



CERTENT CDM Installation Guide



CDM Installation Guide Overview

The *CDM Installation Guide* describes how to perform installation tasks in Certent CDM. It contains an overview of the high-level architecture, prerequisites, and installation steps. It is organized in sequential order, and therefore each section should be read and followed in succession to ensure that the installation is successful.

The Certent CDM installation package provides you with all of the required elements to successfully install and implement the CDM solution.

CDM consists of a server installation and at least one client installation.



CDM Server Installation

Certent CDM Network Topology

Before you install and configure CDM Server, it is important to understand the network topology it requires.

Users use the client interface of Certent CDM to work with reports and access financial data from various sources. The CDM Client communicates with data sources (for example, relational or Microsoft™ Excel files) through the CDM Server. OLAP data can be retrieved through the CDM database, or directly from an OLAP database environment.

CDM uses server processes to coordinate communication from an end user client to the database environment. Other components include administrator and end user client computers, and existing ERP systems.



Important:

- There is no write-back from the database server to the data source.
- For support information about third-party OLAP and relational database server applications such as Oracle Essbase and Microsoft SQL Server, consult the documentation provided by the software manufacturer. CDM documentation does not document aspects of these components beyond the minimal definitions required to perform specific configuration tasks.

Preinstallation Requirements

In addition to installing the server components, the CDM Server installation also creates a database and configures your web server.

To review an up-to-date list of environments supported by this version of CDM, such as operating systems, patches, browsers, web servers, directory servers, database servers, and application servers, reach out to Certent CDM Support.

The CDM application pool requires that you should have the Write and Delete permissions on your Windows Temp folder. Please check how the **%temp%** environment variable is set for your machine.

Install Microsoft .NET Framework

You need to install Microsoft™ .NET Framework 4.7.2, or a later version, on all CDM Server computers. You can go to the [Microsoft download website](#) and select the Runtime version of the latest .NET Framework to download and install the software.

Install Microsoft Visual C++ 2017 Redistributable

The CDM installer downloads and installs the Microsoft™ Visual C++ 2017 Redistributable Package version 14.10.25017 32-bit and 64-bit during the installation if you have not installed it. However, if you prefer, you download the Microsoft™ Visual C++ 2017 Redistributable Package from the Microsoft download website and install it before you install Certent CDM. You can also use a newer version. You need both the 32-bit and 64-bit versions.

You should install the Microsoft™ Visual C++ 2017 Redistributable Package on the CDM Server and Client computers.



Note: The Microsoft Visual C++ 2017 Redistributable Package is only needed for the CDM installer to run. It is not needed by CDM itself.

Install Microsoft Internet Information Services (IIS)

You must have Microsoft™ Internet Information Services (IIS) installed and running before you install Certent CDM.

Depending on the Windows™ Server version you have installed, there are different instructions to install IIS. Please refer to Microsoft documentation to install Internet Information Services.

Necessary Server Components

In the Select Role Services window, ensure you select the following role services if they are not already selected.

- ASP.NET
- Basic Authentication
- Default Document
- HTTP Errors
- IIS Management Console
- IIS Management Scripts and Tools
- ISAPI Extensions
- ISAPI Filters
- .NET Extensibility
- Request Filtering
- Static Content

Install ASP.NET Core 8 Runtime Windows Hosting Bundle

You must have Microsoft .NET 8 installed and running before you install the CDM Server. Specifically, the Hosting Bundle must be installed on the CDM Server machine.

1. Go to the Microsoft .NET download page.
2. Download and install, at least, Hosting Bundle 8.0.11 (ASP.NET Core Runtime 8 - Windows Hosting Bundle installer).

Configure the Server Computer for Windows Authentication

You must ensure that the computer where you are going to install the CDM Server is configured to allow for Windows™ authentication.

The server computer must have the Windows authentication for Microsoft™ Internet Information Services (IIS) features installed before users can log in to the CDM Client using Windows authentication.

1. Click **Start > Control Panel > Programs > > Turn Windows features on or off**.
2. Navigate to **Internet Information Services > World Wide Web Services > Security** and ensure that **Windows Authentication** is enabled.

The server computer must also have the HTTP and Non-HTTP activation features installed.

3. Click **Start > Control Panel > Programs > Programs and Features > Turn Windows features on or off**.
4. Navigate to **.NET Framework** and ensure that both **Windows Communication Foundation HTTP Activation** and **Windows Communication Foundation Non-HTTP Activation** are enabled.
5. Ensure that http and net.tcp protocols are enabled in IIS for the CDM Server application:
 - a. Click **Start > All Programs > Administrative Tools > Internet Information Services (IIS) Manager**.
 - b. Navigate to the **Certent CDM** application.
 - c. Click **Advanced Settings**.
 - d. Under **Behavior**, ensure that **http** and **net.tcp** are both listed in the **Enabled Protocols** field.



Important: Ensure that port 808 (the default port) is opened for incoming connections.

Install CDM Server

After you ensure that you have the correct requirements, you can install the server software for CDM.

Ensure that Microsoft™ .NET Framework 4.7.2 (or later) is installed on your computer.

Ensure that the computer on which you are installing the CDM Server is connected to the Internet, so that the Microsoft™ Visual C++ 2017 Redistributable Package can be downloaded during the installation if not already installed.

If you want users to see Electronic Data Gathering, Analysis, and Retrieval (EDGAR) functionality in the user interface, you should also ensure EDGAR functionality is enabled in CDM.



Important: The CDM Server installer does not check if the selected path contains another CDM instance. It will overwrite the files in the directory without prompting you. The Administrator must verify that there are no other files located at the physical path of the CDM Server web application.

Launch .exe and Accept License Agreement

1. Extract the contents of the **Server_installer.zip** folder.
2. Double-click the **CDM Setup.exe** file to start the installation wizard.
3. If you do not have the Microsoft™ Visual C++ 2017 Redistributable Package installed on your computer, click **Install** to install these components.
4. Accept the license agreement and click **Next**.

Configure Setup Type

1. Select either the **Typical** or **Custom** setup type, depending on what features you want to install. If you select Typical installation, the wizard takes you to the [Internet Information Services Settings](#) window. If you want to install Filing, XBRL, or Electronic Data Gathering, Analysis, and Retrieval (EDGAR), you must select Custom to install those features.



Note: The Migration Tool is installed with Typical installation.

2. In the **Custom Setup** window, you can select whether you want to install the database or not. Expand the Core feature and select **Database scripts** if you would like to install the database.



Note: The database scripts are required for a normal CDM Server installer. However, they can be skipped only if a CDM web server installation is required to point to an already existing database created by a previous installation.

3. To install Filing, select this feature, and it will be installed on the local hard drive. Click **Next**.
4. The **License Keys** window opens and prompts you to enter your XBRL and EDGAR license keys. Enter the respective keys and click **Next**.

Internet Information Services Settings

In the Internet Information Services Settings window, you have the option of changing the name of the application pool, the name of the website, and the installation location of the CDM Server website. You can also set database properties by selecting the **Also configure database parameters** checkbox.

Database Server Settings

In the Database Server window, enter the following information:

1. In the **Database Provider** field, select **Microsoft SQL Server** as your database provider.
2. Enter the name of the server where your database server is running, for example, enter **server_name**. If you use multiple instances on your database server, enter **server_name\instance_name**.
3. Select the type of authentication for your database server and enter the credentials if required.

4. Enter a name for the CDM database.



Note: If a database with the same name exists on the database server, the database deployment tool will fail.

5. Enter an encryption key. Enter a string of characters. The value you enter as the encryption key is used to secure communication between the application server files and the database. The strength of the encryption key is determined by its length. For example, enter **1234**.
6. Click **Test Connection** to ensure that the connection to the database is successful.
7. Select the **Use existing empty database or databases** checkbox if you want to use an existing empty database or databases. If an empty database cannot be found, the database deployment tool will fail. If you do not select this checkbox, the database deployment tool will create the database if it does not exist.
8. Select **Use existing CDM database(s)** if you already have a CDM database of an older CDM version and you would like to use that instead of a new, empty, database. The existing database will be upgraded to the new version.



Important: The database cannot be downgraded to the older version. You should back up any database before upgrade. For more information, see [Upgrade Over an Existing Database](#).

9. Select the **Install the Cache database separately** checkbox if you would like the Cache database to be deployed in a separate database. Otherwise, its tables are going to be deployed in the same database as the CDM Core component under a different schema.
10. If you have selected XBRL to be installed, you will see the **Install the XBRL database separately** checkbox. Select this if you would like the XBRL database to be deployed in a separate database, otherwise, its tables are going to be deployed in the same database as the CDM Core component under a different schema.

Finish Installation

1. Click **Next**.
2. Click **Install**.
3. Click **Finish** to exit the installation wizard.

The server component is installed and the CDM database is created on your database server. An application pool named **CertentCDMApplicationPool** and a website application named **Certent CDM Server** are configured on your web server. By default, the installer creates one database with the name you provided, which will be the main CDM database. If you selected to install the cache separately, a new database will be created. This database appends Cache to the database name you provided. If you have selected XBRL to be installed, this will also, by default, be deployed into the main CDM database. If you want to install XBRL separately, a new database will also be deployed which appends XBRL to the database name you provided.

The server components are installed to the **wwwroot** directory of your Microsoft Internet Information Services (IIS) web server. For example, the components are installed to

C:\inetpub\wwwroot\CertentCDM-Server. You must import your SSL certificate on your web server and enable SSL communication for CDM.

You must also install at least one client to access the server.

Upgrade CDM Server Over an Existing Database

You can deploy a new instance of the CDM Server over an existing CDM database, preserving configurations.

Prerequisite Steps

These are the steps that should be completed prior to an upgrade of the CDM application server.

1. Ensure all users are logged off of the CDM Server.
2. Make a backup of the CDM database(s). This is to ensure that a latest backup of the database is available.
3. Export the CDM encryption key using these steps:
 - a. Open a command prompt using the **Run as administrator** option.
 - b. Navigate to the encryption directory:

```
CD C:\inetpub\wwwroot\CertentCDM-Server\Tools\EncryptionTool\
```

- c. Run this command:

```
Ibm.CognosDM.EncryptionTool  
/EMK/cfgfile:"C:\inetpub\wwwroot\CertentCDM-Server\Web.config"/o  
"C:\ExportedEncryptionKeyDec2019.txt"
```

4. Decrypt the **ConnectionString.config** and **Credentials.config** files with these steps:
 - a. Open a command prompt using the **Run as administrator** option.
 - b. Navigate to the encryption directory:

```
CD C:\inetpub\wwwroot\CertentCDM-Server\Tools\EncryptionTool\
```

- c. Run this command:

```
Ibm.CognosDM.EncryptionTool.exe  
/DCF/cm:Ibm.CognosDM.Configuration.dll/sections:"connectionStrings  
,Credentials" /cfgfile:"C:\inetpub\wwwroot\CertentCDM-  
Server\Web.config"
```

5. Backup the entire **CognosDM-Server** or **CertentCDM-Server** directory in `\inetpub\wwwroot\.`

6. Go to **Control Panel > Programs and Features** and select **IBM Cognos Disclosure Management** or **CertentCDM-Server**, then right-click and select **Change**:
 - a. Click **Next** until you reach the list of features. Take a screen shot and save the file.
 - b. Click **Next** and take a screen shot of the Internet Information Services Settings. Save the file.
 - c. Click **Next** and take a screen shot of the Database Server settings. Save the file.



Tip: These screen shots will be useful during the upgrade, when prompted to select the features that are installed, setup the Internet Information service settings, and while configuring the Database Server.

7. Launch IIS on the CDM application server, then click **Application Pool**. Take a screen shot. The screen shot should include the application pool ID column as well.
8. Take a screen shot of the server if you want.
9. If the existing CDM version is 10.3 IF 27 or earlier, uninstall Arelle and NodeJS using the Control Panel and remove the folders from the path where these applications were installed.

Upgrade Procedure

1. Complete all [prerequisites steps](#).



Note: You will be required to enter the password that was used when CDM was first installed in your environment for this upgrade. If you do not know this password, obtain a copy of the **Get Encryption Key.zip** file from Certent CDM Support if it is not included in the installation package. Copy this file to the CDM application server and extract. Run the **GEK** file included in the package and follow the instructions. You will be presented with the password in the Windows PowerShell window. Copy this password to a notepad file and save the password for later use. You can delete the file once the installation has completed. There is a readme file included with the package as well.

2. Go to **Control Panel > Programs and Features** and uninstall the existing Certent CDM installation.
3. Remove the **CertentCDM-Server** folder located in `C:\inetpub\wwwroot\`, excluding the copied folder. Remove the references to CDM in IIS (in effect, application pools, websites).
4. Right-click **Ibm.CognosDM.InstallSetup** or **setup.exe** from the **Server** folder of the installation package and select **Run as administrator**.
5. Select **Install a new instance**.
6. Select **Accept on the agreement** and click **Next**. The Setup Type page of the Certent CDM Server InstallShield Wizard is displayed.
7. Select **Custom** and click **Next**. The Custom Setup page is displayed.
8. Select the features that were previously installed. Refer to the screen shots that were previously taken and saved during the steps in the Prerequisite section in this topic. Click **Next**. The Internet Information Services Settings page is displayed.

9. You can click **Change** to change the location path to the drive where the CDM application was previously installed. However, it is recommended to leave the application pool and application website as shown (default settings).
10. Click **Next**. The Database Server page is displayed.
11. For the database server details:
 - a. Select the **Database Provider**, Database server that you are installing to, and Connect using options (ensure you have DBO rights to the databases).
 - b. In the **Name of database catalog** field, use the same database name and settings that have been used in the previous IBM or Certent CDM installation and select the **Use existing CDM database(s)** checkbox to upgrade the existing IBM or Certent CDM database.
 - c. To set an encryption key for the catalog, the same encryption key should be used to avoid additional steps. If you do not know the encryption key, use the encryption key that was exported in the Prerequisite steps of this topic.
 - d. If the Cache or XBRL database(s), or both, have been deployed separately make sure the corresponding Use existing empty database or database and Install the Cache database separately checkboxes are also marked to ensure all databases are upgraded correctly.
12. You can click **Test Connection** to test the setup values you have entered.
13. Click **Next** to complete the installation.
14. Configure your IIS. Modify your CDM application pool ID to the ID determined in the [prerequisites steps](#). If Windows Authentication or SSL, or both, were enabled, enable these in IIS too.
15. Perform an IIS reset and test CDM to ensure a successful connection is established. If the connection is successful, then proceed. If the connection fails, consult the CDM Knowledge Center for troubleshooting documents or contact CDM support by submitting a ticket at insightsoftware.com/support/product-support/.
16. Apply any manual configuration changes to the remaining config files, as these files have now been replaced with default settings (for example: section preview, reduce cell styles, idle timeout, and so on). If you are not sure which keys or parameters need to be modified, refer to your backup folder in the prerequisite section in this topic.
17. If you use XBRL, run the XBRL Dependencies utility included with the package.

Install CDM Server Using a Silent Installation

A silent installation is an installation that does not send messages to the console but instead stores messages and errors in log files. A silent installation can use response files for data input. You can use a silent installation to install the Certent CDM Server components.

Ensure that you have Microsoft™ .NET Framework 4.7.2 software installed on your computer.

Ensure that the computer on which you are installing the CDM Server is connected to the internet, so that the Microsoft™ Visual C++ 2017 Redistributable Package can be downloaded during the installation if not already installed.



Important: Ensure that all prerequisites are met. The silent installer will not enforce them.

Silent Installation Procedure

1. In Command Prompt, navigate to the **setup.exe** file location on the server.
2. Type the following command to start the installation:

```
start /wait "install" setup.exe /s /instance=16 /v"/qn
ADDLOCAL=CORE,Database,XBRL,EDGAR,FILING,FILINGWIZ XBRL_LICENSE_KEY=""
EDGAR_LICENSE_KEY="" IS_SQLSERVER_SERVER="" IS_SQLSERVER_DATABASE=""
IS_SQLSERVER_AUTHENTICATION=1 IS_SQLSERVER_USERNAME=user IS_SQLSERVER_
PASSWORD=password ENCRYPTIONKEY= CERTENTCDM_SERVER_IIS="" APP_POOL_
NAME="" WEBSITE_NAME="" INSTALLDIR="" /l C:\install.log"
```



Important:

Ensure that there are no spaces in /v"/qn. If you use spaces in the value of INSTALLDIR, ensure that you use quotation marks around the value, appropriately escaped. For example:

```
setup.exe /s /v"/qn INSTALLDIR="C:\Program Files\CognosCDM
Server\""
```

Parameter Details

Parameter	Description
/instance	The number of the CDM Server instance to be deployed. It will be visible in Programs and Features and must be different from existing instances. The value must be equal to n+1 where n is the largest instance number installed on that machine. For example, if you already have a CDM Server with Instance ID = 0 and Instance ID = 1, /instance must be 2. If you are trying to modify an installed instance, the instance ID must be the same as the instance you are trying to modify.
ADDLOCAL	Instructs the installer that all listed parts will be deployed locally, on the target machine, in the target location. There are five possible values: <ul style="list-style-type: none"> • CORE - Deploys the CORE CDM Server. • Database - Creates the database on the SQL server and adds all necessary parameters to it. If you are attempting to modify the installation to add additional components, this does not have to be mentioned. • XBRL - Deploys the XBRL component. This includes the necessary database tables. • EDGAR - Activates the EDGAR component. • FILING - Deploys the Filing component. This includes the necessary database tables.

Parameter	Description
	<ul style="list-style-type: none"> • FILINGWIZ - Deploys the SEC Filing Wizard module.
XBRL_LICENS E_KEY	Needs to contain the XBRL license key.
EDGAR_LICENS E_KEY	Needs to contain the EDGAR license key.
CERTEN TCDM_ SERVE R_IIS	The location on the HDD where the CDM Server files are going to be copied.
INSTALL DIR	The location on the HDD where the licenses are going to be deployed. It is recommended to use the same as CERTENTCDM_SERVER_IIS.
APP_ POOL_ NAME	The name of the CDM Server application pool in the IIS.
WEBSIT E_NAME	The name of the website in IIS.
IS_ SQLSERV ER_ SERVER	The database server and instance, if required, for example, ServerName, ServerIP, or ServerName\InstanceName.
IS_ SQLSERV ER_ DATABAS E	The name of your CDM database. If the database does not exist, it will be created. If the database exists, the installer will try to update it.
IS_ SQLSERV ER_ AUTHENT ICATION	<ul style="list-style-type: none"> • 1 to instruct that the login to the SQL server will be performed using a native SQL user. <ul style="list-style-type: none"> ◦ IS_SQLSERVER_USERNAME - The native SQL user name to be used during database deployment. ◦ IS_SQLSERVER_PASSWORD - The password for the native SQL user used during database deployment. • 0 to instruct that the login to the SQL server will be performed with the user currently logged into Windows and running the silent installation.
ENCRYPT IONKEY	The encryption key for the database. Enter a string of characters. The value you enter as the encryption key is used to secure communication between the application server files and the database. The strength of the encryption key is determined by its length. For example, type:

Parameter	Description
	<pre>setup.exe /s /v"/qn IS_SQLSERVER_SERVER=myserver IS_SQLSERVER_DATABASE=CognosDM IS_SQLSERVER_AUTHENTICATION=0 ENCRYPTIONKEY=1234"</pre>
DEPLOY_EMPTY_DATABASE	Enter 1 if the deployment will target an empty database.
SEPARATE_CACHE	Enter 1 if the deployment will create the cache on a separate database or enter 0 if the cache will be installed on the same database.
SEPARATE_XBRL	Enter 1 if the deployment will create the XBRL on a separate database or enter 0 if the XBRL will be installed on the same database.

By default, the silent installation will perform a typical installation, which will only install CDM. If you would like Certent CDM XBRL, Electronic Data Gathering, Analysis, and Retrieval (EDGAR), the Filing component, or the SEC Filing Wizard module installed, you must add the following parameters:

- ADDLOCAL=CORE, DATABASE, XBRL
Use this parameter to install both CDM and XBRL.
- ADDLOCAL=CORE, DATABASE, EDGAR
Use this parameter to install both CDM and EDGAR.
- ADDLOCAL=CORE, DATABASE, FILING
Use this parameter to install both CDM and FILING.
- ADDLOCAL=CORE, DATABASE, FILINGWIZ
Use this parameter to install both CDM and FILINGWIZ.

The server component is installed and the CDM database is created on your database server. An application pool named **CertentCDMApplicationPool** and a website application named **Certent CDM Server** are configured on your web server. The installer creates two databases. One database uses the name that you provided, which will be the main CDM database. The other database appends the cache to the database name that you provided. If you selected XBRL to be installed, a third database will also be deployed and will store all XBRL data. The CDM Server components are installed to the **wwwroot** directory of your Microsoft Internet Information Services (IIS) web server. For example, the components are installed to `C:\inetpub\wwwroot\CertentCDM-Server\`. You must import your SSL certificate on your web server and enable SSL communication for CDM.

SSL Certificates

Certent CDM requires a secure socket layer (SSL) certificate to allow clients to access the server. You must install an SSL certificate on your web server, and then associate the certificate with your web server SSL port. You must also ensure that SSL is enabled for the CDM website application.



Important: Do not use a self-signed certificate in a production environment. Ensure that you are using an SSL certificate from a recognized certificate authority.

Import an SSL Certificate to IIS 8.0


You can import an SSL certificate for Certent CDM if you use Microsoft™ Internet Information Services (IIS) 8.0.

1. In the **Internet Information Services (IIS) Manager** console, under **IIS**:
 - a. Double-click **Server Certificates**.
 - b. Click **Import**.
 - c. Browse to and select the SSL certificate.
 - d. Enter the password for the certificate and click **OK**.
2. Under **Sites**, select the website where the Certent CDM Server virtual directory is located, for example, Default Web Site.
3. Click **Bindings**.
4. Select the https type and click **Edit**.
5. In the SSL certificate window, select the certificate you imported, and click **OK**.
6. Close the Site Bindings window.
7. Select the **Certent CDM Server** website application.
8. Double-click **SSL Settings**.
9. Ensure that **Require SSL** is selected, and select **Ignore in the Client certificates section**.
10. Click **Apply**.

Install the Microsoft ClickOnce Client Installer

The Microsoft™ ClickOnce client installer allows client users to install the Certent CDM desktop client from a server URL. Ensure that you have installed the CDM Server on your computer. Install the Microsoft ClickOnce client installer on the computer where you installed the CDM Server. For more information about Microsoft ClickOnce, go to the [Microsoft Developer Network \(MSDN\)](#) website.

ClickOnce Installation Procedure

 **Important:** Due to the change from 32-bit to 64-bit of the CDM client, previously installed clients by ClickOnce will not be automatically upgraded upon start up. You must remove and redeploy the client.

1. Remove **Certent CDM** from **Programs and Features**.
2. Access the publishing server URL.
3. Click the **Install** button. Download and installation begins.
4. When finished, the CDM client is launched and a desktop shortcut is created.

The Microsoft ClickOnce server is installed to the **wwwroot** directory of your Microsoft Internet Information Services (IIS) web server. The ClickOnce client is installed to your temporary files location.

Log File Location for the CDM Server Components

The server components for Certent CDM are installed to the **wwwroot** directory of your Microsoft™ Internet Information Services (IIS) web server. For example, the components are installed to `C:\inetpub\wwwroot\CertentCDM-Server`.

Log files are in the **LogFiles** directory, for example, `C:\inetpub\wwwroot\CertentCDM-Server\LogFiles`.

CDM Desktop Client Installation

The CDM desktop client provides access to the CDM application server. It must be installed on individual administrator and end user computers.

Preinstallation Requirements

- You need to install Microsoft™ .NET Framework 4.7.2 (or a later version) software on all CDM desktop client computers. You can go to the [Microsoft website](#), and download Microsoft .NET Framework 4.7.2 (Standalone Installer), which is the full version, to install the software.
- Adobe™ Reader is required on all CDM desktop client computers. You can also use Adobe Acrobat.

Install the CDM Desktop Client

Prior to installation, ensure that Microsoft™ .NET Framework 4.7.2 (or later) software is installed on your computer.



Note: One Certent CDM and one Certent CDM Dev Client can each be installed at the same time on a machine, either on the same or different versions. The Certent CDM Client and Certent CDM Dev Client can each be upgraded at anytime without affecting each other.

To install the CDM desktop client:

1. Double-click the **setup.exe** file for installing the Certent CDM application to start the installation wizard.
2. Select a language for the installation wizard and click **OK**.
3. Click **Next**.
4. Accept the license agreement and click **Next**.
5. Select either **Typical** or **Custom** setup type, depending on what features you want to install. If you select Typical installation, the wizard takes you directly to the next step in this procedure.

Custom Setup

A custom setup must be used to install the XBRL and Filing features.

If you want to install XBRL, select **Custom** for the setup. All XBRL subfeature will be installed on the local hard drive. Click **Next**. The **License Keys** window opens and prompts you to enter your XBRL license key. Enter the license key and click **Next**. The wizard then takes you to the final installation window.

To install **Filing**, select this feature, and all subfeatures will be installed on the local hard drive. Click **Next**.

For the deployment of production .swtag files, select the **Production Environment** checkbox. Click **Next**.

6. If you have selected Typical installation and you want to change the installation location, click **Change** on the **Destination Folder** window and select another location.

7. Click **Install**.
8. Click **Finish** to exit the installation wizard.

Install the Client Using Microsoft ClickOnce

If the Microsoft™ ClickOnce publishing server has been installed on your CDM Server, you can install the CDM Client by accessing a URL on the server.

Ensure that Microsoft .NET Framework 4.7.2 (or later) software is installed on your computer.

You must use Microsoft Internet Explorer to install the client by using Microsoft ClickOnce.



Important: Due to the change from 32-bit to 64-bit, CDM desktop clients previously installed by ClickOnce will not be automatically upgraded upon start up. You must remove and redeploy the client.

1. Remove **Certent CDM** from **Programs and Features**.
2. Open **Microsoft Internet Explorer**.
3. In the address bar, enter the URL for the Microsoft ClickOnce installer, for example, `http://servername.domain/CertentCDMClickOnce/Ibm.CognosDM.application`, where **servername** is the name of the CDM Server.
4. Click **Install**. The client is installed and started automatically.

Install the Client Using a Silent Installation

You can also install the CDM desktop client silently without a graphical user interface.

1. Copy the **setup.exe** file for installing the Certent CDM application to a location on the client computer and go to that location in a Command window.
2. Type the following command to start the installation:

```
start /wait "install" setup.exe /s /v"/qn ADDLOCAL=Core,XBRL,FILING  
INSTALLDIR="" /l C:\install.log"
```



Important: Ensure that there are no spaces in `/v"/qn`. If you use spaces in the value of `INSTALLDIR`, ensure that you use quotation marks around the value, appropriately escaped. For example:

```
setup.exe /s /v"/qn INSTALLDIR=\"C:\Program Files\CognosCDM  
client\""
```

Access Certent CDM

After you install the CDM desktop client, you can access the product by logging in from a client computer.

Start the Client for the First Time

When you start the CDM desktop client for the first time, you must enter the URL of the CDM Server.

1. Open **Certent CDM** from the location where it was installed.
2. In the **Select a Server** window, enter the URL for the CDM Server, for example, `https://servername.domain/CertentCDMServer`.
3. Click **OK**.
4. In the **Login** window, type **Administrator** for user name and **!Admin321** for password.
5. Click **Login**.

Change the Default Administrator Password

When you install the CDM desktop client, a default administrator user is created, named Administrator, with a default password. You should use this user account to log in to Certent CDM for the first time. You can then use the account to create or import other users.

After you log in for the first time, ensure that you change the password for the Administrator user.

1. Click the **Home** tab, then in the **Navigation Pane**, click **Administration**.
2. Under **Security**, double-click **Users**.
3. In the work area, select the **Administrator** user from the list, then click **Home > Change Password**.
4. Type and confirm the new password. The password must conform to the Microsoft™ SQL Security password policy. For example, the password must meet the following criteria:
 - The password must not contain all or part of the user name.
 - The password is a minimum of eight characters in length.
 - The password contains three of these categories: Latin uppercase characters(A through Z), Latin lowercase characters (a through z), numbers (0 through 9), non-alphanumeric characters such as a number sign (#), percent (%), or dollarsign (\$).
5. Click **OK**.

Users and Permissions for Certent CDM

After you log in to Certent CDM as the default user, you must add users and grant permissions for each user.

Uninstall Certent CDM

You can uninstall Certent CDM from the Microsoft™ Windows™ Control Panel. Ensure that you exit the application before you uninstall the product.

If you are using a computer that runs the Windows 10 or Windows Server 2012/2016 operating system, take the following steps:

1. Click **Start > Settings > Control Panel > Programs and Features**.
2. Select **Certent CDM** or **Certent CDM Server**.
3. Click **Remove**.

Optional Data Source Configuration

You can configure Certent CDM to connect with external relational data sources including HFM. This provides users with additional options when connecting to relational data sources in CDM.

Data Source Connector

A web application is automatically deployed during CDM installation. It is used by the CDM Server to connect to the corresponding HFM server. But first, you must execute a batch file on the HFM server. This batch file enables the web application to make a connection. Once the web application is enabled, you can add and configure an HFM data source in CDM.

Deploy the Data Source Connector Web Application

You should deploy the Data Source Connector Web Application on the CDM Server before you can configure an HFM data source connection.

You must have the CDM installation files. With the Data Source Connector Web Application, CDM can connect to the corresponding HFM Connector on the HFM server.

Take the following steps:

1. Install CDM using the installation files given to you. The Data Source Connector Web Application is deployed on the CDM Server at this time. You can look for its location in the **Connector** folder where the CDM files were installed.
2. Locate the following files that are provided with the installation files and copy them into a folder on the HFM server.
 - hfmconnector.mf.boilerplate
 - replacer.bat
 - start.bat
 - config.bat
 - config.properties.boilerplate
 - hfmconnector.jar



Note: If you cannot locate the files, contact customer support and request them.

3. Run the **config** batch file and then the **start** batch file. This allows the web application on the CDM Server to connect to the HFM server.



Note: You must run the start batch file each time you restart the HFM server, or you can schedule to run it at startup. Run the config batch file any time you want to reconfigure the Data Source Connector.

4. The CDM Server can now connect to the HFM server. You can configure an HFM data source and use it in the CDM client.



Encryption Tools

Certent CDM provides encryption tools to ensure the security of your configuration files.

Encrypt and Decrypt Configuration Files

You can use the **EncryptionTool.exe** executable file to encrypt and decrypt the **ConnectionStrings.config** and **Credentials.config** files in CDM.

The EncryptionTool.exe executable file is in the Tools directory where you installed the server components, for example, in the `C:\inetpub\wwwroot\CertentCDM-Server\Tools` directory.

To encrypt, run the following command:

```
ConfigFileEncryptionTool.bat encrypt ../
```

To decrypt, run the following command:

```
ConfigFileEncryptionTool.bat decrypt ../
```



Note: ". ../" indicates that the Web.config file for the CDM Server is located in a folder one step above the location of ConfigFileEncryptionTool.bat.

Master and Data Encryption Keys

An encryption key is a mathematical value that allows components to verify that they are in communication with the expected server. Encryption keys are based on a public or private key pair that is created during the installation process. You can use the **Certent.EncryptionTool.exe** executable file to set, change, and export the master and data encryption keys for Certent CDM.

Certent.EncryptionTool.exe is also in the Tools directory where you installed the server components, for example, in `C:\inetpub\wwwroot\CertentCDM-Server\Tools`.

Supported Operations

You can perform the following operations with the encryption tools:

- **Generate Master Key (/GMK)**
Generates a new master encryption key.
- **Set Master Key (/SMK)**
Sets a user-specified master key.
- **Change Master Key (/CMK)**
Changes the master key with a user-specified master key.
- **Export Master Key (/EMK)**
Exports the master key from a configuration file to a user-specified file.

- **Generate Encryption Key (/GEK)**
Generates a new data encryption key.
- **Set Encryption Key (/SEK)**
Gets a user-specified data encryption key.
- **Change Encryption Key (/CEK)**
Changes the data encryption key with a user-specified data encryption key.
- **Export Encryption Key (/EEK)**
Exports the encryption key currently stored in the database to a user-specified file.

Command Structure

The following illustrates the structure of the commands for each operation, where, (/a /b denotes a grouping of two parameters to be used together, (/a | /b denotes a choice between two parameters, and [/a] denotes an optional parameter.

Generate Master Key

```
EncryptionTool.exe /GMK (/cfgfile:configfile | /o:outputfile)
```

Set Master Key

```
EncryptionTool.exe /SMK /newkey:thenewkey [/keyformat:format]  
(/cfgfile:configfile | /o:outputfile)
```

Change Master Key

```
EncryptionTool.exe /CMK /oldkey:theoldkey /newkey:thenewkey  
[/keyformat:format] (/cfgfile:configfile | /o:outputfile)  
[/db:connectionString]
```

Export Master Key

```
EncryptionTool.exe /EMK /cfgfile:configfile /o:outputfile
```

Generate Encryption Key

```
EncryptionTool.exe /GEK (/cfgfile:configfile |  
(/masterkey:themasterkey [/keyformat:format]))  
((/db:connectionString [/em:encryptionModule] [/f]) |  
/o:outputfile)
```

Set Encryption Key

```
EncryptionTool.exe /SEK /newkey:thenewkey [/keyformat:format]
(/cfgfile:configfile | /masterkey:themasterkey)
((/db:connectionString [/em:encryptionModule] [/f]) |
/o:outputfile)
```

Change Encryption Key

```
EncryptionTool.exe /CEK /oldkey:theoldkey /newkey:thenewkey
[/keyformat:format] (/cfgfile:configfile |
/masterkey:themasterkey) ((/db:connectionString
[/em:encryptionModule]) | /o:outputfile)
```

Export Encryption Key

```
EncryptionTool.exe /EEK (/cfgfile:configfile |
(/masterkey:themasterkey [/keyformat:format]))
/db:connectionString /o:outputfile
```

Help

```
EncryptionTool.exe /help
```

Arguments

The following explains the argument semantics.

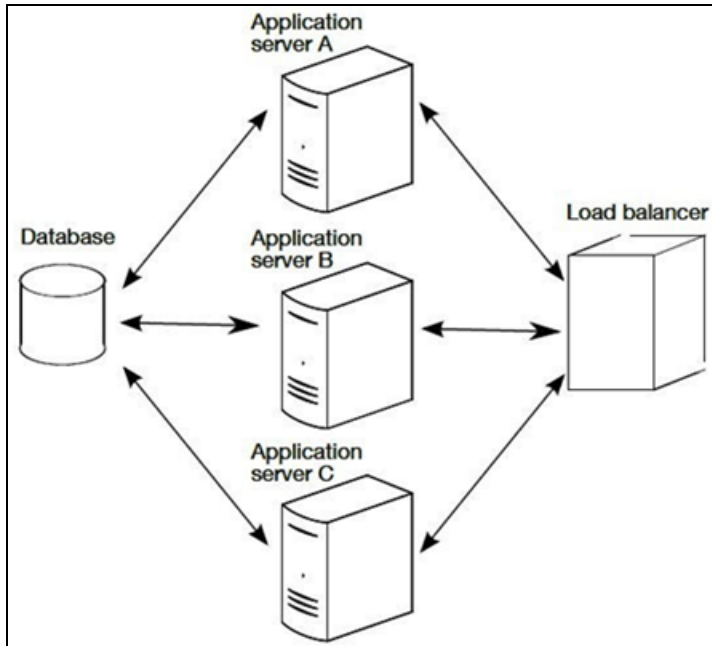
Argument	Description
/GMK	Flag for the Generate Master Key operation.
/SMK	Flag for the Set Master Key operation.
/CMK	Flag for the Change Master Key operation.
/EMK	Flag for the Export Master Key operation.
/GEK	Flag for the Generate Encryption Key operation.
/SEK	Flag for the Set Encryption Key operation.
/CEK	Flag for the Change Encryption Key operation.
/EEK	Flag for the Export Encryption Key operation.
/oldkey	The old master key or encryption key.
/newkey	The new master key or encryption key.
/masterkey	The master key to use for encryption key operations.
/keyformat	The format of the /oldkey, /newkey, and /masterkey arguments. Valid values are: <ul style="list-style-type: none"> plain - key: plaintext base64 - key: base64 encoded string

Argument	Description
	<ul style="list-style-type: none"> file - key: path to a key file
/f	Forces storing the encryption key in the database, and loses any data already encrypted.
/em	<p>The path to the encryption module to be used for database encryption or re-encryption.</p> <p>If this argument is missing from the encryption key operation, the data in the database is not changed.</p>
/cfgfile	The path to the configuration file where the master key will be saved for master key operations or load the master key from for encryption key operations.
/db	The connection string to the database where the encryption keys will be saved for encryption key operations, or where the encryption keys will be re-encrypted for master key operations.
/o	The file name (with relative or absolute path) where to save the new master or encryption key.
/help	Shows the help information.

Create a Load Balanced Environment

In Certent CDM, you can balance application requests across multiple servers to improve server utilization and availability.

Before you install and configure load balancing, it is important to understand the network topology that it requires. The following diagram illustrates the high-level technical architecture of load balancing.



Configure Load Balancing

Ensure that CDM is not installed on any of the target application servers, and that no database exists on the target database server. The load balancer should be configured to have an idle timeout of 31 minutes or longer.

1. Install CDM on application server A and ensure to select the **Database scripts** checkbox in the **Custom Setup** window in the installation wizard.
2. Install CDM on application server B and clear the Database scripts checkbox. Use the same database name and master key as you did when installing application server A.
3. Install CDM on application server C and clear the Database scripts checkbox. Use the same database name and master key as you did when installing application server A.
4. Disable the inMemory cache. In the **CDM.config** file (default location is `C:\inetpub\wwwroot\CertentCDM-Server\Config`), find the following section:

```

<cacheZones>
<add name="RefreshCache" enabled="true"
inMemoryStore="RefreshMemoryStore" persistentStore="PersistentStore"
scavenger="RefreshScavenger"/>
<add name="ImportCache" enabled="true"
inMemoryStore="ImportMemoryStore" persistentStore="PersistentStore"
  
```

```

scavenger="ImportScavenger"/>
<add name="DimensionalAnalysis" enabled="true"
inMemoryStore=DimensionalAnalysisMemoryStore
persistentStore="PersistentStore"
scavenger="DimensionalAnalysisScavenger" />
<add name="TaggingService" enabled="true"
inMemoryStore="TaggingServiceMemoryStore"
persistentStore="PersistentStore" scavenger="TaggingServiceScavenger"
/>
<add name="VisualizationService" enabled="true"
inMemoryStore="VisualizationMemoryStore"
persistentStore="PersistentStore" scavenger="VisualizationScavenger" />
</cacheZones>

```

Remove the value for the `inMemoryStore` attribute from each element. Your result should look like the following:

```

<cacheZones>
<add name="RefreshCache" enabled="true" inMemoryStore=""
persistentStore="PersistentStore" scavenger="RefreshScavenger" />
<add name="ImportCache" enabled="true" inMemoryStore=""
persistentStore="PersistentStore" scavenger="ImportScavenger" />
<add name="DimensionalAnalysis" enabled="true" inMemoryStore=""
persistentStore="PersistentStore"
scavenger="DimensionalAnalysisScavenger" />
<add name="TaggingService" enabled="true" inMemoryStore=""
persistentStore="PersistentStore" scavenger="TaggingServiceScavenger"
/>
<add name="VisualizationService" enabled="true" inMemoryStore=""
persistentStore="PersistentStore" scavenger="VisualizationScavenger" />
</cacheZones>

```

5. Since the inMemory cache is turned off, CDM will need to access the database directly. Ensure the account that CDM is using to connect to the database server has permission to access stored procedures. This requires that the SQL user has the `db_owner` permission.
6. Increase instance generation timeout. In the `System.ServiceModel.Bindings.config` file (default location is `C:\inetpub\wwwroot\CertentCDM-Server\Config`), find the following section:

```

<binding name="CdmWsHttpBindingForLargeData"
maxBufferSize="1073741824" maxReceivedMessageSize="1073741824"
messageEncoding="Text" textEncoding="utf-8" >
<readerQuotas maxDepth="68" maxStringContentLength="524288000"
maxArrayLength="1073741824" maxBytesPerRead="10485760"
maxNameTableCharCount="16384"></readerQuotas>
<security mode="Transport"><transport clientCredentialType="None"
proxyCredentialType="None" realm=""></transport></security>
</binding>

```

Add the `sendTimeout` and `receiveTimeout` attributes to match the idle timeout of the load balancer.

```
<binding name="CdmWsHttpBindingForLargeData"
maxBufferSize="1073741824" maxReceivedMessageSize="1073741824"
messageEncoding="Text" textEncoding="utf-8" sendTimeout="00:31:00"
receiveTimeout="00:31:00">
<readerQuotas maxDepth="68" maxStringContentLength="524288000"
maxArrayLength="1073741824" maxBytesPerRead="10485760"
maxNameTableCharCount="16384"></readerQuotas>
<security mode="Transport"><transport clientCredentialType="None"
proxyCredentialType="None" realm=""></transport></security>
</binding>
```

Install Updates in a Load Balancing Environment

In your load balancing environment, you can install Certent CDM updates to your application servers.

Apply a Single Update

Updates can be applied sequentially to each application server.

1. Install update on application server A.
2. Install update on application server B.
3. Install update on application server C.

Apply an Update Requiring an Intermediary Update

If the application servers are currently on Version 1 and they need to be upgraded to Version 3, which requires an intermediary upgrade to Version 2, take these steps:

1. Upgrade application server A to version 2.
2. Upgrade application server B to version 2.
3. Upgrade application server C to version 2.
4. Upgrade application server A to version 3.
5. Upgrade application server B to version 3.
6. Upgrade application server C to version 3.

Create a Load Balancing Environment with a Preexisting Database

In Certent CDM, you can create a load balancing environment with a preexisting database.

If a CDM database exists before you decide to create a load balancing environment, either from a FSR migration, or from a non-load balanced installation of CDM, you must perform these steps:

1. Ensure that the existing database is at the target version of the new load balanced system and apply any necessary updates.
2. Back up the existing database and delete it from the server.

3. Install CDM general release on application server A and use the same database name and master key as the existing database from step 1.
4. Install CDM general release on application server B. Ensure you disable database scripts when installing and use the same database name and master key as when you installed application server A.
5. Install CDM general release on application server C. Ensure you disable database scripts when installing and use the same database name and master key as when you installed application server A.
6. Apply any updates to bring the version number of the new system in line with the existing system.
7. Delete the database that was created as part of the installation on application server A.
8. Restore the existing database.

