

Oracle Endeca Commerce

MDEX Engine Installation Guide

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Preface

Oracle Endeca's Web commerce solution enables your company to deliver a personalized, consistent customer buying experience across all channels — online, in-store, mobile, or social. Whenever and wherever customers engage with your business, the Oracle Endeca Web commerce solution delivers, analyzes, and targets just the right content to just the right customer to encourage clicks and drive business results.

Oracle Endeca Commerce is the most effective way for your customers to dynamically explore your storefront and find relevant and desired items quickly. An industry-leading faceted search and Guided Navigation solution, Oracle Endeca Commerce enables businesses to help guide and influence customers in each step of their search experience. At the core of Oracle Endeca Commerce is the MDEX Engine,™ a hybrid search-analytical database specifically designed for high-performance exploration and discovery. The Endeca Content Acquisition System provides a set of extensible mechanisms to bring both structured data and unstructured content into the MDEX Engine from a variety of source systems. Endeca Assembler dynamically assembles content from any resource and seamlessly combines it with results from the MDEX Engine.

Oracle Endeca Experience Manager is a single, flexible solution that enables you to create, deliver, and manage content-rich, cross-channel customer experiences. It also enables non-technical business users to deliver targeted, user-centric online experiences in a scalable way — creating always-relevant customer interactions that increase conversion rates and accelerate cross-channel sales. Non-technical users can control how, where, when, and what type of content is presented in response to any search, category selection, or facet refinement.

These components — along with additional modules for SEO, Social, and Mobile channel support — make up the core of Oracle Endeca Experience Manager, a customer experience management platform focused on delivering the most relevant, targeted, and optimized experience for every customer, at every step, across all customer touch points.

About this guide

This guide provides installation instructions for setting up the MDEX Engine on Windows, UNIX, and Linux.

Who should use this guide

This guide is intended for developers and system administrators who install the Endeca MDEX Engine on Windows or UNIX.



Note: Unless otherwise indicated, whenever this document specifies UNIX, it applies to Linux as well.

Conventions used in this guide

This guide uses the following typographical conventions:

Code examples, inline references to code elements, file names, and user input are set in `monospace` font. In the case of long lines of code, or when inline monospace text occurs at the end of a line, the following symbol is used to show that the content continues on to the next line: ↪

When copying and pasting such examples, ensure that any occurrences of the symbol and the corresponding line break are deleted and any remaining space is closed up.

Contacting Oracle Support

Oracle Support provides registered users with important information regarding Oracle Endeca software, implementation questions, product and solution help, as well as overall news and updates.

You can contact Oracle Support through Oracle's Support portal, My Oracle Support at <https://support.oracle.com>.



Chapter 1

Installing the MDEX Engine

This section contains instructions for installing the MDEX Engine.

Before you install

This section provides an overview of the MDEX Engine, system requirements, and other information that you need to know before installing.

Hardware requirements

In this guide, the term "x64" refers to any processor compatible with the AMD64/EM64T architecture. You might need to upgrade your hardware, depending on the data you are processing. All run-time code must fit entirely in RAM. Likewise, hard disk capacity must be sufficient based on the size of your data set. Please contact your Oracle Endeca representative if you need more information on sizing your hardware.

Linux on x64 or Windows on x64

Minimum hardware requirements:

- x64 processor, minimum 1.8 GHz
- At least 2 GB of RAM, depending on the size of the application data set
- 80 GB hard drive

Recommended hardware requirements:

- x64 3.0+ GHz processors; Oracle recommends Intel Xeon or AMD Opteron processors
- 8 GB of RAM or more, depending on the size of the application data set
- One 72GB or 146 GB hard drive per CPU, minimum 10,000 or 15,000 RPM spindle speed
- Gigabit ethernet
- RAID 10 or 6 configuration

Supported operating systems

The Endeca software supports the following 64-bit operating systems running on servers with x64 processors:

- Oracle Linux 5

- Red Hat Enterprise Linux Server (version 5 for x64)
- Red Hat Enterprise Linux Advanced Platform (version 5 for x64)
- SUSE Enterprise Linux 11
- Windows Server 2008 R2 Enterprise



Note: 32-bit versions of any operating systems are not supported by the MDEX Engine in any environment. Starting with version 6.0 release of the MDEX Engine, only 64-bit based hardware and operating systems platforms are supported.



Note: Windows 7 is not supported for production deployment, but operates sufficiently to enable training and small-scale development work. Developers who use Windows 7 may select either a per-machine installation, which requires administrative rights, or a per-user installation, which does not require administrative rights but has reduced capabilities.

Oracle Exalogic Elastic Cloud 11gR1 support

The Oracle Endeca Tools and Frameworks package is supported in Oracle Exalogic 11gR1 environments on the following guest operating systems:

- Oracle Linux 5

VMware ESX 3.5 support

The MDEX Engine is supported in VMware ESX 3.5 environments on the following guest operating systems:

- Red Hat Enterprise Linux Server (version 5 for x64)
- Red Hat Enterprise Linux Advanced Platform (version 5 for x64)



Note: VMware configurations of the MDEX Engine are not supported with the Agraph.

For additional information on VMware support and performance, see the *Endeca MDEX Engine Performance Tuning Guide*.

VMware vSphere 4 and 4.1 support

The MDEX Engine is supported in VMware vSphere 4 and 4.1 environments on the following guest operating systems:

- Red Hat Enterprise Linux Server (version 5 for x64)
- Red Hat Enterprise Linux Advanced Platform (version 5 for x64)
- SUSE Enterprise Linux 11
- Windows Server 2008 R2 Enterprise



Note: VMware configurations of the MDEX Engine are not supported with the Agraph.

For additional information on VMware support and performance, see the *Endeca MDEX Engine Performance Tuning Guide*.

Amazon Elastic Compute Cloud (EC2) support

The MDEX Engine is supported in Amazon EC2 environments on the following guest operating systems:

- Amazon Linux AMI

- SUSE Enterprise Linux 11
- Windows Server 2008 R2 Enterprise



Note: Amazon EC2 configurations of the MDEX Engine are not supported with the Agraph.

UNIX utilities dependencies

This section describes the UNIX utilities required by the Endeca MDEX Engine installer.

The following UNIX utilities must be present in the `/bin` directory:

```
basename
cat
chgrp
chown
date
dd
df
mkdir
more
rm
sed
tar
true
```

The following UNIX utilities must be present in the `/usr/bin` directory:

```
awk
cksum
cut
dirname
expr
gzip
head
id
printf
tail
tr
wc
which
```

If these utilities are not in the specified locations, the installation fails with a message similar to the following:

```
Required dependency is not executable: /bin/df. Aborting.
```

Disk space requirements on Windows

The installation process requires space on the system drive C.

Even if you are installing on the other drive than the system drive C, to avoid an "out of drive space" error during the installation process, you should have approximately 190MB of space available on the system drive before installing (you may need to clear this space on C if it is not available).

The Windows installation process unpacks its .msi installation file and other temporary and log files to a location on the system drive (typically C), regardless of which drive you choose for the installation, and regardless of the drive indicated by the TEMP and TMP environment variables.

When the installation process completes the installation, it frees the space it consumed.

The .msi file, and other temporary and log files written by the installation process temporarily add a total of approximately 190MB to the C drive. If the system drive does not have this much free space, the installation fails with a "There is not enough space on the disk" error.

Required Oracle Endeca components

The MDEX Engine installation does not require any other Endeca components to be previously installed.

To determine the compatibility of components in Oracle Endeca Commerce, see the *Oracle Endeca Commerce Compatibility Matrix* available on the Oracle Technology Network.

Required reading

Before installing, Oracle recommends that you read the following documents for important information about the release.

Getting Started Guide

The *Oracle Endeca Guided Commerce Started Guide* gives an overview of the components and includes information about configuration scenarios. After installing all the components in your deployment, read this guide for information on verifying your installation. You can download the *Oracle Endeca Commerce Getting Started Guide* from the Oracle Technology Network (OTN).

Release Notes

Refer to the Endeca release notes for information about new features, changed features, and bug fixes for this release. You can download the release notes (README.txt) from the Oracle Technology Network (OTN).

After installation, release notes are also available in the following location:

- Windows: MDEX\<version>\README.txt
- UNIX: MDEX/<version>/README.txt

MDEX Engine Migration Guide

Refer to the *MDEX Engine Migration Guide* for information about migrating your implementation from a previous version of Endeca software. You can download the *MDEX Engine Migration Guide* from Oracle Technology Network (OTN).

Installer file names

Endeca installation packages and executables are named according to a common convention.

The installer file names follow the format:

```
componentname_version_arch-OS
```

For example:

```
mdex_622_x86_64pc-linux.sh
```

The *componentname* is the component identifier for the component being installed. In the example installer, *mdex* is the identifier for Endeca MDEX Engine.

The *version* is the release version, without periods. In the example installer, *622* identifies Endeca MDEX Engine version 6.2.2.

The *arch-OS* is the architecture and operating system identifier for the component being installed. In the example installer, *x86_64pc-linux* identifies the file as an installer for the 64-bit Linux platform. The following table lists the *arch-OS* identifiers and their platforms:

arch-OS identifier	Installation platform
x86_64pc-linux	Linux running on 64-bit Intel processors
x86_64pc-win32	Windows running on 64-bit Intel processors

Installing the MDEX Engine

This section describes the installation procedure and the contents of the installation directory.

About User Account Control in Windows Server 2008

User Account Control in Windows Server 2008 R2 Enterprise limits which tasks Standard Users can run.

User Account Control divides users into two groups, Standard Users and Administrators:

- **Standard Users** have the least amount of privileges required to perform basic tasks. They cannot install or uninstall applications to or from %SYSTEMROOT%, change system settings, or perform other administrative tasks.
- **Administrators** have full permissions for adding, removing, or modifying programs and user accounts.

By default, users are created as Standard Users. Although User Account Control allows Standard Users to temporarily elevate permissions in order to perform administrative tasks, doing so requires administrative credentials.

For more information regarding User Access Control and the permissions granted to each user type, see the Microsoft documentation at

<http://technet.microsoft.com/en-us/library/cc731416%28WS.10%29.aspx>.

Effects on MDEX Engine Installation

The MDEX Engine installation process has changed with the introduction of User Account Control in Windows Server 2008 R2 Enterprise. Because of the resulting security restrictions on tasks that run at elevated privilege, running a per-machine installation of the MDEX Engine now requires administrator

permissions. A user may still install a per-user installation without these permissions, but this is not supported in a production environment.



Note: UAC behavior and installation steps may differ if installing on Windows 7 for development purposes. For details, see the Microsoft documentation.

Installing a per-user MDEX Engine installation on Windows

A per-user installation of the MDEX Engine may be used if administrator permissions are unavailable. This is primarily useful for training and for small-scale development environments.



Note: Installing a per-user installation of the MDEX Engine on Microsoft Server 2008 is only permitted when it has been configured as a managed application, or the `DisableMSI` registry key has been set to zero. Contact an administrator if you require a per-user installation under Windows Server 2008.

Before installing, make sure to uninstall any previous versions of the MDEX Engine using the **Uninstall a program** utility in the Control Panel.

If a per-machine installation of the MDEX Engine is already present, attempting to install a per-user installation fails and the installer instead attempts to uninstall the per-machine installation.



Important: If you are setting up your MDEX Engine for a production environment, you must use a per-machine installation. Additionally, if you are using a Platform Services installation, you must also use a per-machine MDEX Engine installation.

To install the Endeca MDEX Engine as a per-user installation:

1. Download the MDEX Engine package from the Oracle Software Delivery Cloud.
2. Extract the MDEX Engine package to a local directory.
The name of the extracted installer file is `mdex_<version>_x86_64pc-win32.exe`.
3. Double-click the installer file `mdex_<version>_x86_64pc-win32.exe` to start the wizard.

The wizard verifies the contents of the installation package and confirms that no previous version is installed.



Note: If the installer identifies that the previous version is still installed, cancel the installation and uninstall the previous version using the **Uninstall a program** utility in the Control Panel.

4. Click **Next** to begin the installation process.
5. In the **Copyright and Legal** screen, click **Next**.
6. In the **Select Program Folder** screen, do the following:
 - Accept the default value for **Program Folder**.
 - Select the **Only for me (current user)** button.
7. Select an installation location or accept the default installation
`%USERPROFILE%\Endeca\MDEX\<version>` which creates the directory
`%USERPROFILE%\Endeca\MDEX\<version>` .

You cannot install the MDEX Engine into a directory that contains content.

The wizard displays both the required and available disk space for the target directory chosen. The MDEX Engine requires approximately 500 MB of disk space. The installer requires approximately 190 MB of space on the system drive for temporary files. These files are cleared after the installation process completes.



Note: If you install to a non-default location, the installation does not create the sub-directory structure `MDEX\<version>` unless you specify this structure explicitly. Additionally, clicking the **Back** button in the installation wizard resets the installation path to the default directory.

8. Click **Finish**.

The wizard confirms that you have successfully completed the installation.

If you intend to run MDEX Engine applications or tools from the command line, without using the EAC or JCD and Control Interpreter, run the batch file `mdex_setup.bat` after you install the MDEX Engine. You must run this script from a Windows Command Prompt, not a PowerShell Console.

The MDEX Engine installer creates this batch file in the target directory. For example, if you installed to the default location, this file is located at `%USERPROFILE%\MDEX\<version>\mdex_setup.bat`.

The batch file sets up the environment variable `ENDECA_MDEX_ROOT` that the MDEX Engine uses and that points to `%USERPROFILE%\MDEX\<version>`. The script also adds the `utilities` directory and the MDEX Engine binaries to the search path.

The script is optional and provided as a convenience. Note that it only sets the variables for the current user in the current context. Optionally, you can manually set the environment variables as global environment variables.

Related Links

[Installing a machine-wide MDEX Engine installation on Windows](#) on page 15

If you are setting up your MDEX Engine for a production environment, you must use a machine-wide installation. Additionally, Oracle recommends this method of installation any time administrator permissions are available.

Installing a machine-wide MDEX Engine installation on Windows

If you are setting up your MDEX Engine for a production environment, you must use a machine-wide installation. Additionally, Oracle recommends this method of installation any time administrator permissions are available.

Before installing, make sure to uninstall any previous versions of the MDEX Engine using the **Uninstall a program** utility in the Control Panel.

To install the Endeca MDEX Engine on Windows:

1. Download the MDEX Engine package from the Oracle Software Delivery Cloud.
2. Extract the MDEX Engine package to a local directory.
The name of the extracted installer file is `mdex_<version>_x86_64pc-win32.exe`.
3. Double-click the installer file `mdex_<version>_x86_64pc-win32.exe` to start the wizard.

The wizard verifies the contents of the installation package and confirms that no previous version is installed. When running an installation with administrator permissions, User Account Control will check the digital signature of the installer. Digital signatures provide system administrators with a higher level of confidence in the authenticity of the installation package.



Note: If the installer identifies that the previous version is still installed, cancel the installation and uninstall the previous version using the **Uninstall a program** utility in the Control Panel.

4. Click **Next** to begin the installation process.
5. In the **Copyright and Legal** screen, click **Next**.
6. In the **Select Program Folder** screen, do the following:
 - Accept the default value for **Program Folder**.
 - Select the **Anyone who uses this computer (all users)** button.
 - Click **Next**.
7. Select an installation location or accept the default installation `C:\Endeca\MDEX\<version>` and click **Next**.

You cannot install the MDEX Engine into a directory that contains content.

The MDEX Engine requires approximately 500 MB of disk space. The installer requires approximately 190 MB of space on the system drive for temporary files. These files are cleared after the installation process completes.



Note: If you install to a non-default location, the installation does not create the sub-directory structure `MDEX\<version>` unless you specify this structure explicitly. Additionally, clicking the **Back** button in the installation wizard resets the installation path to the default directory.

8. Click **Finish**.
The wizard confirms that you have successfully completed the installation.

Installing the MDEX Engine on UNIX

The software is distributed as a self-extracting tar file and install script. It can be installed to any location.



Note: The MDEX Engine unpacks to approximately 300 MB. Because multiple versions may eventually be stored, a destination in a large disk partition is recommended.

To install the Endeca MDEX Engine:

1. Download the MDEX Engine package from the Oracle Software Delivery Cloud.
2. Extract the MDEX Engine package to a local directory. This procedure assumes the location is `/downloads/[ARCH_OS]`.
The name of the extracted installation file is `mdex_<version>_[ARCH_OS].sh`.
3. Determine where you will install the MDEX Engine. Verify that the target directory on which you plan to install has enough available disk space, and has write permissions (is not read-only). For example, in this procedure we assume that the target directory is `/usr/local/endeca` and that you have write permissions for it. If you do not set these permissions, the install script will not run.
4. Assuming the location above, run the Endeca installation script with the following command:

```
/downloads/[ARCH_OS]/mdex_<version>_[ARCH_OS].sh --target /usr/local
```

At the completion of the installation, the installer prompts you to run the `mdex_setup` script that sets the `ENDECA_MDEX_ROOT` environment variable.

After you install the MDEX Engine, depending on your shell, run the following script:

```
source endeca/MDEX/<version>/mdex_setup_sh.ini
```

or:

```
source endeca/MDEX/<version>/mdex_setup_csh.ini
```

The `mdex_setup` script sets up the environment variable `ENDECA_MDEX_ROOT` that the MDEX Engine uses and that points to the location `MDEX/<version>`. The script also adds the utilities directory and the MDEX Engine binaries to the search path. The script is optional and is provided as a convenience, although the variable is required and must be set.

Installing silently on Windows

Running the silent installer on Windows has different effects depending on whether or not the user has administrator permissions.

If the silent installer is run with administrator permissions, it creates a per-machine installation. Otherwise, it creates a per-user installation. Variables on the command line can be used to override this default behavior.

To install silently on Windows:

1. From a command prompt, navigate to the directory where you downloaded the installer.
2. Issue the following command:

```
start /wait mdex_<version>_arch-OS.exe /s
TARGETDIR=C:\Endeca\MDEX\<version>
```

You can replace `C:\Endeca\MDEX\<version>` with the location to which you want to install. However, if you set the install location to a non-empty directory or to a drive that does not exist, the silent installation will fail with a non-zero status code.

Additionally, an administrator can override the default behavior and create a per-user installation by setting `ALLUSERS=FALSE`.

3. Optionally, use a file created by the installer to set up the `ENDECA_MDEX_ROOT` variable.

Run `C:\Endeca\MDEX\<version>\mdex_setup.bat`.



Note: If you changed the `TARGETDIR` location in step 2, `mdex_setup.bat` will be located in the directory you specified.

The files set up the environment variable `ENDECA_MDEX_ROOT` that the MDEX Engine uses and that points to `MDEX\<version>`. The script also adds the utilities directory and the MDEX Engine binaries to the search path. The `ENDECA_MDEX_ROOT` variable is required and must be set for the environment in which the JCD is run. The script itself is optional and provided as a convenience, although it only sets the variables for the current user in the current context. You can also choose to manually set the environment variables as global environment variables.

Turning on logging for the Windows silent installer

When running the silent installer on Windows, you can turn on logging.

This can be useful, for example, if you need to debug a failed silent installation.

To turn on logging during a silent installation on Windows, add `/l=<path>`. An absolute path is required.

Installing silently on UNIX

The silent installer is useful if you want to add the installation of the MDEX Engine to your own install script, or push out the installation on multiple machines.

The silent installer is not interactive.

To install silently on UNIX:

1. From a command prompt, navigate to the directory where you downloaded the installer.
2. Issue the following command:

```
./mdex_<version>_arch-OS.sh --silent --target /localdisk/username
```



Note: `--target` must be the last parameter specified.

Optionally, you can replace `/localdisk/username` with the location to which you want to install.

3. Optionally, use a file created by the installer to set up the `ENDECA_MDEX_ROOT` variable.

Run `source endeca/MDEX/<version>/mdex_setup_sh.ini` or `source endeca/MDEX/<version>/mdex_setup_csh.ini` depending on your shell.

The files set up the environment variable `ENDECA_MDEX_ROOT` that the MDEX Engine uses and that points to `MDEX/<version>`. The script also adds the utilities directory and the MDEX Engine binaries to the search path. The `ENDECA_MDEX_ROOT` variable is required and must be set for the environment in which the JCD is run. The script itself is optional and provided as a convenience, although it only sets the variables for the current user in the current context.

Package contents and directory structure

This topic describes directories created in the MDEX Engine installation.

The `Endeca\MDEX\<version>` directory is the root directory for the MDEX Engine. The directory contains files and software modules for all of the MDEX Engine components:

Directory	Contents
root directory	The release notes (<code>README.txt</code>) and the <code>mdex_setup</code> script that you run after the installation, which sets the <code>ENDECA_MDEX_ROOT</code> variable to this location.
bin	Executables for various components, such as <code>Dgraph</code> , <code>Dgidx</code> and <code>Agraph</code> , along with additional libraries.
conf	Configuration, stemming, schema and DTD files.
data	Utilities and data files.
doc	The Endeca Licensing Guide.
lib	Object file libraries and Aspell Character Data files.
utilities	Executable files for various utilities, such as <code>GZIP</code> , <code>touch</code> , and <code>grep</code> (Windows only).

Directory	Contents
lib64	64-bit libraries (UNIX only).
xquery	Query Web service.
lib/xquery	Endeca Web services XQuery API.

After you install

This section describes optional post-installation procedures.

Loading the correct resolver library

If, when running the Dgraph or the Agraph, you get the error `Couldn't resolve host host`, your system might be loading the wrong resolver library at run time.

This can happen if `ld.so.cache` contains an entry for a different version than the one you need first.

To load the correct resolver library:

- Set `LD_LIBRARY_PATH` as follows so that it will be searched before `ld.so.cache`.

- For `csh` and similar shells:

```
setenv LD_LIBRARY_PATH /lib:${LD_LIBRARY_PATH}
```

- For `bash`:

```
export LD_LIBRARY_PATH=/lib:${LD_LIBRARY_PATH}
```




Chapter 2

Uninstalling the MDEX Engine

This section contains the procedures for uninstalling the MDEX Engine.

Uninstalling the MDEX Engine on Windows

Before you begin the uninstall process, back up files that you want to retain from the `Endeca` directory.

Make sure that you stop all Endeca processes (including the Dgraph and the Endeca HTTP service) before uninstalling the Endeca software.

To uninstall the MDEX Engine from a Windows machine:

1. From the Windows Control Panel, select **Add or Remove Programs**.
2. Select the **Endeca MDEX Engine** from the list of installed software.
3. Click **Remove**.
4. If you are uninstalling a single-user installation of the MDEX Engine, remove any empty directories left behind by the uninstall process.

Uninstalling the MDEX Engine on UNIX

Before you begin the uninstall process, back up files that you want to retain from the MDEX Engine directory.

Make sure that you stop all Endeca processes (including the Dgraph and the Endeca HTTP service) before uninstalling the Endeca software.

To uninstall the MDEX Engine from your UNIX machine:

Issue an `rm` command as in this example:

```
rm -rf endeca/mdex/<version>
```


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