community.lavastorm.com.

> **Note:** The images in this guide are for illustrative purposes only.

2. Installing the LAE Server on Windows Server

> **Note:** When installing a new version of the LAE software, do not upgrade an existing installation. This will cause your previous installation to be uninstalled and could potentially cause the loss of data. Always perform a fresh installation and then copy over your data.

To install the LAE Server on a Windows Server machine:

1. Locate the install program *Lavastorm Analytics Engine 6.1.3.exe*.

2. Right-click the executable file and select **Run as administrator**.

   > **Note:** You must run as administrator. If you do not run the installer as administrator, it will produce errors and fail to complete. The installer will then display a series of windows, requesting information from you.

3. Accept the license agreement.
   » A **Select Destination Directory** window opens:
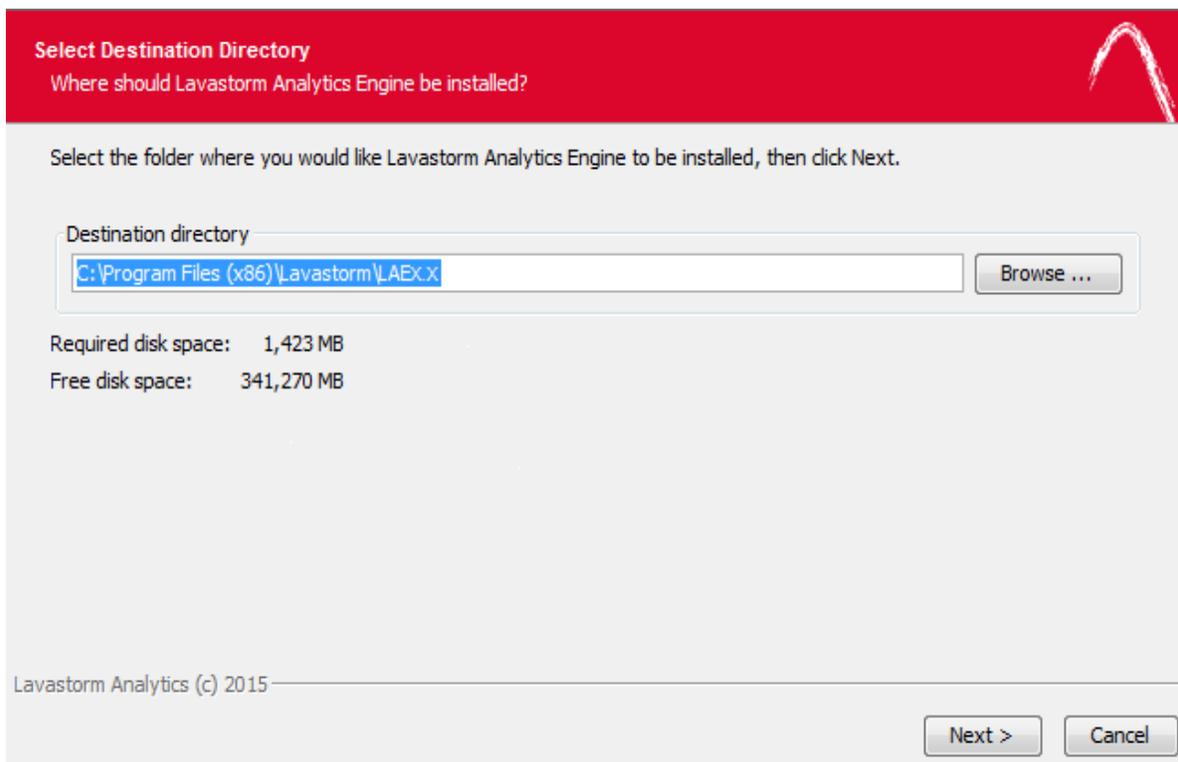
4. Accept the default setting, or modify it to specify a different location for the LAE Server.

» A **Select Installation Type** window opens:
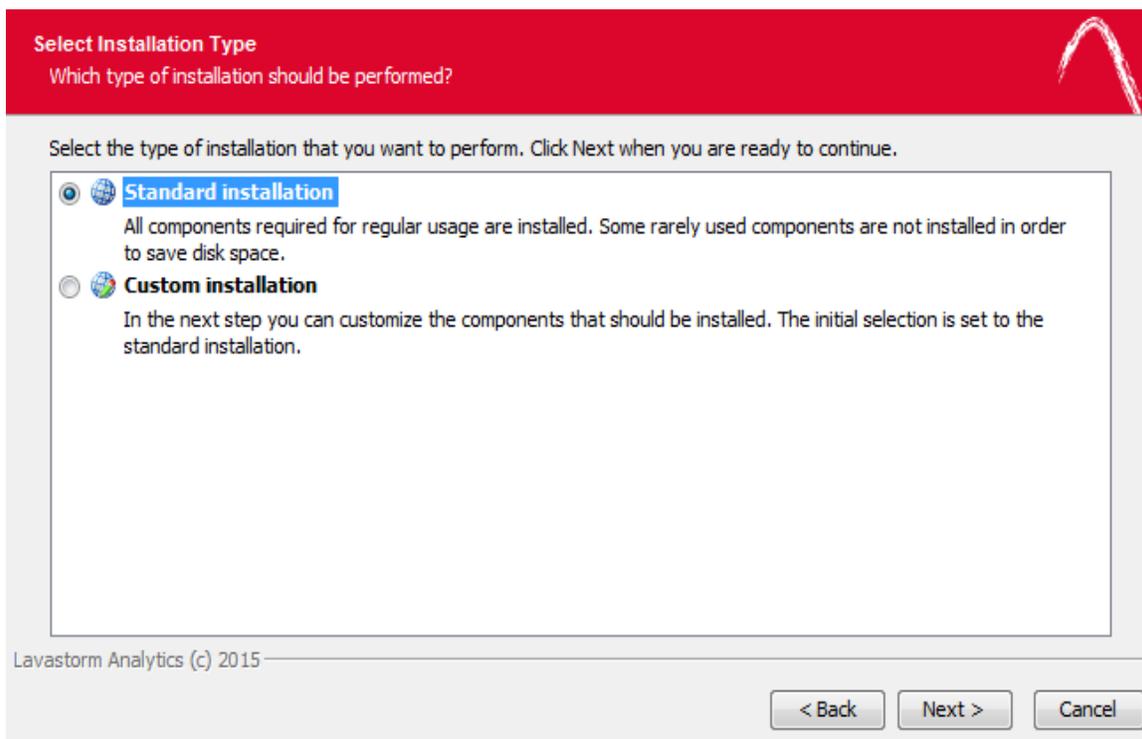
5. Accept the default setting for **Standard installation**, or select **Custom installation** to modify the components to be installed, for example, select **Custom installation** if you do not wish to install the LAE Web Application as part of the current server installation.

» If you selected **Custom installation**, a **Select Components** window opens:
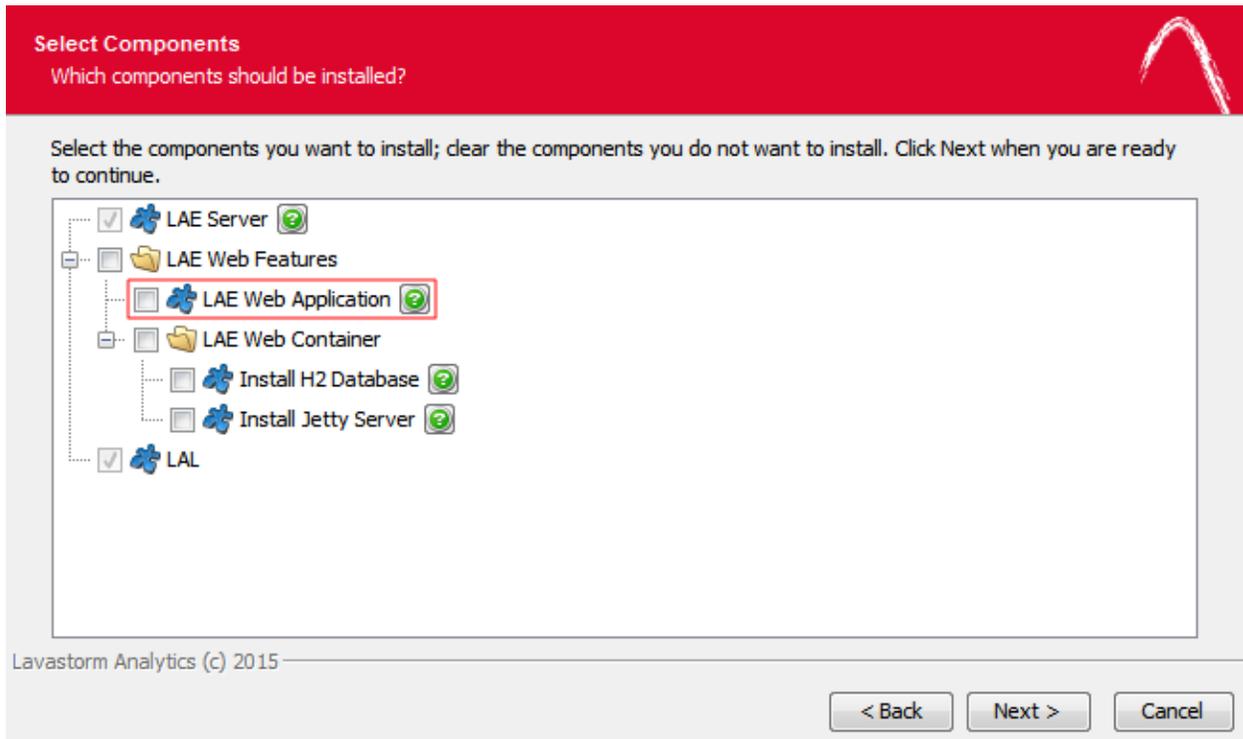
Note: You must install both the LAE Web Application and the LAE Server on your main server. However, if your installation is part of a server farm, you do not need to install the LAE Web Application on every server.

6. If you do not wish to install the LAE Web Application, clear the LAE Web Application check box and click **Next**.

» An **LAE Configuration** window opens:
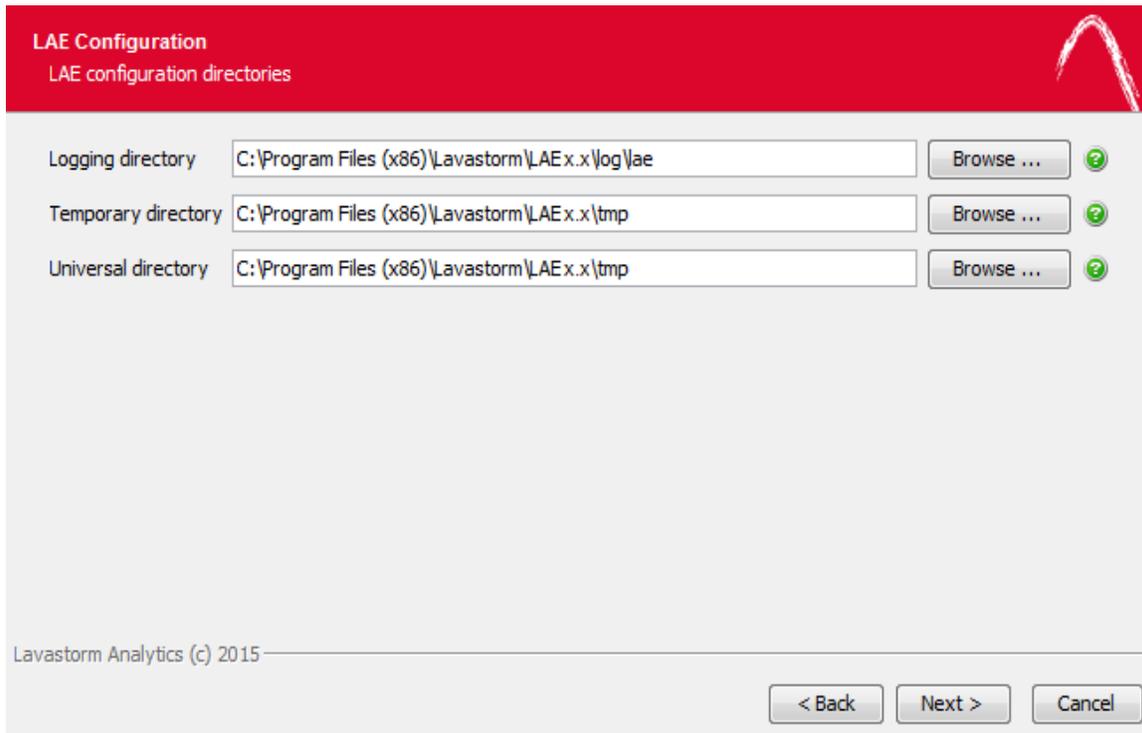
7. Accept the paths for the logging, temporary and universal directories, or modify them to specify alternate locations.

> **Note:** The temporary directory could get very large, because this is where LAE keeps all the data on every pin in a graph when the graph executes. Ensure that the temporary directory that you choose has enough space for this.

» An **LAE Server Configuration** window opens:

8. Accept the default settings, or modify them to specify a different server port, hostname or data I/O method. If you are upgrading from a previous version of the product, you will also need to choose whether to deploy legacy jars.

> **Note:** Setting the LAE Server hostname to anything other than *UNDEFINED* will cause the LAE Server to bind to the interface associated with that specific hostname, and the LAE Server will be unable to be reached via any other interface, for example, localhost. Most users will want to leave this value as *UNDEFINED*.

> **Note:** With 6.1.3, the core Lavastorm jars have been updated with new versions. By default, the option to deploy legacy jars is selected, meaning that if you are upgrading from a previous version of the product, your existing LXAs will continue to function correctly. However, due to a number of security vulnerabilities within the legacy jars, we recommend that you deselect the option to deploy them and instead re-create your LXA files within the 6.1.3 BRE client.

» If you opted <u>not</u> to install the LAE Web Application as part of the current server installation, a Web Application window opens:
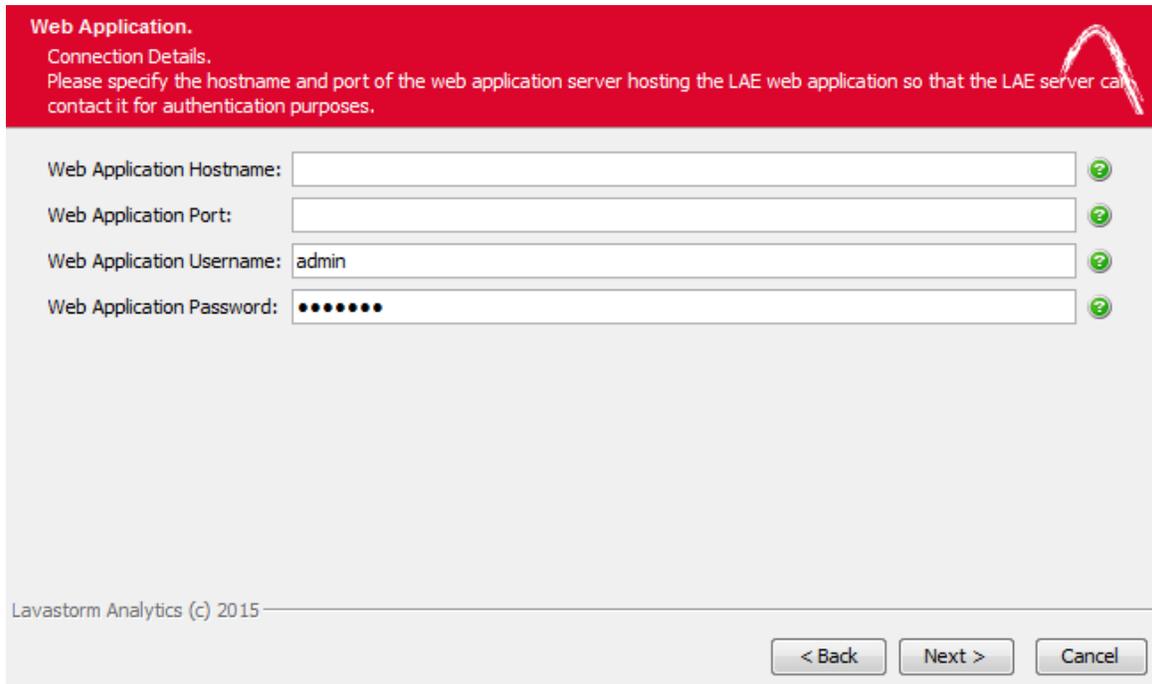
9. Add the **Web Application Hostname** and **Web Application Port** details to point to the main server where the LAE Web Application is installled.

» If you opted to install the LAE Web Application, a **Jetty Server Information** window opens:
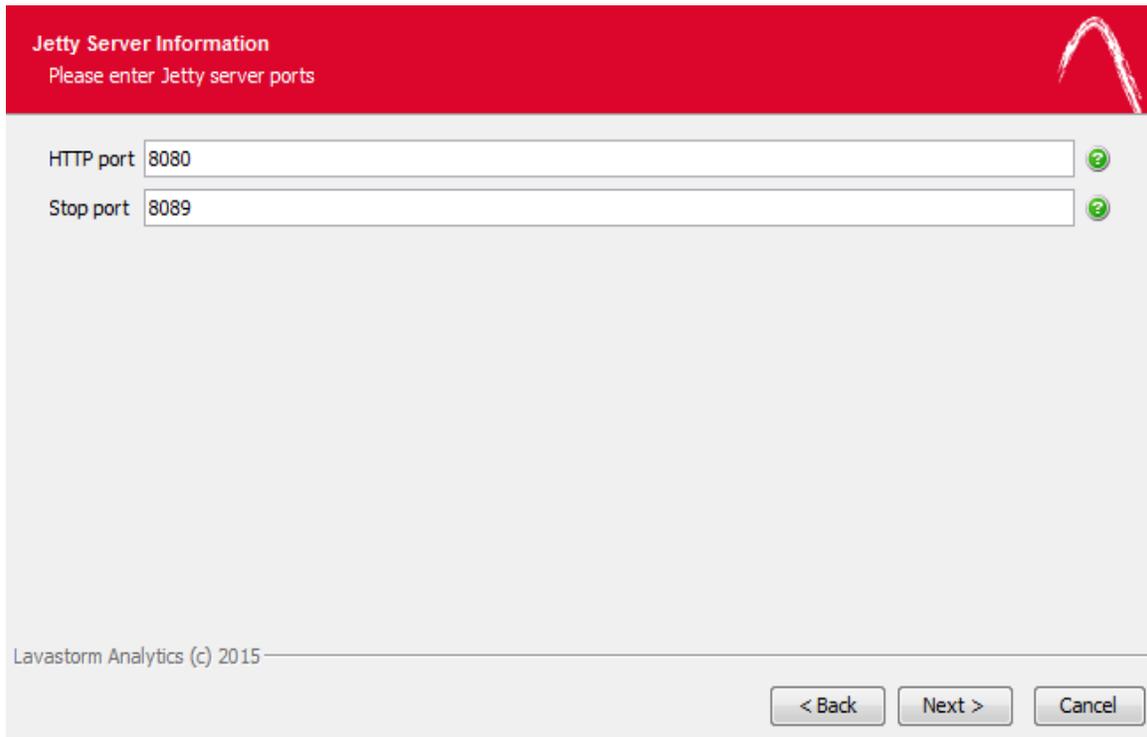
10. Accept the default settings, or modify them to specify a different **HTTP port** or **Stop port**.

» If you opted to install the LAE Web Application, a **H2 Database Information** window opens:

11. Accept the default setting, or modify it to specify a different **Database port**.

» If you opted to install the LAE Web Application, an **LDAP/Active Directory Information** window opens:
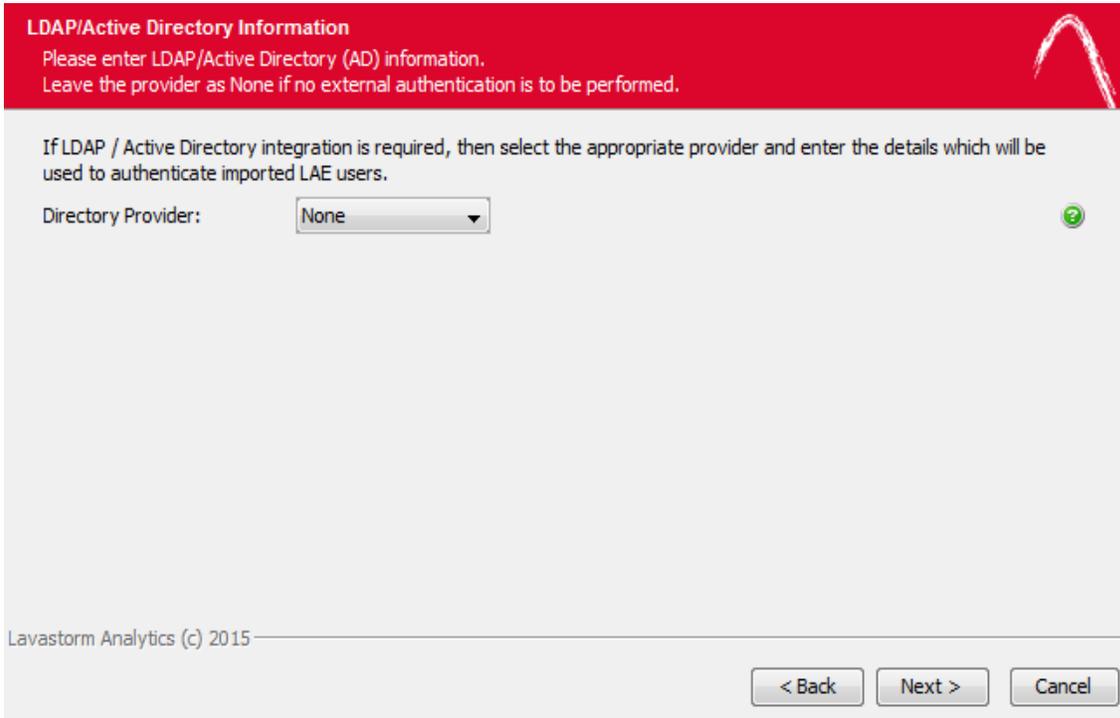
12. If you wish to configure LAE to authenticate your users via LDAP or Active Directory, select **Active Directory** or **LDAP** from the **Directory Provider** menu. You will then be asked to enter some further connection details. If you selected **Active Directory**, see Configuring AD authentication below or if you selected **LDAP** see Configuring LDAP authentication on the next page.

- Or -

If you do not wish to authenticate your users externally, select **None** from the **Directory Provider** menu, and click **Next**.

Configuring AD authentication

If you selected **Active Directory**, you will be asked to provide the URL and domain values for your Active Directory system.

a. Enter the complete URL of your AD source system, including protocol, server, port number and root DN, in the following format `<protocol>.<server>:<port number>/<rootDN>`
   EXAMPLE: `ldap://my.directory.server:389/dc=lavastorm,dc=com`

> **Note:** To use a secure protocol, you must include the "`ldaps://`" protocol as a prefix of the URL value. After installation is complete, you must then install security certificates on both your source LDAP/AD server and the LAE web server. Please refer to your vendor's documentation for how to install security certificates.

EXAMPLE: `ldaps://my.directory.server:389/dc=lavastorm,dc=com`

b. Enter the domain of your AD source system. The domain is passed to AD during authentication to identify users on the source system:

EXAMPLE: `lavastorm.com`

c. Click **Next**.

Configuring LDAP authentication

If you selected **LDAP**, you will be asked to provide the URL, User Search Filter and User Search Base values for your LDAP system.

a. Enter the complete URL of your LDAP source system, including protocol, server, port number and root DN, in the following format `<protocol>.<server>:<port number>/<rootDN>`

EXAMPLE: `ldap://my.directory.server:389/dc=lavastorm,dc=com`

> **Note:** To use a secure protocol, you must include the "`ldaps://`" protocol as a prefix of the URL value. After installation is complete, you must then install security certificates on both your source LDAP/AD server and the LAE web server. Please refer to your vendor's documentation for how to install security certificates.

EXAMPLE: `ldaps://my.directory.server:389/dc=lavastorm,dc=com`

b. Enter the **LDAP User Search Filter**. The user search filter defines the attribute that is used to search for users.

EXAMPLE: `uid={0}` where {0} represents the username value that is entered during an LDAP import.

> **Note:** After installation, when performing an LDAP import, the username attribute value must match the user search filter value. For example, if the user search filter is configured as per this example, then "`uid`" should be entered as the username attribute value during an import.

c. Enter the **LDAP User Search Base.** The user search base is used to further drill into specific organization units (OU) within LDAP from the specified root DN, which indicates where to look when attempting to authenticate users.

EXAMPLE: `ou=Users`

d. Click **Next**.

You can maintain and edit your LDAP/AD authentication settings after installation in the web-conf/site.prop file, see the Administration Guide for more information.

> ⚠ **Caution:** There are a number of post-installation steps required to complete your LDAP/AD integration, please see Completing your LDAP/AD integration on page 26.

» An **LAE Security Store Information** window opens:
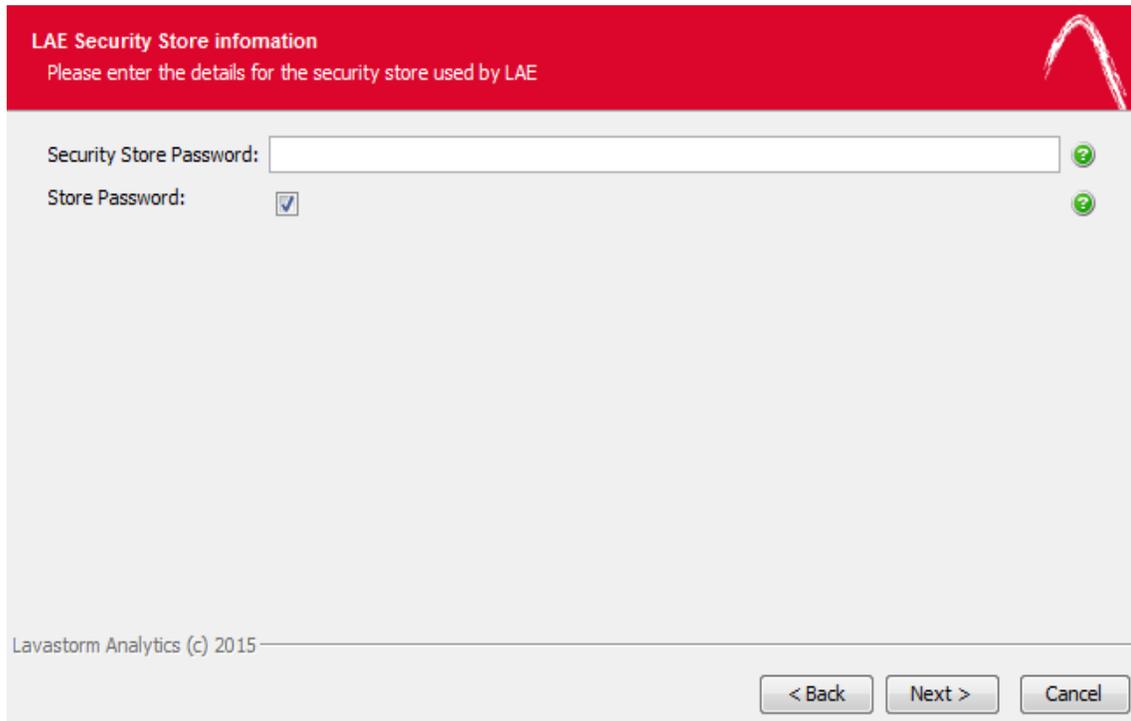
13. Enter a **Security Store Password**.

Select **Store Password** if you wish to save your security store password as an encrypted value in both the web-conf/site.prop and the conf/site.prop configuration files. For increased security, do not select **Store Password**. In this case, you will be asked to enter the security store password when the LAE Web Application is started, before you reach the login screen.

The security store safely stores encrypted values, such as the LDAP/AD import binding user password so that after performing an LDAP/AD import, the binding user can perform an LDAP/AD synchronization task without having to re-enter their password.

After installation, you can use the laeConfig command line tool to update the details as required, see the LAE Administration Guide for more information.

» A **Select Start Menu Folder** window opens:
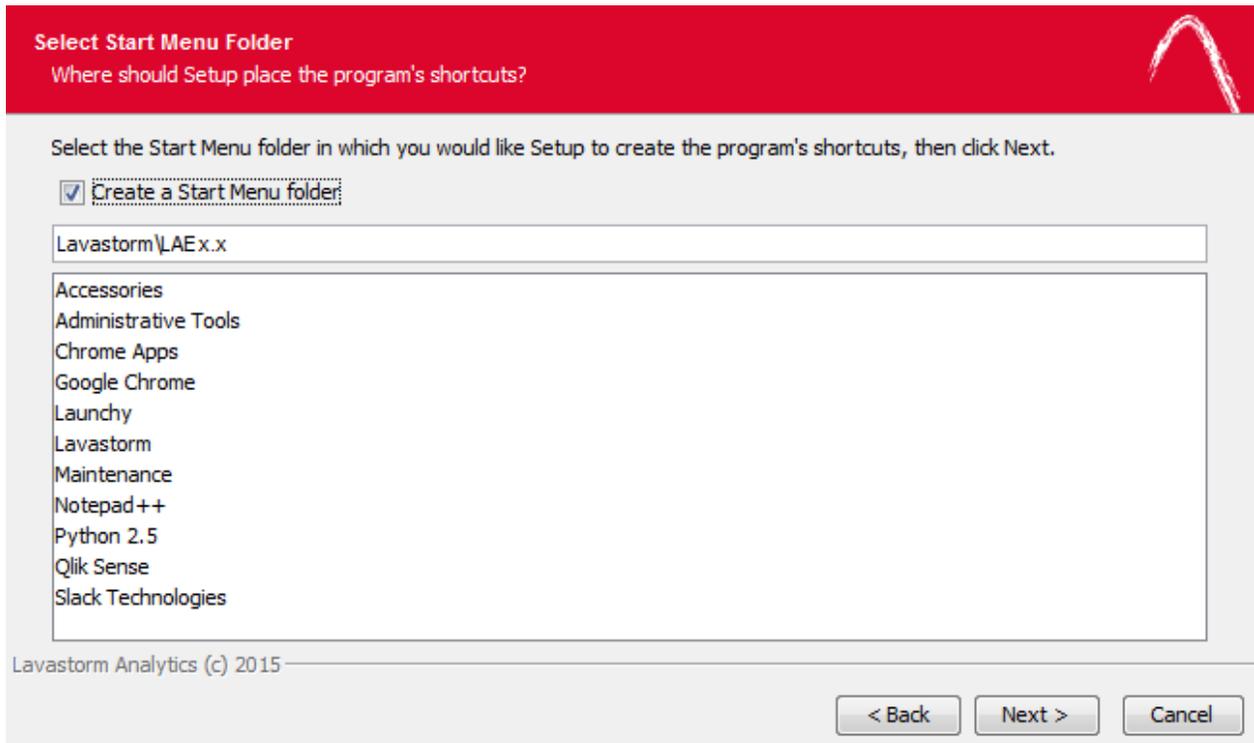
14. Accept the default setting, or modify it to specify a different location for the LAE Server shortcuts.

15. Click **Next** to start the installer.

» When the installer finishes, it displays one final window:
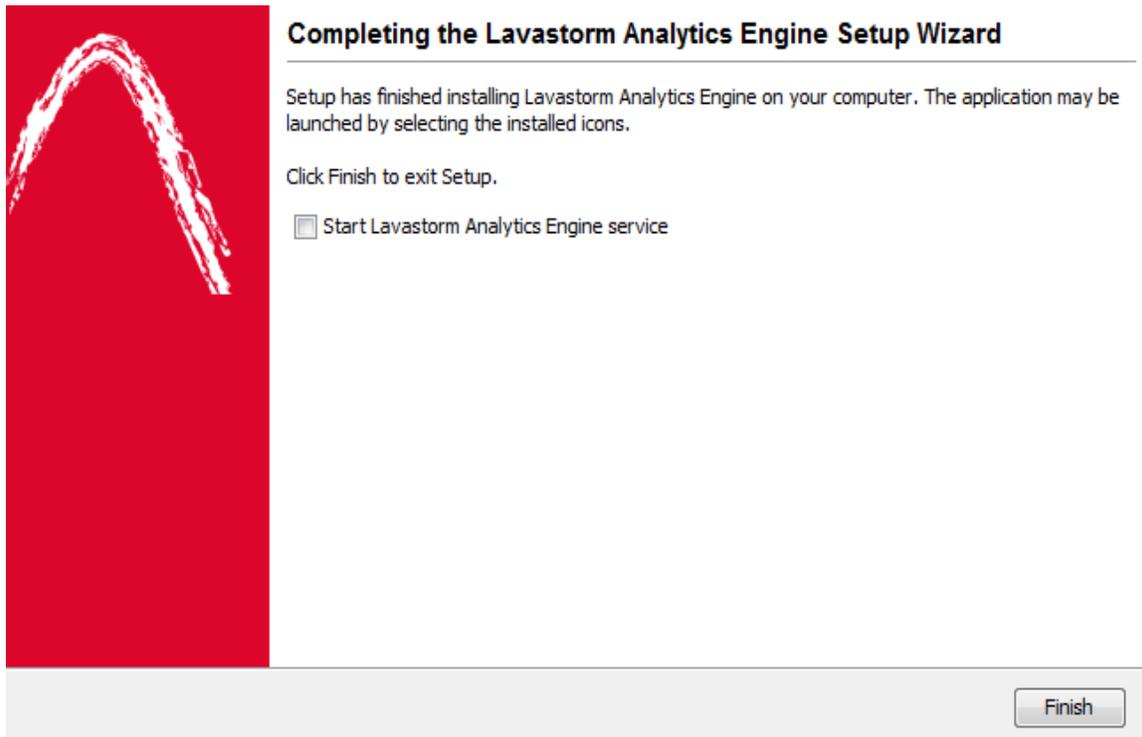
16. Select or clear the **Start Lavastorm Analytics Engine service** check box, according to your preference.

17. Click **Finish** to complete the installation.

18. You must open BRE and apply your LAE license to the LAE Server before you attempt to log in to the Web Application.

2.1 Java heap space

By default, the heap size is set to 25% of your RAM or 1G, whichever is smaller.

If you need to adjust the heap size, you can use the examples given in the following steps as a guide:

1. Navigate to <server-install-dir>\bin

2. Create a file in the bin directory called: lavastormJettyServerService.vmoptions

3. Edit the file to include the appropriate JVM arguments. For example, you may need to edit the file to adjust the maximum heap size parameter:

    –Xmx<heap-size>

    EXAMPLE: -Xmx1024M, where 1024M is replaced with a maximum heap size that is appropriate for your system settings.

    - Or -

    You may need to edit the file to adjust the maximum permanent generation size parameter:

    -XX:MaxPermSize=<max-perm-size>

    EXAMPLE: -XX:MaxPermSize=512M, where 512M is replaced with a maximum permanent generation size that is appropriate for your system settings.

3. Updating Web App database from 6.x to 6.1.3

Users upgrading from a 6.0. or a 6.1 installation will need to follow some additional steps in order to migrate their existing data to 6.1.3.

3.1 Built-in H2 database

When you run the installer, it will detect any existing H2 databases and ask you if you want to migrate, and it will list all available installations of LAE on the server that you are installing onto. When you select one of these installations, the installer will copy the H2 database associated with that installation into the new install.

3.2 Non-H2 database

If using a separate non-H2 database, you will need to update that database manually. It is recommended that you back up the existing non-H2 database before proceeding.

1. Locate the SQL scripts in the following directory on the server:

    <root installation directory>/sql/migration/<non-H2 database>

    Under this directory, there are two sub-directories DDL and DML.

2. Connect to the non-H2 database using a SQL tool such as SQL*Plus or SQL Developer.

3. Execute the SQL script under the DDL sub-directory.

4. Execute the SQL script under the DML sub-directory.

    » The non-H2 database has been fully updated and is ready for use.

4. LAE Web Application

4.1 WebLogic 12c installation

This section describes the general procedure for installing the LAE Web application on a WebLogic 12c server running under Windows Server 2008. This document does not cover the installation of WebLogic, the creation of WebLogic domains, or the administration of WebLogic servers. Please refer to the WebLogic documentation for those topics.

The LAE Web Application will be installed on a WebLogic domain server. The domain directory of this server will be referred to as *DOMAIN_HOME* here. If you have installed WebLogic using its default, the *DOMAIN_HOME* is found under the installation root folder at: `/user_projects/domains/mydomain`.

The directory under which you have installed LAE will be referred to as *LAE_HOME*.

Post-LAE installation

1. Do not start the default LAE Jetty server. The web application included with the installation will be configured and run under WebLogic after it has been installed following the steps covered in this document.

   > **Note:** The LAE Web Application must be deployed and running on WebLogic before the LAE Server can be started.

2. If you plan on using the H2 database included with the installation, start the H2 database service.

3. When the LAE installation is complete, start the system service for the LAE Server and apply the license.

Configure WebLogic to run LAE

1. Create a directory named "classpath" under *DOMAIN_HOME*/config.

2. Copy the site.prop file found under *LAE_HOME*/web-conf to the newly created directory, *DOMAIN_ HOME*/config/classpath

3. Edit the `site.prop` file as follows:
    a. Configure the following LAE Server properties:

    i. Set the `ls.lae.container.serverHost` property to the hostname where the LAE Server is installed.

    ii. Set the `ls.lae.container.serverPort` property to the LAE Server listening port.

    b. If you are using Active Directory or LDAP for authentication, configure the LDAP/Active Directory properties in the web-conf/site.prop file. See the LAE Administration Guide for more information.

    c. Set the location of the keystore:
    Set `ls.lae.auth.trust.keyStore` to *DOMAIN_HOME*/config/classpath

    > **Note:** If the LAE Server and LAE Web Application are installed on the same server, trusted host authentication is automatically configured by the installer. Leave the default value for this property.

4. Add the new classpath directory to the PRE_CLASSPATH variable in the domain environment:
    a. Edit *DOMAIN_HOME*\bin\setDomainEnv.bat

    b. Add the line "set PRE_CLASSPATH=*DOMAIN_HOME*\config\classpath" just below the line containing "set WL_HOME".

    > **Note:** Remember to replace *DOMAIN_HOME* with the complete path where your domain server is installed. *DOMAIN_HOME* is only used for documentation purposes.

5. Copy files `log4j-1.2.17.jar`, `wllog4j.jar`, `bcprov-jdk15on-1.50.jar` to *DOMAIN_ HOME*/lib.
    a. `log4j-1.2.17.jar` can be downloaded from
    https://logging.apache.org/log4j/1.2/download.html

    b. `wllog4j.jar` can be found in the wlserver/server/lib directory of the WebLogic base installation, that is, MW_HOME/wlserver/server/lib.

    c. `bcprov-jdk15on-1.50.jar` can be found in *LAE_HOME*/lib/java.

Deploy LAE on WebLogic

1. Start the WebLogic Server:
   > DOMAIN_HOME\startWebLogic.bat

2. Start the Node Manager:
   > DOMAIN_HOME\bin\startNodeManager.bat

3. Create a managed server where LAE will be deployed.
   a. Log in to the WebLogic web console, http://localhost:7001/console

   b. Create a new managed server for LAE. Please refer to the WebLogic documentation to perform this step.

4. Create a new Data Source:
   a. In the admin console, expand the Services link in the Domain Structure panel and click **Data Sources**.

   b. In the Summary of JDBC Data Sources, click the **New** button to expand the drop down menu and select **Generic Data Source**.

   c. For the JNDI name, enter `jdbc/LavaStormDataSource`.

   d. Select your database type.

   e. Click **Next** and select your database driver.

   f. Enter the JDBC parameter appropriate for your database.

   g. In the **Create a New JDBC Data Source** panel, select the server created in step 3.

   h. Click **Finish**.

5. Start the managed server created in step 3.

6. Deploy the Lavastorm Analytics Engine Application on the Lavastorm server:
   a. In the **Domain Structure** panel, click **Deployments**.

   b. In the **Summary of Deployments** panel, click the **Install** button.

   c. If LAE was installed on a different physical machine than the one where the WebLogic server is running, copy *LAE_HOME*/jetty/webapps/root.war from the LAE installation to a directory on the server running WebLogic that is accessible to the WebLogic server.

   d. Navigate to the location of the `root.war` application and select it by clicking the radio button.

   e. Select **Install this deployment as an application** and click **Next**.

f. Check the box next to the Lavastorm server and click **Next**.

g. Click **Next**.

h. Select **No, I will review the configuration later** on the next screen.

i. Click **Finish**.

7. The admin console will return to the Summary of Deployments panel with status messages. If everything was installed correctly, the LAE deployment should indicate a State of Active.

8. The LAE application can now be accessed at http://<lavastorm_server>:<lavastorm_port>/lae.

4.2 Deploying LAE Web Application to Tomcat 7

Note: When starting Tomcat, ensure that the LAE server and the Jetty server are <u>not</u> running.

✓ You have installed LAE, accepting all defaults (including the H2 Database and Jetty Server). This allows the installer to configure the trusted hosts, see .

The location of the LAE Web Application installation is referred to below as <LAE Web Application-installation-directory>. The location of the Tomcat installation is referred to below as <TOMCAT_HOME>.

1. Copy <LAE Web Application-installation-directory>/web-conf/site.prop to <TOMCAT_HOME>/lib/site.prop

2. Copy the database driver jar file to <TOMCAT_HOME>/lib

3. Remove the ROOT directory from <TOMCAT_HOME>/webapps

4. Copy <INSTALL_DIR>/jetty/webapps/root.war to<TOMCAT_HOME>/webapps/ROOT.war

    Note: The LAE war file is case sensitive (ROOT.war).

5. Add the JNDI datasource to <TOMCAT_HOME>/conf/context.xml

6. Start Tomcat.

7. Open a browser and navigate to the application.
    » The application opens and displays the following message: "Cannot connect to the LAE Server".

8. Start the LAE Server.

9. Navigate to the application.
    » The application is now running.

4.3 Completing your LDAP/AD integration

✔ During installation, you entered the domain and server details of your Lightweight Directory Access Protocol (LDAP)/Active Directory (AD) source system (see the LDAP/Active Directory installation step). If you did not enter these details during installation, or if you wish to edit the LDAP/AD domain and server settings after installation, you can configure the relevant properties in the web-conf/site.prop configuration file, see the LAE Administration Guide for more information.

To complete the LDAP/AD integration, you must import users to LAE from your LDAP/AD source system, see the LAE Administration Guide for details of the post-installation steps.

LAE authentication overview

LAE users can be either imported from an external LDAP or Active Directory (AD) system, or created manually in the web application by a user with the role of administrator.

User authentication is orchestrated by the web application, regardless of whether a user logs in to LAE from BRE, or if a user logs in via the LAE Directory page of the Web Application. For LDAP/AD imported users, authentication occurs via the LDAP/AD server. For manually created users, authentication occurs locally in the Web Application. When a user logs in via BRE, their credentials are transmitted from BRE to the LAE server, which then communicates with the LAE Web Application to perform user authentication through either the configured LDAP/AD server or through the local user directory.
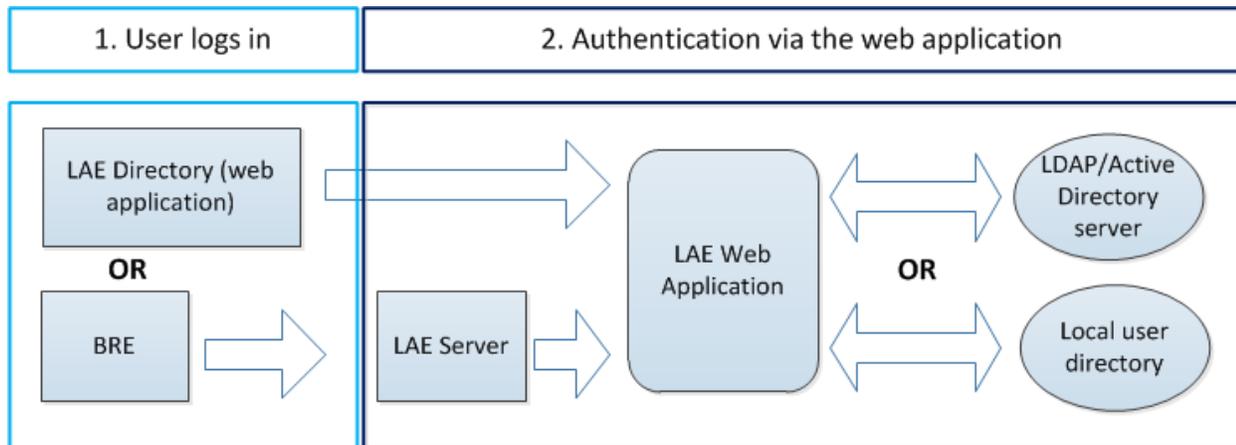
Subsequent communications between the LAE Web Application server and the LAE server(s) is authenticated using host-based authentication, see Trusted host configuration below.

4.4 Trusted host configuration

Host-based authentication works by configuring servers to trust each other. This trust is established by each server generating a public/private key pair for itself, and then sharing the public key with servers that are to be trusted. During host-based authentication, the public key is used to encrypt data in the authentication request. The server that is being authenticated against will ensure that the data was encrypted using its public key and then ensure that the host that is requesting authentication is registered as a trusted host.

Default installation

During installation of the enterprise server software, you choose to either install the LAE Web Application and the LAE Server simultaneously (default) or to install only the LAE Server. If you choose to install only the LAE Server, you enter information about the location of the existing LAE Web Application server, (see Installation) (see Installing the LAE Server on Windows Server). The installer will automatically configure the system such that the LAE Server trusts the LAE Web Application and the LAE Web Application trusts the LAE Server.

In general, the installer should take care of the configuration for you. However, in the event that manual host-based authentication is necessary, please see Server farms and Overview of laeConfig utility

Overview of laeConfig utility

A utility in *$LAEINSTALL/bin*, named *laeConfig*, contains functionality for configuring trusted host authentication. In order to use *laeConfig* you must be in a properly configured LAE environment. This means that you must have executed one of the LAE environment resource scripts:

- For *sh* or *bash*: source .profile.lavastorm

The laeConfig includes a built-in help system that follows the format below:

- *laeConfig help*: general help for the utility

- *laeConfig help auth*: help for commands specific to authentication

- *laeConfig help auth trust*: help for commands specific to trusted host authentication configuration

- *laeConfig help auth trust create*: help exists for each of the specific commands as well

Note that one important argument seen in the laeConfig help is the target. The target specifies what the command is being issued to (in this case either the LAE Server or the LAE Web Application server).

EXAMPLE:

laeConfig --target laeserver://192.168.1.1:8080

If you omit the target argument, it is assumed that the command is being issued to the LAE Server configured in your environment via the previously mentioned environment configuration scripts.

For trusted host authentication configuration, *laeConfig* will be used to issue commands to the LAE Server and/or the LAE Web Application server to establish a trust between the two. The commands executed have options for supplying credentials, which are required for both the LAE Server and the LAE Web Application server.

If you configured LDAP/Active Directory during install, you must use the LDAP/Active Directory credentials for the LAE Web Application server. Otherwise, use the credentials configured on the LAE Server. The options for supplying credentials include via the command line, through environment variables, or via prompting the user at the time the command is executed. The subsequent sections demonstrate the latter (prompting the user). For details on the other options, please review the *laeConfig* help sections.

> **Note:** All of the subsequent trusted host configuration sections will assume you are logged on to the LAE Server environment, have executed the previously mentioned configuration scripts (.profile.lavastorm), and have changed directories to the $LAEINSTALL/bin directory.

> **Note:** All of the commands mentioned in the following sections will respond with "OK" when successful.

Server farms

When installing LAE servers as part of a server farm, trusts must also be established between the controller LAE server, that is, the server that is installed with the LAE Web Application, and the other farm servers. This must be done manually using the laeConfig command line utility.

The installer will generate key pairs for all servers; the only additional manual step is to configure the farm LAE servers to trust the controller LAE server. The following example laeConfig command demonstrates how to configure a farm server to trust the controller server. It is assumed that the command is being run from the farm server's environment. This command requires that the LAE controller server is running. When you run the command, it will prompt you for both the target and remote username and password to configure the trust; assuming that you have followed the installation instructions, then at this point the username and password for both are the same, as all user authentication is unified against the single LAE Web Application.

EXAMPLE:

```
laeConfig auth trust create laeserver://<controller server
host/ip>:<controller server port>
```

4.5 Configuring thread pooling

The LAE Web Application Server will need to regularly communicate with the LAE Server in order to deploy and check the status of graphs. If you intend to use a customized thread pool configuration and to use the LAE Web Application Server features, you will need to configure a pool for the LAE Web Application Server to use.

If thread pooling is in place, the LAE Web Application Server will be configured to communicate with the LAE Server and take from a pool named "automation". When configuring your thread pools you will need to construct an unlimited "automation" pool.

The example pool.config file shipped with LAE contains an example of such a pool.

4.6 Setting up Oracle database with LAE Web Application Server

If you wish to use an Oracle database with your LAE Web Application Server rather than H2, a few additional configuration steps are required.

1. Add the following parameter to the site.prop file:
   `ls.lae.persistence.databaseType=oracle`. By default, this parameter does not exist, so the system assumes an H2 database.

2. Navigate to directory: *< LAE Web Application-installation-directory>/jetty/resources*.

3. Open the *lavastorm_datasource.xml* file.

4. Change *driverClass* to: *oracle.jdbc.driver.OracleDriver*.

5. Change *jdbcUrl* to: *jdbc:oracle:thin:@<lae-server-hostname>:<oracle-port>:<oracle-database>.*

6. Change *User* and *Password* to the login credentials for your Oracle database.

7. Navigate to directory: *< LAE Web Application-installation -directory>/jetty/lib/ext*.

8. Copy your Oracle *.jar* file into the *ext* directory. It will typically be named *ojdb6.jar*.

9. Create tables in the database by running the following two SQL scripts:

   - *tables_oracle_quartz.sql*

   - *tables_oracle_lavastorm.sql*

4.7 Enabling a custom Web Application context path

The login path that is used by the LAE Server to authenticate against the Web Application is configurable to support different context paths.

If you wish to deploy the Web Application under a context other than root:

1. Add the following property to the LAE Server conf/site.prop file located at *<LAE Web Application Install Directory>*/conf/site.prop:
   `ls.brain.webapp.context=<context path>`

   EXAMPLE: If the login path used by the LAE Server to authenticate against the Web Application is `http://172.16.36.65:8081/lavastorm/`, then the site.prop file should be configured as follows:
   `ls.brain.webapp.context=/lavastorm`

2. Rename the Web Application Server `root.war` file to match your context path.

   EXAMPLE: If the login path used by the LAE Server to authenticate against the Web Application is `http://172.16.36.65:8081/lavastorm/`, as in the example in step 1, then the `root.war` file should be renamed to `lavastorm.war`.

5. User-hosted auto-update server

Users who do not wish to receive auto-updates to their client machines from the Lavastorm download server can host the updates internally on their own web server. The only prerequisite is that the user has an existing web server available from the client machines on which to locate the Lavastorm files.

> **Note:** Windows users must have administrator rights to install updates.

1. Within the section of the web container that is available on the web, create the following directory structure:
   `…/lae/<version>/`

   EXAMPLE:
   http://localhost:8080/downloads/lae/6.0/

2. Retrieve the `updates.xml` file and the .exe installer from the `downloads.lavastorm.com` update server.

3. Place the `updates.xml` file and the .exe installer in the `…/lae/6.1.3/` directory.

4. When installing LAE, enter the following with the appropriate path for your web server as the Update URL: http://localhost:8080/downloads/lae/6.0/updates.xml

When placing the initial files or a subsequent installer .exe in the `…/lae/6.1.3/` directory, edit the `updates.xml` file and ensure that the `fileName` and `newVersion` fields in each entry match the file name and version of the .exe. If you rename the .exe and do not update the .xml file, the software will not update.

6. Starting and stopping the server

✓ You have installed the LAE Server, see . As part of the installation, the LavastormLAEServer service is created. Depending on the specific settings of your installation, the LavastormH2Database and the LavastormJettyServer services are also created on your machine. You can start, stop or configure the LAE services by using the Windows Control Panel.

⚠️ **Caution:** From LAE 6.1 onwards, the LAE server authenticates against the LAE web application, therefore the web application must be running prior to starting the LAE server. Similarly, if the shutdownServer scripts are to be used, the web application must be running.

1. From the Windows Start menu, click **Control Panel**.

2. Click **System and Security**.

3. Click **Administrative Tools**.

4. Double-click **Services**.

   » The Services window opens and displays a list of services.
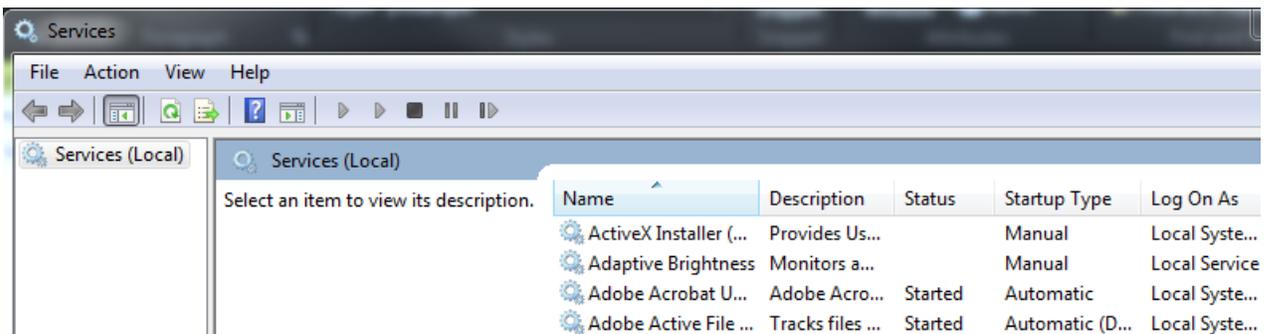
   EXAMPLE: The following example shows (from left to right) the LAE Servers, their Description, Status, Startup Type and Log On As information. The port numbers are those that are set during installation.

5. Right-click a service to display the context menu.

6. From the context menu, you can choose to **Start**, **Stop** or **Restart** the server. You can also select **Properties** to configure the server settings. For example, you can select a Manual or Automatic Startup Type. By default, the server Status is set to Started and the Startup Type is set to Automatic.

7. User credentials

> **Note:** After installation, you are assigned the following default user credentials:
> User name: admin
> Password: welcome

> **Caution:** As a first step after installation, we recommend that you change your password the first time that you sign in to the LAE Directory. A second step, before working with the LAE Directory, is to upload all necessary node libraries.

For more information on changing your password and uploading node libraries, please see the LAE Administration Guide.
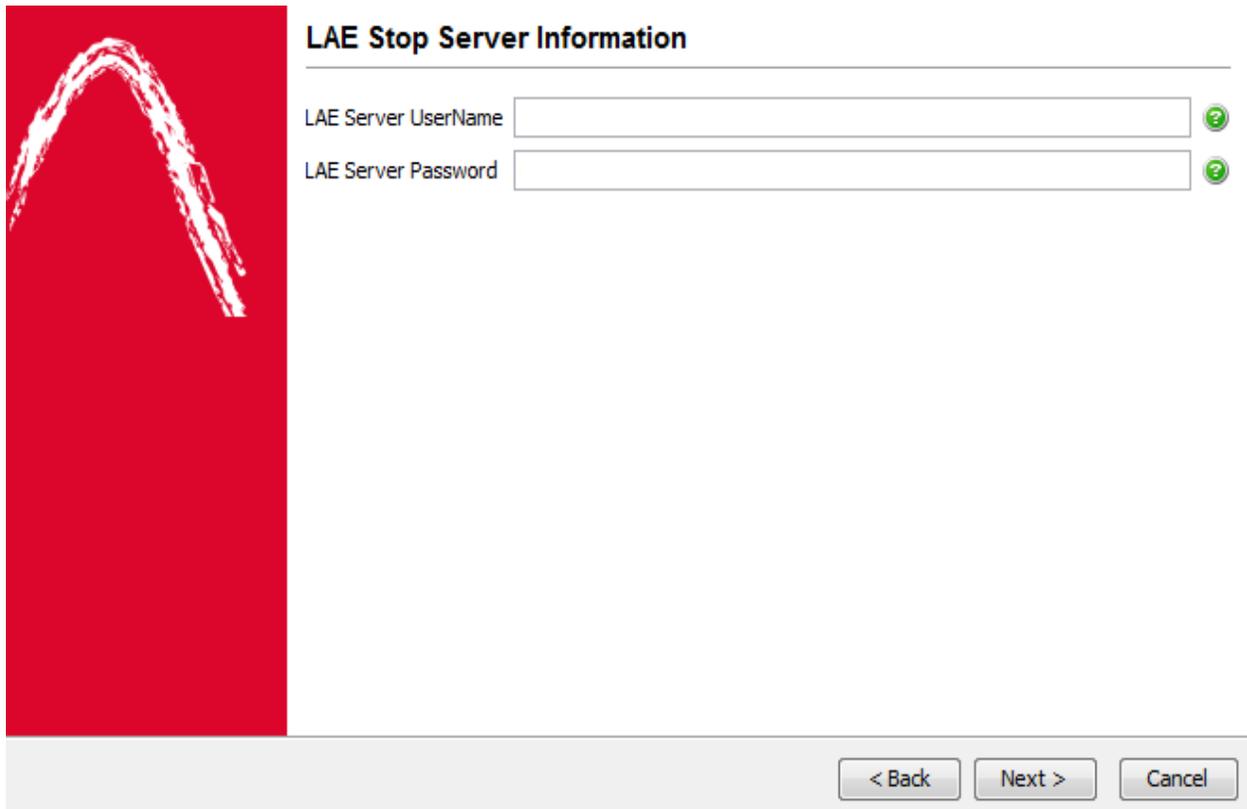
8. Uninstalling LAE Server on Windows Server

⚠️ **Caution:** Ensure that the administrator user's password is reset to "welcome" in order to successfully run the uninstall process. You can change your password through the LAE Directory, please see the LAE Administration Guide for more information.

To uninstall the LAE Server:

1. Click the Start menu, then locate the shortcut section for LAE. It should be in the location that you specified during installation; the default is "Lavastorm -> LAE6.1.3".

2. Under the shortcut folder in the Start menu, select the **Lavastorm Analytic Engine Uninstall** item, to launch the uninstall program.

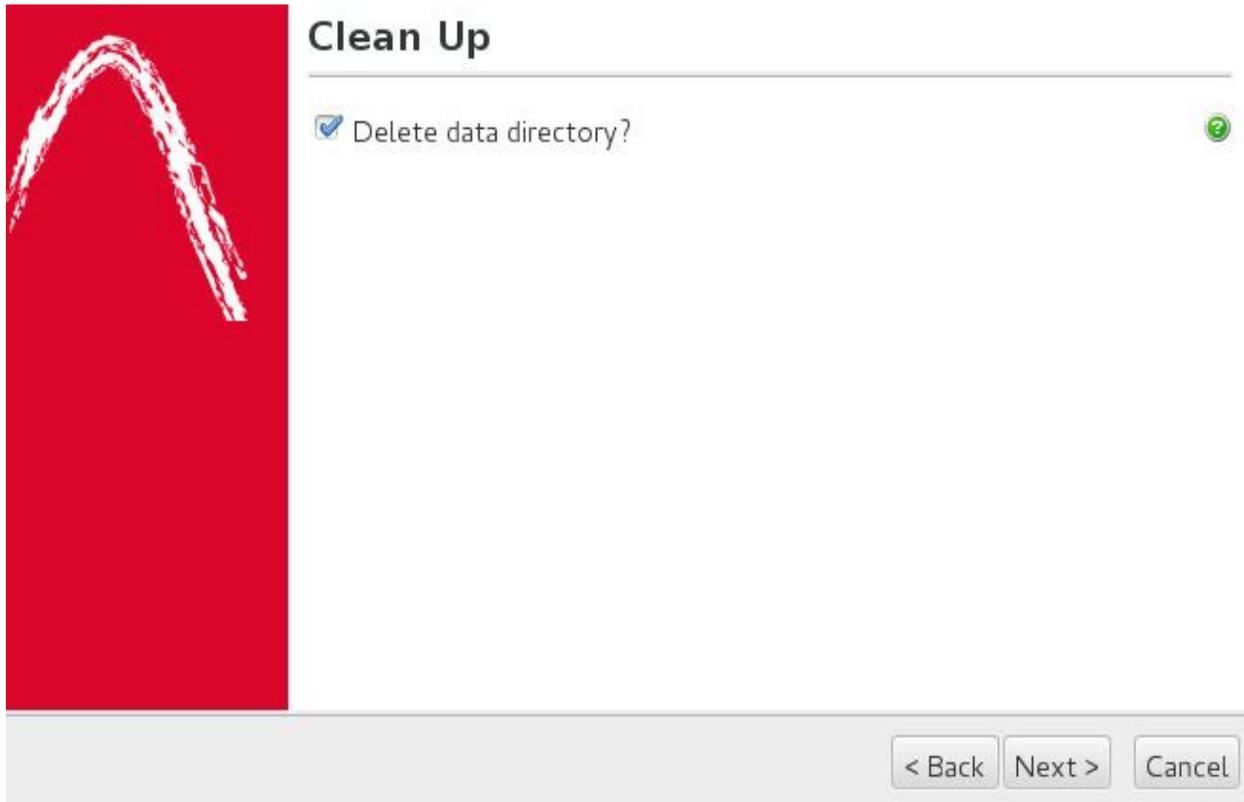   » A **LAE Stop Server Information** window appears:

3. Ensure that the login credentials are correct, and click **Next**.

» A **Clean Up** window appears:

4. Select the check box if you would like to delete the data directory.

5. Click **Next** to perform the uninstallation.

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Document ID: LAE-6.1.3-INS-SER-1
Date of Publication: Friday, June 24, 2016