**Oracle® Enterprise Data Quality Address Verification Server Installation and Upgrade Guide**

# *Installation and Upgrade Guide*

Enterprise Data Quality (EDQ) Address Verification consists of two components:

- The Address Verification Server is installed using the ZIP file obtained from the Oracle Software Delivery Cloud.

- The Global Knowledge Repository is the data used by Address Verification, which must be purchased directly from Oracle's partner, Loqate.

To install and configure these components, follow the procedures in this document.

- Installing the Address Verification Server

- Upgrading EDQ Address Verification

- Configuring Address Verification Server

- Enabling Certified Address Verification Outputs

- Troubleshooting the Installation

- Related Documents

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## Conventions

The following text conventions are used in this document:

| Convention | Meaning |
|---|---|
| **boldface** | Boldface type indicates graphical user interface elements associated with an action, or terms defined in text or the glossary. |
| *italic* | Italic type indicates book titles, emphasis, or placeholder variables for which you supply particular values. |
| `monospace` | Monospace type indicates commands within a paragraph, URLs, code in examples, text that appears on the screen, or text that you enter. |

# Installing the Address Verification Server

This section describes the prerequisites for installing Address Verification Server, and how to install it on different EDQ Server environments.

## Installing Prerequisites

EDQ AV requires version 9.0.10 or later of EDQ to be installed.

For more information about installing EDQ, see the *Oracle Enterprise Data Quality Installation Guide* for the release you want to install.

## Additional Components You Can Install

The other components that can be selected during installation are:

- Install Manager: installs the required data files, purchased separately from Loqate.

- Batch Processor: allows standalone use of EDQ Address Verification

- Demo Interface: allows EDQ Address Verification to be tested without an EDQ environment.

## Obtaining the EDQ Address Verification Product

The EDQ Address Verification ZIP installation file can be downloaded from the Oracle Software Delivery Cloud. Use the following procedure:

1. Enter the Oracle Software Delivery Cloud URL into a web browser:

   http://edelivery.oracle.com/

2. Click **Sign-in/Register**.

   > ✎ **Note:**
   >
   > If you are not already logged in, the Oracle Single Sign-On page appears. Enter your Oracle user id and password and click **Sign In**.

The Terms & Restrictions page appears

3. Click the Oracle Software Delivery Cloud Trial License Agreement and the Export Restrictions check boxes, and then click **Continue**.

   The Media Pack Search page appears.

4. On the Media Pack Search page, do the following:

   a. Click the Select Product Pack drop-down list and select or **Oracle Fusion Middleware** from the Select a Product Pack drop-down list.

   b. Click the Platform drop-down list and select the platform on which you are installing EDQ.

   c. Click **Go**.

   The Results list expands to show all available media packs that include your search criteria.

5. Select the **Oracle Enterprise Data Quality Address Verification Server** Media Pack option.

6. Click the **Download** button.

7. Browse to the directory where you want to save the file. Click **Save** to start the file download. A ZIP file is downloaded.

8. Extract the ZIP file to a temporary directory.

## Installing Address Verification On a Windows Environment

1. Extract the EDQ Address Verification ZIP file to the chosen directory on your EDQ Server.

2. Navigate to the `windows` sub-directory of the extracted directory.

3. Right-click the installation file suited to your Windows environment and select **Run as administrator**:

   • Windows 32-bit environment: `setup.exe`

   • Windows 64-bit environment: `setup_x64.exe`

   > **✎ Note:**
   >
   > If installed using the standard Windows installer, EDQ is configured to run in a 32-bit Java Virtual Machine (JVM), even on a 64-bit operating system such as Windows 7. Therefore, before installing the 64-bit version of the AV Server it is important to ensure that EDQ is running in a 64-bit JVM. See the Troubleshooting section of this document for more details.

4. Specify the installation directory. The default is `C:\Program Files\EDQAV\` though you can specify a different directory.

5. Select the C++ API, Java API, and Install Manager components for installation. The other components are optional.

The penultimate installer wizard window contains the path to the Install Manager component. Make a note of this path so you can run the Install Manager once the installation is complete and verified.

6. When the installation is complete, ensure that the `av.properties` file in the `oedq_local_home/av` directory of the EDQ installation points to the Address Verification Server installation location. See Configuring Address Verification Server for further details.

7. If you changed your `av.properties` file, then restart the EDQ Application Server.

8. Verify that the `SYSTEM` path variable has been added. For example:

    a. On a Windows 7 operating system, open the **Control Panel** then double-click **System**, and then select **Advanced system settings**.

    b. Select the **Advanced** tab

    c. Click **Environment Variables**.

    d. If the `PATH` variable does not contain the Address Verification installation path, add it manually using a semicolon to separate it from the other paths listed.

    e. Restart your server.

## Installing Address Verification On a Linux or UNIX Environment

To install the Address Verification Server onto a Solaris, AIX, or Linux environment use the following procedure:

1. Extract the EDQ Address Verification ZIP file to a temporary directory on your EDQ Server.

2. Go to the sub-directory relating to your server platform, `aix`, `hpux`, `linux`, or `solaris`.

3. Ensure that the permissions for the installer file allow you to run it or change them using the `chmod` command.

    For example, for the Solaris installer the command would be:

    ```
    chmod +x solaris_installer
    ```

4. For installations in an AIX or Solaris environment, you must perform some additional steps to configure Address Verification Server:

    a. Set the `LD_LIBRARY_PATH` (Solaris) or `LIBPATH` (AIX) to the directory containing the Loqate libraries for the platform.

    b. Edit the `av.properties` file to set `loqate.jar` not `loqate.libdir`.

5. Run the installer for your server platform. For example, `./linux_installer_x86`.

> **✎ Note:**
>
> There are two Linux installer files: linux_installer_x86 for 32-bit environments, and linux_installer_x64 for 64-bit environments.
>
> There is one installer files for AIX.
>
> There are two Solaris installer files (for SPARC and x86-based systems respectively). The Solaris SPARC installer requires a 64-bit environment.

6. Specify the installation directory. The default is `/opt/edqav` though you can specify a different directory.

   The Address Verification components are displayed in a numbered list. The currently selected components are indicated by an asterisk to the left of the component.

7. Select **8** to continue the installation and install the default components.

8. The penultimate installer wizard window contains the path to the Install Manager component. Make a note of this path so you can run the Install Manager once the installation is complete and verified.

9. When the installation is complete, ensure that the `av.properties` file in `config/av` directory of the EDQ installation points to the AV Server installation location. See Configuring Address Verification Server for further details.

10. If the `av.properties` file has been changed, restart the EDQ Application Server.

## Installing Published Processors

You can install these two published processors that summarize the results of the Address Verification processor:

- The Summarize Address Verification processor is a published processor that summarizes the results of the Address Verification processor. It reads the `av.AccuracyCode` flag added by Address Verification and produces a number of results views that indicate how many records were verified, to which level, whether postal codes were modified or not, and other views.

- The Summarize GeoCoding Results processor is a published processor that runs on the data after Address Verification where the geocoding option is enabled, and summarizes the GeoCoding results in terms of accuracy.

The processors are contained in a .dxi file in the `additional processors` directory of the extracted Address Verification ZIP file.

To install the processors:

1. Do one of the following to begin the installation:

   - Start EDQ Director. Select **File**, then select **Open Package File...**. Go to the `additional processors` directory, and then double-click on the **Summarize Address Verification.dxi** or **Summarize GeoCoding Results.dxi** file.

- Start EDQ Director. Go to the `additional processors` directory and then drag the **Summarize Address Verification.dxi** and **Summarize GeoCoding Results.dxi** files into the Project Browser.

- Go to the `additional processors` directory then double-click one of the .dxi files to start EDQ Director.

2. Click and drag the **Summarize Address Verification** and **Summarize GeoCoding Results** processors into the **Published Processor** directory to complete installing these processors.

## Installing the Global Knowledge Repository

The Global Knowledge Repository, comprising the data used by Address Verification, must be purchased directly from Oracle's partner, Loqate. The repository is installed by running the Install Manager, an Address Verification component which is added during installation.

For instructions to install the Global Knowledge Repository data files for Address Verification using the Install Manager, use the documentation provided at the Loqate web site at

https://support.loqate.com/oracle-guide/

Oracle recommends that you use the following directories when you install the Global Knowledge Repository data files:

- Windows: `C:\Program Files\EDQAV\data`.

- Solaris, AIX or Linux: `/opt/edqav/data`.

You must ensure that your installation directories are correctly specified in the `av.properties` file, see Configuring Address Verification Server for further information.

> **✎ Note:**
>
> If you have multiple EDQ Servers that all require the use of Address Verification, both the Address Verification Server and data files can be mounted on a network file system and shared between multiple servers.

## Upgrading EDQ Address Verification

This section describes how to upgrade the Address Verification Server and the Global Knowledge Repository.

You must upgrade both the Address Verification Server and the Loqate Global Knowledge Repository data files that it uses. Newer versions of the Address Verification Server will not work with old versions of the Global Knowledge Repository data files.

You must obtain the Global Knowledge Repository data files from Oracle's partner Loqate at

## Upgrading Your Address Verification Server

Use the following procedure to upgrade Address Verification Server:

1. Rename (or backup then delete) the current directory or directories containing your Address Verification Server and its data files.

2. Install the new version into the directory location where the previous version was installed. It is not necessary to change any system path variables, nor the `av.properties` file that EDQ uses to find the Address Verification Server.

## Upgrading the Global Knowledge Repository

You can upgrade the Global Knowledge Repository without upgrading the Address Verification Server to ensure that you are using the most recent address data.

You can use the Install Manager, which verifies the software version and provides only the data that is valid for the installed version. Alternatively, you manually upgrade the can Global Knowledge Repository using the following steps:

1. Stop the Address Verification Server.

2. Back up the contents of the existing data directory to another file location.

> 💡 **Tip:**
>
> You can delete these files when the upgrade is completed successfully.

3. Copy the new Global Knowledge Repository data files, that you obtained from Loqate, into the data directory.

4. Start your Address Verification Server.

## Configuring Address Verification Server

After the EDQ Address Verification API and data files are installed, EDQ must be configured to use them. You must modify the `av.properties` file found in the `av` subdirectory of the EDQ local home directory.

This file must contain the correct paths to the installed Address Verification software and data, as defined in the following properties:

- `loqate.datadir`: The location of the Loqate data.

- `loqate.libdir`: The location of the EDQ Address Verification library files.

- `loqate.jar`: The location of the Loqate JAR file.

The values of these properties vary depending on your installation environment. Oracle recommends the following:

| Configuration Property | Suggested Windows Path | Suggested UNIX Path |
|---|---|---|
| `loqate.datadir` | `C:\\Program Files\\EDQAV\\data` | `/opt/edqav/data` |
| `loqate.libdir` | The DLL directory must be on the system path (this property is not required.) | The directory need not be on the system path. This property is used to set the location, for example: `loqate.libdir = /opt/edqav/` |
| `loqate.jar` | `C:\\Program Files\\EDQAV\\loqate.jar` | `/opt/edqav/loqate.jar` |

Note the following:

- On UNIX operating systems, the library directory must be set on the shared library path. On AIX, use `LIBPATH`; for all other UNIX operating systems, use `LD_LIBRARY_PATH`. This requirement does not apply to Linux operating systems.

- If you edit the `av.properties` file, you must restart your EDQ Application Server.

## Enabling Certified Address Verification Outputs

The EDQ Address Verification processor supports the output of certified data formats. The following certifications are supported:

- SERP (for Canada)
- CASS (for United States)
- AMAS (for Australia)

CASS and AMAS use additional libraries which need to be installed in the same directory as the EDQ AV binaries. You need to ensure that the path to this directory is added to the `LD_LIBRARY_PATH` environment variable.

Each of the certified output formats requires the license of the appropriate data files from Loqate. Once a license that enables this data has been procured, the Loqate Install Manager is run to install the additional data files and in the case of CASS and AMAS, the additional libraries.

For more information, see section "Support for certified Address Verification outputs (SERP, CASS and AMAS)" at http://www.oracle.com/technetwork/middleware/oedq/edq1221nf-2744179.pdf

## Troubleshooting the Installation

This section describes common errors encountered when installing EDQ Address Verification, and how to resolve them.

## Incomplete Installation

**Error**

A process containing the Address Verification processor is run, and all the output fields are blank except for `av.Accuracy Code`, which has a value of `-1.0`. Additionally, an error is recorded in the main EDQ server log file, `oeqd_home/logs/main0.log`, in the following format:

```
WARNING: [dd-MMM-yyyy hh:mm:ss: OAV Java API jar "[path to loqate.jar]"
does not exist.
```

**Cause**

Address Verification was not installed in the path referred to in the `av.properties` file. Verify that the software has been installed and that the paths in this file are correct. At a minimum, the following API files must be installed:

| Windows EDQ Server | Linux/Solaris/AIX EDQ Server |
|---|---|
| `lqtcr.dll` | `liblqtcr.so` |
| `loqate.jar` | `liblqtjava.so` |
| `lqtjava.dll` | `loqate.jar` |

**Resolution**

Perform the installation process again.

# 64-bit Installation Where EDQ is Running in a 32-bit JVM

**Error**

After installing EDQ Address Verification Server, the following error may be written to the `main0.log` file when the EDQ Application Server starts:

```
WARNING: 07-Mar-2012 07:19:56: widget bean
com.datanomic.director.widget.loqator.server.LoqatorBean reported as dead:
Failed to load OAV JNI library lqtjava: C:\Program Files\EDQAV
\lqtjava.dll: Can't load AMD 64-bit .dll on a IA 32-bit platform (Code:
247,005)
```

**Cause**

This error usually occurs when the 64-bit version of Address Verification Server is installed and your EDQ Server is running in a 32-bit Java Virtual Machine (JVM). This could be the case even on a 64-bit Operating System, such as Windows 7. If you EDQ was installed using the provided Windows installation program, it is configured to run in a 32-bit JVM unless otherwise specified.

**Resolution**

If you have a 32-bit operating system, you must uninstall the 64-bit version of Address Verification and install the 32-bit version.

If you have a 64-bit operating system, configure EDQ to run in a 64-bit JVM using the following steps:

1. Ensure you are logged into your EDQ Server as a user with administrator rights.

2. Stop your EDQ Application Server service, then stop the EDQ Config Store and Results Store database services.

3. Find the utility file, `dnConfig.exe`, in the `director/[version number]` directory where you installed EDQ. By default, this file is installed in the `C:\Program Files\Oracle\Enterprise Data Quality\director\`*`version number`* directory. If you have multiple versions installed, choose the latest version number.

4. Right-click on **dnConfig.exe** and select **Run as administrator**.

   The Enterprise Data Quality Configuration utility is started.

5. Select the **Application Server** tab, then select the **Use 64-bit JVM** option, and then click **Apply JVM Change**:
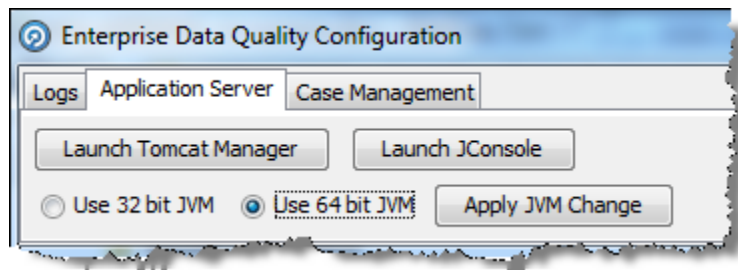


6. Click **Launch Tomcat Manage**r, and then select the **Java** tab

7. Adjust the **Maximum memory pool** option to allow EDQ to use more memory. Oracle recommends that you set the maximum pool to approximately 50% of the available physical memory on your machine. For example, on a machine with 8GB of RAM this setting would be changed to 4096 (4GB):

8. Start the EDQ services in the following order:

   EDQ Config Store

   EDQ Results Store

   EDQ Application Server

## Invalid Data Directory

**Error**

After installing EDQ Address Verification Server, the following error may be written to the `main0.log` file when EDQ starts:

```
WARNING: 29-Aug-2012 15:34:49: widget bean
com.datanomic.director.widget.loqator.server.LoqatorBean reported as dead:
OAV data directory "C:\Program Files\EDQAV\data" not found or invalid
(Code: 247,002)
```

**Cause**

In order to load the Address Verification processor, EDQ requires a valid data directory containing the Loqate Global Knowledge Repository data files. Although the set of

data files (`.lfs` files) that are installed may vary depending on the licensed regions or countries, there must be a valid data directory. During startup EDQ attempts to locate the loqate.ini file in the path stated in the `loqate.datadir` property in the `av.properties` file. If the `loqate.ini` file is not present in the defined location, this error occurs.

**Resolution**

Ensure that you have a valid `loqate.ini` file. This should be provided to you by Loqate as part of the delivery of the licensed Global Knowledge Repository data files. Ensure that this file is present in the directory defined by the `loqate.datadir` property.

## Missing Required File in Solaris Installation

### Error

After installing EDQ Address Verification Server on Solaris, the following error may be written to the `main0.log` file on startup of the EDQ Application Server:

```
WARNING: 21-Sep-2012 19:25:14: widget bean
com.datanomic.director.widget.loqator.server.LoqatorBean reported as dead:
Failed to load OAV JNI library lqtjava: /opt/EDQTool/edqav-12.1.2/
liblqtjava.so: ld.so.1: java: fatal: liblqtcr.so: open failed: No such
file or directory (Code: 247,005)
```

### Cause

Typically, this error occurs because the liblqtcr.so file has a dependency on a file named, `libstlport.so`, provided as part of Oracle Solaris Sun Studio, which may or may not be installed. To test this, check the dependencies of `liblqtcr.so` by running the following command:

**`ldd liblqtcr.so`**

If the output indicates that the `liblqtcr.so` file is not found, it is either not installed or cannot be loaded.

### Resolution

Add the `libstlport.so` file to your installation:

1. Download and unpack the latest version of Oracle Solaris Sun Studio from the Oracle Technology Network web site at

   http://www.oracle.com/technetwork/server-storage/solarisstudio/
   overview/index.html

2. Add your Oracle Solaris Sun Studio location to your `LD_LIBRARY_PATH`, as in the following example:

   /export/home/sullah/solarisstudio12.3/lib/stlport4/v9

3. Retest using the **`ldd liblqtcr.so`** command.

## Related Documents

For more information, see the following documents in the documentation set:

- *Oracle Enterprise Data Quality Installation Guide*

See the latest version of this and all documents in the Enterprise Data Quality Documentation website at:

http://download.oracle.com/docs/cd/E36337_01/index.htm

Also, see the latest version of the EDQ Online Help, bundled with EDQ.