

# WebCenter 20

## Installation Guide

02 - 2021

# Contents

<b>1. Copyright Notice.....</b>	<b>4</b>
<b>2. Overview of a WebCenter Installation.....</b>	<b>6</b>
<b>3. Hardware and Software Requirements.....</b>	<b>7</b>
<b>4. WebCenter Installation Tips.....</b>	<b>10</b>
<b>5. Installation Checklist.....</b>	<b>13</b>
5.1. Installation Checklist for Fresh Installation.....	13
5.2. Installation Checklist for Upgrade.....	15
<b>6. CHILI-WebCenter Connection.....</b>	<b>17</b>
6.1. Share between CHILI and WebCenter.....	17
6.2. Requirements for Reverse Proxy for CHILI Server.....	17
<b>7. Pre-Installation Steps.....</b>	<b>18</b>
<b>8. Installing WebCenter.....</b>	<b>22</b>
8.1. Overview of the Installation Procedure.....	22
8.2. Install SQL Server 2012/ 2017/2019 Express Edition on the Database Server.....	23
8.3. Install the Application Server Components.....	24
8.3.1. Install ArtiosCAD Enterprise on the Application Server.....	24
8.3.2. Activate the Licenses.....	25
8.3.3. Install the WebCenter Application Server.....	26
8.4. Run the Database Schema Scripts on the Application Server.....	28
8.5. Install the Web Server.....	31
8.5.1. Uninstall IIS on the Web Server if Configured Incorrectly.....	31
8.5.2. Install IIS on the Web Server.....	31
8.5.3. Extend the Upload Limitation.....	32
8.5.4. Disable 32 Bit Applications.....	32
8.5.5. Install the WebCenter Web Server.....	32
8.6. Install the On-Board Graphics Engine (OBGE) on the Application Server.....	35
8.6.1. How to Perform the Automation Engine 20.1 System Readiness Check.....	35
8.6.2. How to Install the Prerequisite Components.....	35
8.6.3. How to Install Automation Engine 20.1.....	36
<b>9. Testing WebCenter.....</b>	<b>37</b>
<b>10. Configuring WebCenter.....</b>	<b>38</b>
10.1. Configure the OBGE.....	38
10.1.1. Create a Container.....	38
10.1.2. Create a JDF Hot Folder (Access Point) for WebCenter.....	39

10.2. Configuring the E-Mail Notifications.....	39
10.2.1. Configure E-Mail Notification.....	39
10.3. Configure WebCenter for Use with ArtiosCAD Enterprise.....	41
10.3.1. Configuring BLOBs.....	41
10.3.2. Step 2 - Optionally Uploading Boards.....	42
10.3.3. Step 3 - Creating Shared Defaults for the First Time.....	42
10.3.4. Configuration in the WebCenter User Interface.....	43
10.4. Secure your WebCenter Site with SSL.....	44
10.4.1. Secure the WebCenter Web Server with SSL.....	44
10.4.2. Install SSL Certificates on the Workflow Production Server.....	52
10.5. Install Certificates for LDAPS on the Application Server.....	56
10.6. Integrate WebCenter with a Workflow Production Server.....	59
10.6.1. Understanding WebCenter Integration.....	59
10.7. Expose WebCenter to the Internet.....	62
10.7.1. Register a Domain Name.....	62
10.7.2. Contact Your ISP to Set Up an A Record.....	63
10.7.3. Move the Web Server Inside the Demilitarized Zone (DMZ).....	63
10.7.4. Configure IIS to Receive Traffic.....	64
<b>11. Deploying WebCenter.....</b>	<b>65</b>
<b>12. Localizing WebCenter.....</b>	<b>67</b>
12.1. Understanding Localization in WebCenter.....	67
12.2. How to Install Custom Translations.....	67
<b>13. The Help System.....</b>	<b>69</b>
<b>14. Upgrading WebCenter.....</b>	<b>71</b>
14.1. Forced System Reboot during Upgrade.....	71
14.2. Configuration Retained During Upgrade.....	71
14.2.1. Retained Configuration Values during Upgrade.....	71
14.2.2. FileStore Split during Upgrade.....	72
<b>15. Prepare for the Upgrade.....</b>	<b>73</b>
15.1. Prerequisites for the Upgrade.....	73
15.2. Prepare for the Upgrade on the Application Server.....	74
15.3. Prepare for the Upgrade on the Web Server.....	75
<b>16. Upgrade WebCenter.....</b>	<b>76</b>
16.1. Remove WebCenter.....	76
16.2. Install WebCenter 20.0.....	76
16.3. Upgrade the OBGE.....	77
16.4. Configure WebCenter.....	78
16.5. Additional step when you upgrade from 18 to later versions.....	78
<b>17. Uninstalling WebCenter.....</b>	<b>80</b>

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## 2. Overview of a WebCenter Installation

The WebCenter installation procedure involves a number of different steps that need to be performed in a specific order.

The table below shows a list of the steps required to install WebCenter either for the first time or as an upgrade:

Step	Description
1	Check the Requirements and perform pre-installation work: <ul style="list-style-type: none"> <li>• <a href="#">Hardware and Software Requirements</a> on page 7</li> <li>• <a href="#">Pre-Installation Steps</a> on page 18</li> </ul>
2	<a href="#">Installing WebCenter</a> on page 22: <ol style="list-style-type: none"> <li>1. <a href="#">Install SQL Server 2012/ 2017/2019 Express Edition on the Database Server</a> on page 23</li> <li>2. <a href="#">Install ArtiosCAD Enterprise on the Application Server</a> on page 24</li> <li>3. <a href="#">Install the WebCenter Application Server</a> on page 26</li> <li>4. <a href="#">Install the WebCenter Web Server</a> on page 32</li> <li>5. <a href="#">Start the WebCenter Services</a> on page 33</li> <li>6. <a href="#">Install the On-Board Graphics Engine (OBGE) on the Application Server</a> on page 35</li> </ol>
3	<a href="#">Testing WebCenter</a> on page 37
4	<a href="#">Configuring WebCenter</a> on page 38: <ol style="list-style-type: none"> <li>1. <a href="#">Configure the OBGE</a> on page 38</li> <li>2. <a href="#">Configuring the E-Mail Notifications</a> on page 39</li> <li>3. <a href="#">Secure your WebCenter Site with SSL</a> on page 44</li> <li>4. <a href="#">Install Certificates for LDAPS on the Application Server</a> on page 56</li> <li>5. <a href="#">Integrate WebCenter with a Workflow Production Server</a> on page 59</li> <li>6. <a href="#">Expose WebCenter to the Internet</a> on page 62</li> </ol>

### 3. Hardware and Software Requirements



**Attention:** For the latest hardware and software requirements, please check [the Esko website](#).

WebCenter employs three distinct servers, a **Web Server**, an **Application Server**, and a **Database Server**.

It also has a **FileStore** and an **On-Board Graphics Engine (OBGE)**, which is used to generate view data.

#### New IT Requirements since WebCenter 20

There are no specific new requirements for WebCenter 20. For the latest hardware and software requirements, please check [the Esko website](#).

#### New IT Requirements since WebCenter 14

Since 14, WebCenter runs on 64-bit operating systems only. Only Windows Server 2012 or later are supported.

#### Entry Level (Two Server Systems Required)

WebCenter Entry Level requirements are based on an activity with 10 concurrent users active at any time and less than 100 users in the system. Customers with higher performance needs should refer to the Advanced Level requirements.

In the Entry Level setup, the installation of the **Application Server** and **Database Server** is combined onto a single machine. The **OBGE** and the **FileStore** are on the Application Server.

For reasons of security the **Web Server** is always on its own dedicated computer and placed in a demilitarized zone (DMZ). We recommend the use of hardware firewalls for creating the DMZ.

#### Advanced Level (Three or More Server Systems Required)

When the WebCenter Entry Level cannot meet the load requirements of the system, it is possible to scale the system.

For reasons of security the **Web Server** will always be a separate computer in a DMZ.

Each of the other WebCenter components (**Application Server**, **Database Server**, **FileStore** and **OBGE**) can be offloaded onto separate machines in different combinations.

For Advanced Level installations, it is recommended to choose the **Advanced** Installer option to allow more custom configuration, and to choose **Extra Large** for the Deployment Size.

#### Requirements

Category	Entry Level (Standard - < 100 users)	Advanced Level (Extra Large - 100+ users)
Operating System	Microsoft Windows Server 2012 or better	Microsoft Windows Server 2012 or better

Category	Entry Level (Standard - < 100 users)	Advanced Level (Extra Large - 100+ users)
Processor - Application Server with On-Board Graphics Engine	x86-64 compatible processor (Intel or AMD), minimum 8 cores	x86-64 compatible processor (Intel or AMD), minimum 12 cores, 6 + 6 per 100 users
Processor - All other WebCenter Servers	x86-64 compatible processor (Intel or AMD), minimum 4 cores	x86-64 compatible processor (Intel or AMD), minimum 6 cores, 2 + 4 per 100 users, 2 + 6 per 100 users for separate DB server
RAM Memory (Application Server with DB and OBGE)	16 GB or more	36 GB or more
RAM Memory (Application Server with OBGE)	16 GB or more	28 GB or more
RAM Memory (Application Server)	12 GB or more	18 GB or more
RAM Memory (Separate Database Server)	12 GB or more	minimum 12 GB or the size of the DB (whichever is larger), add 8 GB per 100 users
RAM Memory (Web Server)	6 GB or more	12 GB or more
Available hard disk space - Application Server	20 GB or more	60 GB or more
Available hard disk space - Web Server	20 GB or more	60 GB or more
Available hard disk space - Database Server	40 GB or more	80 GB or more
Available hard disk space - File Store	<p>100 GB, should be expandable as data storage grows with usage.</p> <p>For WebCenter to perform according to expectations, the FileStore needs to be on Windows file servers.</p> <p>Recommended to use Windows Server 2008 R2, Windows Server 2012 or Windows Server 2012 R2 and Windows Server 2016 as file server (but ReFS data volumes are not supported yet).</p>	
Display	1024 x 768 pixels, 16-bit color minimum	1024 x 768 pixels, 16-bit color minimum

Category	Entry Level (Standard - < 100 users)	Advanced Level (Extra Large - 100+ users)
Media drives - Application Server	DVD-ROM or connection to networked DVD-ROM drive	DVD-ROM or connection to networked DVD-ROM drive
Media drives - Web Server	DVD-ROM or connection to networked DVD-ROM drive	DVD-ROM or connection to networked DVD-ROM drive
Network (all servers)	10/100/1000 Base-T Ethernet, TCP/IP v4 protocol	10/100/1000 Base-T Ethernet, TCP/IP v4 protocol
Database software	<ul style="list-style-type: none"> <li>Microsoft SQL 2008 R2 (Express Edition (SP2), Workgroup Edition, Standard Edition, Enterprise Edition)</li> <li>Microsoft SQL Server 2012/2014/2016/ 2017/2019 (Express Edition, Workgroup Edition, Standard Edition, Enterprise Edition)</li> <li>Oracle 10g or 11g or 12c Enterprise Edition</li> </ul> <p><b>Note:</b> Oracle 8i and 9i are no longer supported.</p>	<ul style="list-style-type: none"> <li>Microsoft SQL 2008 R2 (Workgroup Edition, Standard Edition, Enterprise Edition)</li> <li>Microsoft SQL Server 2012/2014/2016 /2017/2019 (Workgroup Edition, Standard Edition, Enterprise Edition)</li> <li>Oracle 10g or 11g or 12 c Enterprise Edition</li> </ul> <p><b>Note:</b> Oracle 8i and 9i are no longer supported.</p>

**Notes**

- The Database Server needs 10 GB of free space on the partition containing the database files to allow for database expansion.
- If you install the Global Vision extension on the OBGE, the OBGE needs to be separated from the WebCenter Application Server.  
If you install the additional Automation Engine Processor module license for WebCenter, the OBGE needs to be separated from the WebCenter Application Server.
- The Application Server is the default location for uploaded files (also known as the FileStore).  
Ensure it has at least 50 GB of available hard drive space, and that **the disk space is expandable**. Alternatively, find a network location with expandable disk space to specify as the file storage location when loading the Application Server.
- The Web, Application and Database Servers must have the same OS language, regional setting (such as `English (United States)`), and time zone setting.
- You must be able to download and install Java applets automatically to use the Java Viewer.  
If Java is installed but a red X appears in the browser when launching the Viewer, consult your system administrator to see if a firewall or proxy blocks Java downloads.
- If you are using a Microsoft Hyper-V hypervisor virtual machine, do not install both the WebCenter Web Server and the Esko Licensing software on this virtual machine.

## 4. WebCenter Installation Tips

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### Licenses

- **WebCenter Licenses**

To install WebCenter 20.0, request for the WebCenter 20.0 licenses.

The old WebCenter 18.x, 16.x, 14.x or 12.x licenses will not work anymore.

- WebCenter supports two types of licensing models. You can have counted licenses in the Named User Model and Concurrent License Model where you can have licenses that are taken up during a log-in sessions.
  - **Named User Licenses:** A named user license is an exclusive license of rights assigned to a single software user. This License model lets you pay for the number of users you want to create in WebCenter. This means that the purchased number of licenses (per type of users) limit the number of users that can be created. Read more in: [Licensing and Users](#) and in this [FAQ](#).
  - **Concurrent Licenses:**

In this model, you can create as many users as you want. The number of users who may use the system at the same time is determined by your **Concurrent Licenses**. The licensing model distinguishes between three types of users: guaranteed users, concurrent users, and editor users.

**Note:** Since WebCenter 14.0.2, large installations from 50 concurrent users require a WebCenter Advanced License. A special 'advanced' variant of the concurrent user licenses is also needed in this case.

### Network Licensing Tool

For WebCenter 20.0, you need to install ArtiosCAD Enterprise 20.0, this installation includes the required Network License Manager.

To know more about Network Licenses, [click here](#).

### Server Configuration

#### Port Configurations

Below you can find the ports which need to be open/available for proper functioning of WebCenter:

- Port 80 (HTTP) from the internet to the WebCenter Web Server (DMZ).
- Port 443 (HTTPS) from the internet to the WebCenter Web Server (DMZ).
- Port 80 (HTTP) from the LAN to the WebCenter Web Server (DMZ).
- Port 443 (HTTPS) from the LAN to the WebCenter Web Server (DMZ).
- Port 4444 from the WebCenter Web Server (DMZ) to the WebCenter Application Server (LAN).
- Port 5445 from the WebCenter Application Server to the Automation Engine server (LAN) for approval feedback
- Port 25 (SMTP) from the WebCenter Application Server (LAN) to the Mail Server.

**Note:**

- The following ports are internal ports for the Application Server and need not be configured on the firewalls. However, if any of these ports are taken by another application, the Application Server will not start. Ports: 8083, 8086, 1161, 1162, 1090.
- The following ports are internal ports for the WebServer and do not need to be configured on the firewalls. However, if any of these ports are taken by another application, the WebServer will not start. Ports: 8081, 8009.

**Note:** It is recommended to install the external viewer during the installation process.

- **Database**

The database shipped as default with WebCenter 20.0 is MSSQL 2012 / 2017 Express.

- **OBGE**

In case the OBGE 20.0 is installed on the Web Server (not recommended), make sure to stop the EG Web Server service before starting Tomcat.

**Note:** Since 16.1, Automation Engine no longer uses Hot Folders explicitly, but you can now configure the FileStore JDF Hot Folder by creating an Access Point which is described in [Create a JDF Hot Folder \(Access Point\) for WebCenter](#).

- **IIS**

If you move to WebCenter 20.0 from WebCenter 12.x, leaving the installation of IIS intact, a change to IIS may be needed. In IIS, go to Application Pools and open the Advanced Settings for DefaultAppPool. Make sure that 'Enable 32-Bit Applications' is set to 'False'. After changing the setting, click 'Recycle...'

- **Simple or Advanced Installation**

Since WebCenter 14, it is possible to choose between a **Simple** or **Advanced** installation. If the Advanced installation mode is selected, the memory size allocated for the JBoss service on the Application Server and the TomCat service on the Web Server need to be specified. Choosing the Extra Large option is recommended for servers that are expected to experience a heavy load and high concurrent user access.

- **Internal or External Viewer**

In case of an Advanced installation, the Viewer service can be set to Internal or External. Selecting External will make the Viewer service run as a separate process. Note that choosing External requires extra ports to be opened between the Application and Web Server: 14444. And the following ports need to be available for the application server: 1091, 3528 and 4446.

- **Database user**

In case of an Advanced installation, it is possible to set a custom password for the WebCenter database user.

- **Boards**

Previously, in older versions of ArtiosCAD Enterprise, the Boards needed to be installed by running a .bat file after the WebCenter installation. Since ArtiosCAD Enterprise 14.0, you can install the Boards automatically during the ArtiosCAD Enterprise installation, this is highly recommended.

### Servicing

- **Admin Console**

Since WebCenter 14, it is possible to inspect JBoss by going to: `http://yourhost:8086/admin-console`.

- **Services**

Since WebCenter14, you will only see the following services:

- JBoss
- Tomcat
- CAD-X

The App-X and Search Crawler services are no longer needed since WebCenter 12.

**Note:** In order to run the services interactively, open the command prompt and go to `.. \Esko \Artios \WebCenter \ApplicationServer \NAMEOFSERVICE \bin` for each service, and run `wcr_nameofservice_srv_cmdrun.bat`. For example: `C:\Esko\Artios\WebCenter\ApplicationServer\JBoss\bin\wcr_jboss_srv_cmdrun.bat`.

## 5. Installation Checklist

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The Installation Checklist can be used as a tool alongside the rest of the Installation Guide to ensure you completed all the necessary steps during the installation. There are two versions, the first one can be used for a fresh installation, the second one can be used in case of an upgrade.

### 5.1. Installation Checklist for Fresh Installation

---

This checklist can be used whilst performing a fresh installation of WebCenter (meaning WebCenter was not installed on the same machine(s) before).

Please complete the Installation Checklist in the same order as listed here.

**Note:** Do not run this installation from a network share.

#### On the Application Server...

- Install ArtiosCAD Enterprise located on the WebCenter DVD.
- Install **License Server Components** from the ArtiosCAD Enterprise Installer.
- Activate Network Licenses via the **Network License Manager**:
  - WebCenter (Standard or Advanced)
  - CAD Engine
  - OBGE
  - Optional licenses
- If you are going to use MS SQL Server (no prerequisites for Oracle):
  - Install **MS .NET framework 3.5** (run the script from the WebCenter DVD to install it).  
Or, if you use a MS SQL Database on Windows Server 2008 r2 without access to the Internet:  
<https://wiki.esko.com/display/KBA/KB208233361%3A+How+to+install+.NET+3.5+on+Windows+2012%2C+Windows+8+and+late>
  - Install **MS .NET framework 4.5** (run the script from the WebCenter DVD to install it).

**Note:** For servers with Windows Server 2012 or with access to the Internet, this will happen automatically.

- Install the **SQL Server 2012 SP1 Express Edition** Database engine for WebCenter or **SQL Server 2017 Express Edition** or **SQL Server 2019 Express Edition**.
- Always install **SQL Management Studio** on the Application Server.

- Create the local **BGSYSTEM** Windows user (run the script from the WebCenter DVD to create it).
- Create the **FileStore** folder and share it as a network folder with all rights enabled for the **BGSYSTEM** user.
- Install the **Application Server** component of WebCenter; build the Database schema and **REBOOT**.
- Install the **OBGE** from the Automation Engine DVD by selecting the option: **Install Automation Engine 20.0 as On Board Graphics Engine (OBGE) for WebCenter**.
- Configure the **Access Point** (formerly known as Hot Folder) in the Automation Engine Pilot to generate view files for graphic files.

**On the Web Server...**

- Install and configure **IIS 7** (Windows Server 2008 r2) or **IIS 8** (Windows Server 2012) on the Web Server.  
It is recommended to auto install IIS using the provided PowerShell Script from the installation disk, to configure IIS on Windows Server 2012 or later.
- Make sure that **Enable 32-bit programs** in IIS is set to **False**.
- Increase the upload limit in the request filtering.
- Install the **Web Server** component of WebCenter and **REBOOT**.

**On the Application Server...**

- Since WebCenter 12.1, services are started automatically. Verify that the following services are started:
  - JBoss**
  - CAD-X**
  - Application Monitor**

**On the Web Server...**

- Verify that the following services have been started:
  - TomCat**
  - Application Monitor**
- Connect to WebCenter in your browser: `http://[WebServer]/WebCenter_Inst.`
  - Username: admin. Password: [blank].
  - Change password.
- Install the **ArtiosCAD Defaults** in **English** and **Import the Boards** (directly from the ArtiosCAD Defaults Installer).
- Run the CADX User Defaults installer, to install optimal **Defaults for the WebCenter Cad-X service**

- Run the Studio Defaults installer, to install **Studio Print Finishing Profiles** for working with advanced material effects in 3D visualization

## 5.2. Installation Checklist for Upgrade

---

This checklist can be used whilst performing an upgrade installation of WebCenter 20.0 from an older version.

Please complete the Installation Checklist in the same order as listed here.

**Note:** Do not run this installation from a network share.

### On the Web and Application Server...

- Stop all WebCenter services.

### On the Application Server...

- Backup the whole `.. \WebCenter\ApplicationServer` folder (make a **copy**, do not move it) and backup the following:

- FileStore**

- Database**

- Email configuration** (if you upgrade from a WebCenter < 12)

### On the Web Server...

- Backup the whole `.. \WebCenter\WebServer` folder (make a **copy**, do not move it).
- Uninstall** the old version of WebCenter on both Application and Web Server and **REBOOT** both servers after uninstall.
- Remove all** WebCenter **instances** in **IIS** on the Web Server.

### On the Application Server...

- Upgrade to ArtiosCAD Enterprise 20.0 located on the WebCenter DVD.
- Upgrade the **Network License Manager** via the **Install License Server Components** from the ArtiosCAD installer.
- Upgrade WebCenter **Licenses and dependants** (CAD Engine and OBGE) to 20.0.
- If you are using MS SQL Server, make sure that **SQL Management Studio** is always installed on the Application Server.
- Install the **Application Server** component of WebCenter using the existing FileStore and Database. **DO NOT REBOOT YET**
- Re-apply email customization on the Application Server.
- Build the **Database schema** if this was not done during the installation.

**REBOOT**

- Update to Automation Engine OBGE 20.0 and configure the **Access Point** (formerly known as Hot Folder) in the Pilot to generate view files for graphic files.

**On the Web Server...**

- Install the **Web Server** component of WebCenter.
- Make sure that **Enable 32-bit programs** in **IIS** is set to **False**.
- To be able to use Excel based lists from the Web Server, install a 64-bit driver (see link on the WebCenter DVD). **DO NOT REBOOT YET**
- Re-deploy WebCenter Instance(s) and re-apply customizations.
- REBOOT**

**On the Application Server...**

- Since WebCenter12.1, services are started automatically. Verify that the following services are started:
  - JBoss**
  - CAD-X**
  - Application Monitor**

**On the Web Server...**

- Verify that the following services have been started:
  - TomCat**
  - Application Monitor**
- Connect to WebCenter in your browser: `http://[WebServer]/WebCenter_Inst.`
  - Username: admin. Password: [old admin password].
- Install or merge the **ArtiosCAD Defaults** in **English** and **Import the Boards** (directly from the ArtiosCAD Defaults Installer).
- Install the **ArtiosCAD Defaults** in **English** and **Import the Boards** (directly from the ArtiosCAD Defaults Installer).
- Run the CADX User Defaults installer, to install optimal **Defaults for the WebCenter Cad-X service**
- Run the Studio Defaults installer, to install **Studio Print Finishing Profiles** for working with advanced material effects in 3D visualization.

## 6. CHILI-WebCenter Connection

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### 6.1. Share between CHILI and WebCenter

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A **CHILI share** is used to temporarily hold the files while registering them to the **CHILI server**. WebCenter will create a sub folders corresponding to the CHILI environments in this CHILI share root folder.

**Note:**

The share must have:

- read and write permissions for WebCenter 'BGSYSTEM' user.
- read permissions for CHILI server.

### 6.2. Requirements for Reverse Proxy for CHILI Server

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IIS ports accessing CHILI over the WebCenter web server should be:

- 80 for IIS `http`
- 443 for IIS `https`

The `https` ports must have a security certificate attached to it in order to be able to work with Web Server.

**Note:** The best practise is to install a properly signed certificate, matching the CHILI server hostname (NOT the tricked hostname) on the CHILI server. In this scenario, the validation of the SSL certificate will be smooth when the WebCenter Application Server makes a connection to it.

Alternatively, you may use a self-signed certificate. However, these are NOT supported for the WebCenter Web Server. You may get SSL validation errors when the WebCenter Application Server tries to connect to the CHILI server due to this.

As a work-around, use the WebCenter LDAP CertInstall tool:

- Go to the `<Installation Directory>\ApplicationServer\LDAP`.
- Run the following command:

```
CertInstall.bat <chiliserver>:443
```

- Select the right certificate to install by entering a digit.
- Restart the JBoss.

This will solve the SSL validation problems.

# 7. Pre-Installation Steps

Execute the following steps to make sure you have all the required information and materials for the installation.

1. Log on to all servers as a **local administrator** user.



**Attention:**

Logging on as DOMAIN ADMIN does not ensure you are a member of the local Administrators group.  
Verify that the account you are using to log on to each machine belongs to the local Administrators group before you continue!

2. Make sure you use **compatible** software versions:
  - a) Gather the installation media on CD or DVD for ArtiosCAD Enterprise, WebCenter, and Automation Engine (OBGE).
  - b) Only very specific versions of ArtiosCAD Enterprise, WebCenter, and Automation Engine (OBGE) work with each other.

You CANNOT assume that a new version or build of one product will be compatible with older versions of the other products.

Software	Version	Build
ArtiosCAD Enterprise	.....	.....
WebCenter	.....	.....
Automation Engine	.....	.....

3. Check the **licenses** for the Esko installers:
  - a) Gather Graphics and CAD licenses.
  - b) If this is an upgrade, you will need to ask for updated license files.
  - c) Check the license files against your software order.

Verify that the licenses have the correct number of users, the expiration date if applicable, and the correct ArtiosCAD Enterprise, WebCenter, and Automation Engine (OBGE) version information.

4. Gather the required **mail server** information:

**Note:**

The mail server must be on the same network as the WebCenter Application Server.  
Also, ensure this mail server has a send-only e-mail account already created for specific use with WebCenter notifications (this usually requires creation of an account such as webcenter@mycompany.com).

Mail Server Information	Value
Mail Server Name	.....
Mail Server IP Address	.....
SMTP Port	.....
WebCenter Sender Address	.....
SMTP Authentication User Name	.....
SMTP Authentication Password	.....

5. Gather the required **database information** from the database administrator:

Database	Item	Value
SQL Server	server name	.....
	"sa" password	.....
	database instance name	.....
	database port (default is 1433)	.....
Oracle Server	server name	.....
	'sys' password	.....
	TNS name	.....
	System ID (SID)	.....
	database port (default is 1527)	.....

6. Ask the database administrator whether a custom password for the 'WebCenter' database user will be required and if so, retrieve the expected target password for this database user.

7. Perform a Web Server health check:

a) We highly recommend not to begin the install with the Web Server inside the DMZ. It is best to **configure on a local LAN** first.

Get all applications installed, configured, and fully functional before moving the Web Server inside the DMZ. Otherwise any required troubleshooting will be difficult and will take longer than needed.

b) Verify that **Internet Information Services (IIS)** is installed and its services are started: IISADMIN and W3SVC (World Wide Web Publishing).

c) Make sure the **Server** service is running.

8. Test the mail server connection:

**Note:**

Ensure that you can use telnet commands and that its port is not blocked in any way.

Make sure you test this before starting the installation. IT Administrators often block the required SMTP ports.

- a) From the Application Server, open a command prompt.
- b) Use a telnet command with the following syntax: `telnet <mail_server_name_or_ip> <smtp_port#>`.

For example, my mail server name is `mail.eskwebcenter1.com` and my SMTP port is 25.

I would type: `telnet mail.eskwebcenter1.com 25`.

You are looking for a successful response (for example like the one below); a 220 response is good.

```
telnet mail.eskwebcenter1.com 25Trying 62.204.32.250...Connected to
mail.eskwebcenter1.com (62.204.32.250).220 mail.eskwebcenter1.com Mail Server;
Mon, 2 Jun 2014 11:26:40 EST
```

Type `QUIT` to exit the telnet command.

9. Make sure the **Server** service is running on the Application Server.

10. Check the Database Server:

- a) Ensure the correct database engine, version and service pack are installed. See section [Install SQL Server 2012 Express Edition on the Database Server](#).
- b) For SQL Server 2008/2012/2017/2019 or Express 2008/2012/2017/2019 verify these configurations:
  - Must be configured to run in Mixed Mode for authentication;
  - Language/Character set of SQL Server must match the Operating System language;
  - TCP/IP must be enabled.
  - If a named instance is used, the SQL Server Browser must be set to start automatically (and must be running).
- c) This assumes that the system is protected by an external firewall.

11. Check performance for all servers:

- a) For all servers (Web, Application, Database), ensure Windows System Performance is set to **Adjust for Best Performance**:

Go to **Control Panel > System > Advanced** and select **Adjust for Best Performance** from the **Performance** list.

- b) Ensure **Control Panel > Automatic Updates** is set to **Download updates for me, but let me choose when to install**.

Windows Updates have been known to interfere with WebCenter operation: some updates lock down ports and stop services related to web and internet.

It is your responsibility to test Microsoft updates before applying them to production servers.

- c) Ensure **Windows Firewall** is disabled:

Go to **Control Panel > Network Connections**, right-click on the active network connection and choose **Properties**. On the **Advanced** tab, ensure **Internet Connection Firewall** is disabled.

d) Stop and **temporarily disable virus software.**

Temporarily stop virus services on the Web Server and the Application Server as they are known to interfere with the WebCenter installation script.

Only after the software is installed should you enable the virus software again.

## 8. Installing WebCenter

---

Installing WebCenter is a multi-step process spread over two or three servers depending on your configuration. We strongly recommend having three servers.

### 8.1. Overview of the Installation Procedure

---

This is a broad overview of the steps required to install WebCenter.

1. Perform the [Pre-Installation Steps](#) on page 18.
2. On the **Database Server**, optionally create a database called `WebCenter4_0` if using Microsoft SQL Server. If you do not create the database at this point, it will be done by the WebCenter installer.

If using Oracle, we recommend that the SID (System Identifier) of the database be `WCenter`, but it can be anything; just make sure you know the exact name so you can enter it while loading WebCenter on the Application Server.

3. On the **Application Server**:

- a) If using Microsoft SQL Server or SQL Server Express Edition, install Microsoft SQL Server Management Studio (if you have not done so already). This is provided as part of the MSSQL Express installer provided on the DVD. If you are using Oracle, it is advised to also install SQL Developer Studio, which can be downloaded from the Oracle web site.
- b) [Install ArtiosCAD Enterprise](#).

Even if the Application Server already has a version of ArtiosCAD Enterprise on it, you must load the version that came with WebCenter.

For more information on loading and configuring ArtiosCAD Enterprise, refer to the installation instructions on its media.

- c) [Activate the Licenses](#) on page 25
  - d) [Install the WebCenter Application Server](#).
4. [Run the Database Schema Scripts](#) on the **Application Server**.

This is only required if the database schema scripts were not run automatically, or if the automatic run failed. Running the database schema scripts automatically is preferred. If needed, it is still possible to run the database scripts manually from the **Application Server**.

5. On the **Web Server**, [install the WebCenter Web Server](#).

Reboot the Web Server machine if prompted.

6. [Start the WebCenter Services](#):

- a) On the **Application Server**, start **JBOSS** and **CAD-X**.
- b) On the **Web Server**, start **Tomcat**.

**Note:** These services are set to start automatically by the installer and will thus be started automatically after each machine reboot. If you prefer to start the services manually, you may set them to start manually by changing their properties in the **Services** applet via **Control Panel > Administrative Tools**.

**Note:** Since WebCenter 12 a new monitoring service is installed and started automatically. This service can be used by your WebCenter support agent for troubleshooting.

7. [Install the On-Board Graphics Engine \(OBGE\)](#) from the Automation Engine media. This will take about a half hour.

**Note:**

You must install the OBGE even if you are running a separate Automation Engine production server. The OBGE will handle files uploaded through the WebCenter user interface, reducing the load on your Automation Engine production server.

WebCenter is now installed.

8. Log on the WebCenter web interface and:
  - a) [Change the administrator password](#).
  - b) [Configuring the E-Mail Notifications](#) on page 39 if you will be using it.
9. Install the ArtiosCAD defaults.  
See [Loading the ArtiosCAD Defaults](#) for details.

## 8.2. Install SQL Server 2012/ 2017/2019 Express Edition on the Database Server

---

Microsoft SQL Server 2012 / 2017/2019 Express Edition (supplied with WebCenter) is a free version that can serve as the database engine for WebCenter.

To install it, use the **Install the SQL Server 2012 / 2017 /2019 Express Edition database engine for WebCenter** link on the WebCenter installation media.

Following steps describe how to install the MSSQL Server 2012/ 2017/2019 Express database on a clean system:

1. When the **SQL Server Installation Center** launches, select the option **New SQL Server stand-alone installation or add features to an existing installation**.
2. If prompted, accept the **License Terms** and click Next.
3. A quick check will be done and the installation will be prepared.
4. Select the **Features** you wish to install. If unsure, enable all except **LocalDB**.
5. On the **Instance Configuration** screen, select **Named Instance** and name your instance **WEBCENTER**. You can also change the instance root directory if you want.
6. On the **Server Configuration** screen, you can define separate accounts for each service, leave as default.
7. You can also specify your **Database Engine Collation**, leave as default.
8. On the **Database Engine Configuration** screen, choose the **Mixed Mode** authentication type.
9. On the same screen, specify the **SQL Server system administrator (sa)** password.
10. On the **Reporting Services Configuration** screen, select **Install and Configure** and click **Next**.
11. The system will now continue with the installation. The last screen shows that the installation process was completed successfully. You may be asked to restart the computer.
12. If you now inspect your Programs, you should see **Microsoft SQL Server 2012 / 2017** listed, along with other tools like **SQL Server Management Studio**.

13. Launch the **SQL Server Management Studio** to check the connection to the Database Engine.
14. In case it has not been created yet, add a new database named **WebCenter4\_0**.
15. Launch the **SQL Server Configuration Manager** to check the TCP/IP and SQL Server service statuses.
16. Choose **SQL Server Network Configuration > Protocols for WEBCENTER >** , make sure **TCP/IP** is set to **Enabled** for **WebCenter**.
17. In the **SQL Server Services** section, restart the **SQL Server** service. Also, make sure the **SQL Server Browser** service is running.

## 8.3. Install the Application Server Components

---

### 8.3.1. Install ArtiosCAD Enterprise on the Application Server

1. Log on to the Application Server as a member of the local Administrators group.
2. Load the ArtiosCAD Enterprise media that came with WebCenter.

**Important:**

Even if the Application Server already has a version of ArtiosCAD Enterprise on it, you must load the version that came with WebCenter. In the case of WebCenter 20.0, you need ArtiosCAD Enterprise 20.

Make sure to also run the **Install Network License Components** installer from the **ArtiosCAD Enterprise Installer**.

In order for WebCenter to output PDF files, the ArtiosCAD PDF option must be purchased and then chosen when installing.

For more information on loading and configuring ArtiosCAD Enterprise, refer to its installation instructions on the ArtiosCAD media.

3. In the **Esko ArtiosCAD Setup** window, click **Install Esko ArtiosCAD Enterprise 20 en**.

Depending on your system configuration prior to loading ArtiosCAD, the Microsoft Data Access Components and MSXML 6 may be copied to your system.

If the system prompts you to reboot, do so; the installation program will resume automatically when you log in after the system comes up again. Do not postpone rebooting if the system requests it.

4. The **Esko ArtiosCAD Enterprise 20 en InstallShield Wizard** opens.
  - a) In the **Licensing Method** screen, choose **Network Licenses**. Make sure the **Server** field contains the name of the Application Server (it should be filled in by default).
  - b) In the **Setup Type** screen, choose **Typical** for a regular WebCenter installation, or **Advanced** if you will be working with ArtiosCAD Enterprise.
  - c) In the **Feature Selection** screen, make sure **PDF Import/Export** is enabled.

**Note:** You will only see this screen when performing an **Advanced** setup to work with ArtiosCAD Enterprise.

- d) In the **Advanced Options** screen, you can leave the default options selected. If you wish to change them please see the ArtiosCAD documentation for details.

**Note:** You will only see this screen when performing an **Advanced** setup to work with ArtiosCAD Enterprise.

- e) In the **User Files Folder** screen, keep the default location for the storage of user files, or **Change** it if desired. If you change the location to another system, use a UNC locator (for example `\system2\designs`) instead of a mapped drive letter.

**Note:** You will only see this screen when performing an **Advanced** setup to work with ArtiosCAD Enterprise.

- f) Click **Install**.  
g) Once the installation is complete, click **Finish** to close the installer.

5. If the system asks you to reboot, do so.

**Note:** You will need to perform *extra configuration later* to work with ArtiosCAD Enterprise.

**Note:** Since ArtiosCAD Enterprise 14.0, you can install the Boards automatically during the ArtiosCAD Defaults installation, this is highly recommended. In case you do not choose to install the Boards during the ArtiosCAD Enterprise installation, you will have to import them manually later.

### Create a Detailed Installation Log

For Installation debugging and troubleshooting purposes, you can create a detailed installation log file for any Esko Installer programs. To do this:

Run setup using the following syntax: Path+program space /v"/l\*v space path+logfilename

- For example: For ArtiosCAD Enterprise installation from CD-ROM in my D:\ drive,
- Open a command prompt and Change to the D:\ drive
- Type: `setup /v"/l*v c:\temp\ACsetup.log"`

## 8.3.2. Activate the Licenses

If you have not done so already, install the **Network License Components** from the **ArtiosCAD Enterprise Installer** first.

Activate your licenses using the Esko Network License Manager.

**Note:** To perform this task, consult the **Network License Manager User Manual**.

You need to activate:

- your ArtiosCAD Enterprise license,
- your WebCenter licenses (your basic WebCenter license and any additional WebCenter license you have, for example WebCenter Task Management, WebCenter Advanced Approval, Reporting, etc.).

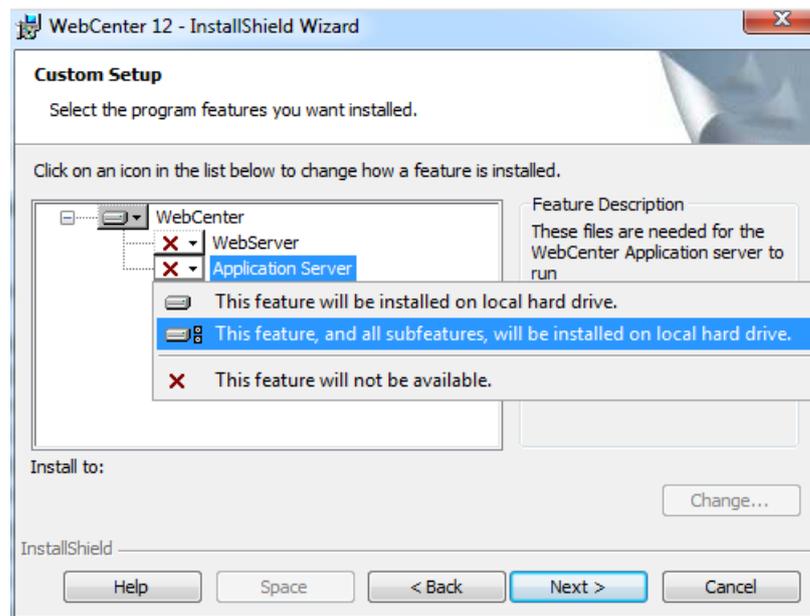
- your license for the OBGE (Automation Engine license).

### 8.3.3. Install the WebCenter Application Server

The Application Server components of WebCenter can be installed from a link on the installation media.

Before doing so, click the link on the DVD to **Create the local BGSYSTEM Windows user**, if this user was not created earlier.

1. Log on to the Application Server as a member of the local Administrators group.
2. Insert the WebCenter media into the media drive, and click **Software Installation** on the menu that appears at left, then **Install WebCenter 20.0**.
3. The setup wizard opens with a **Welcome** screen. Click **Next**.
4. In the **License Agreement** screen, read the agreement, and if you agree to it, select **I accept the terms in the license agreement** and click **Next**.
5. Select either **Simple (default)** or **Advanced** Installation. Keep **Simple (default)** selected unless you mean to specify non-default values for either **Installation Size**, **Image Viewer Service** or **Database User management**.
6. In the **Custom Setup** screen:



- a) Click the icon next to **WebServer** and select **This feature will not be available**.
  - b) Click the icon next to **Application Server**, and select **This feature, and all subfeatures, will be installed on local hard drive**.
  - c) If desired, click **Change** to change the installation folder.
  - d) Click **Next**.
7. In the **WebCenter File Storage Folder** screen, choose the location where all data files uploaded to WebCenter will be stored (the **FileStore**).

**Note:** If you want to change the FileStore location, click **Change...** and browse to your desired location or enter a UNC address. Using a UNC location such as `\\system\sharename\FileStore` is the most reliable option. The FileStore should be on a partition with **at least 50 GB of free space**.

**Troubleshooting:**

If the installer fails to create the FileStore, it will give you a message saying that you have to set it up manually.

Go to the folder that you will use as a FileStore (by default, `C:\Esko\Artios\WebCenter\FileStore`, or the location of your choice), and **share** it (typically to the user `BGSYSTEM`).

Click **Next**.

8. In the **Web Server System** screen, enter the name you will give to the Web Server and click **Next**.

**Note:** Once you have completed the installation and launched WebCenter, the Application Server must be able to **resolve the Web Server name you have entered here into an IP address**.

9. In the **Database Configuration** screen, enter your database information:.

- a) Choose your **Database program (Microsoft SQL Server or Oracle)**.
- b) Enter the name of your Database Server in **Database server system**.
- c) If you chose...
  - **Microsoft SQL Server**, enter your **Database Instance Name**. By default, this is `WEBCENTER` (using the SQL Server 2012/2017 Express Edition installer on the WebCenter installation media created this instance).
  - **Oracle**, enter your **Database System Identifier (SID)**.

Click **Next** when done.

10. A custom **WebCenter** database user password can be set. In that case you will need to provide a password value. This screen will only be shown in case of an Application Server installation.

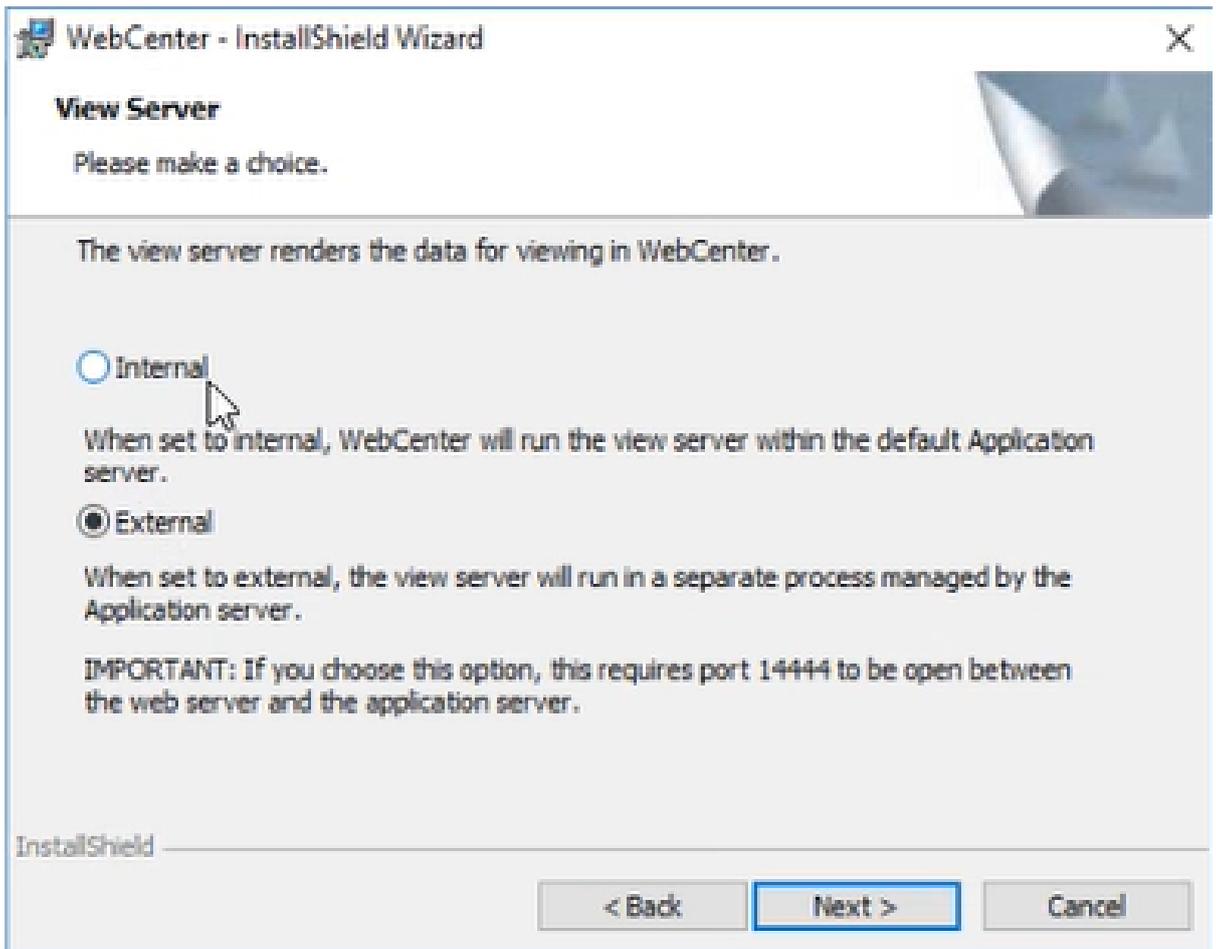
**Note:** This screen appears only for Advanced installation.

11. Choose between a **Standard (default)** and an **Extra Large** deployment. If **Extra Large** is selected, Tomcat and/or JBoss (depending on the server being installed) will be able to allocate 3 times more memory as is the case with a Standard installation.

**Note:** This screen appears only for Advanced installation.

12. Choose between an **Internal** or **External** (default) View server. If Internal is selected, the View Server runs inside the JBoss process. If External is selected, an additional process running the View Server will be started automatically. For the External view server to work, other ports need to be open in the firewall between the web and the application server: 14444.

**Note:** If installing Web and Application server component separately – a matching mode (either external or internal) has to be selected for both the Application server and Web server – otherwise the Viewer will not function properly.



13. Click **Install** in the **Ready to Install the Program** screen.
14. The **Esko Station Information Service** may be installed if this is the first Esko software being loaded on the machine.  
If it installs, click **Continue** when it is done, or wait 10 seconds for the process to continue automatically.
15. Click **Finish** when the installation completes.
16. If prompted, reboot the system.



**Attention:** This is important; do not postpone this step!

## 8.4. Run the Database Schema Scripts on the Application Server

Since WebCenter 12.1, it is no longer necessary to run the database schema scripts manually. The database schema scripts can now be run from the installer dialog, for both local and remote databases.

When the database scripts are run automatically, a system console readout window will show feedback on the progress. Individual SQL statement blocks are displayed as they are being executed.

To run the database scripts automatically, database connection parameters need to be entered in the **Database Configuration** dialog which is displayed during the installation of the WebCenter Application Server:

1. Choose your database type from the **Database program** list.
2. Enter the database host name in the **Database Server system** field.
3. For SQL, enter the instance name in the **Database Instance Name** field.
4. For Oracle, enter the SID in the **Database System Identifier (SID)** field.
5. The checkbox **Run DB update scripts during installation** determines whether the database schema scripts are run automatically during installation (preferred), or not.
6. If running the scripts automatically is enabled, the **DB sysadmin connection password** field becomes available. Enter the password of the default database administrator user for your Database Server in this field.

If you still want to run the scripts manually, do the following:

1. Locate the `ServerTools\update_db.bat` file in your WebCenter installation folder (for example `C:\Esko\Artios\WebCenter\ServerTools\update_db.bat`).
2. Run this file with the appropriate parameters in the console.

**Tip:**

Run this file without parameters first to see help about which parameters you need to use.

- If you have a SQL database, you will see this:

```
C:\Esko\Artios\WebCenter\ServerTools>update_db.bat

WebCenter Database Updater

Minimally required argument is an 'sa' password
Full usage:
update_db.bat <sa_password> [ <db_type> [ <db_host> [ <db_instance> [ <db_sa_user> ] ] ] ]

Parameters other than the password are optional. The sequence of
parameters is not. If you want to specify a certain parameter, you need to
specify all preceding parameters. Any of the params you do not specify,
will default to the value specified at installation time. If you need to pass
empty parameters, use "".

db_type can be mssql or mssql
mssql (default) will create the webcenter DB if it doesn't exist yet
If you want to switch to oracle a reinstall is required.

Current defaults are:
<db_type> = mssql
<db_host> = RDUMWC11
<db_instance> = WEBCENTER
<dba_user> = sa

C:\Esko\Artios\WebCenter\ServerTools>_
```

- If you have an Oracle database, you will see this:

```
C:\Esko\Artios\WebCenter\ServerTools>update_db.bat

WebCenter Database Updater

Minimally required argument is a 'sysdba' password
Full usage:
update_db.bat <dba_password> [ <db_host>[:<db_port>] <db_service_name> [ <dba_user> ] <db_string_data_type> [ <db_data_table_space> [ <db_temp_table_space> [ <db_index_table_space> ] ] ] ]

Parameters other than the password are optional. The sequence of
parameters is not. If you want to specify a certain parameter, you need to
specify all preceding parameters. Any of the params you do not specify,
will default to the value specified at installation time. If you need to pass
empty parameters, use "".

If you want to switch to MS SQL a reinstall is required.

Current defaults are:
<db_host>[:<db_port>] = RDUMWC04
<db_service_name> = XE
<dba_user> = sys
<db_string_data_type> = varchar2
<db_data_table_space> = USERS
<db_temp_table_space> = TEMP
<db_index_table_space> = USERS

C:\Esko\Artios\WebCenter\ServerTools>_
```

## 8.5. Install the Web Server

---

### 8.5.1. Uninstall IIS on the Web Server if Configured Incorrectly

In some cases IIS may already be installed on the Web Server, but configured incorrectly. For example, your hosting company may have set up IIS for you. In this case, IIS needs to be uninstalled. After which it can be installed again and configured correctly.

The procedure below describes how to uninstall IIS 7.

1. Start the Server Manager.
2. Navigate to the **Roles** section using the navigation tree.
3. Click **Remove Roles**.
4. The **Remove Roles Wizard** is started, use this to remove the IIS role. Removing roles and services from the server can take a couple of minutes.
5. You may get prompted to restart your server. If so please do this.

### 8.5.2. Install IIS on the Web Server

If IIS is not installed on your Web Server, you need to install it. The procedure below explains how to install IIS 7 on Windows Server 2008 R2, or IIS 8 on Windows Server 2012.

**Note:** From WebCenter 18.1 installation, IIS can also be installed with a script provided in the Installation disk.

1. Open the Server Manager.
2. IIS 7: Click **Roles** in the left panel, then click **Add Roles** at right. IIS 8: Choose **Manage > Add Roles and Features** from the top menu.

This opens the **Add Roles Wizard**.

3. IIS 8: In the **Select installation type** screen, select **Role-based or feature-based installation**.
4. IIS 8: In the **Select destination server** screen, select the appropriate server (local is selected by default) and click **Next**.
5. In the **Select server roles** screen, select **Web Server (IIS)**.

If the wizard prompts you to add features required for the Web Server, do so.

6. IIS 8: In the **Select features** screen, you do not need to add any additional features. Click **Next**.
7. IIS 8: Click **Next** in the subsequent **Web Server Role (IIS)** screen as well.

8. In the **Select role services** screen:

- a) Enable **ASP**, **ISAPI Extensions** and **ISAPI Filters** in the **Application Development** section.

If the wizard prompts you to add role services required for ASP, do so.

- b) In **Health and Diagnostics**, enable **HTTP Logging**, **Logging Tools**, **Request Monitor** and **Tracing**.

- c) In **Management Tools**, enable **IIS Management Tools** and **IIS 6 Management Compatibility, IIS 6 Metabase Compatibility, IIS 6 Scripting Tools** and **IIS 6 WMI Compatibility**
  - d) In **Common HTTP features**, make sure **Default Document, Directory Browsing, HTTP Errors** and **Static Content** are enabled.
  - e) In **Security**, make sure **Request filtering** is enabled.
  - f) In **Performance** make sure to enable Dynamic and Static Content Compression.
- 9.** In the **Confirm installation selections** screen, check the settings and click **Install**.
- This installs the IIS 7 or 8 Role with the settings you have selected and the default settings.
- The **Installation Results** screen should show `Installation succeeded`.
- 10.** Click **Close** to exit the wizard and restart the server if prompted.

### 8.5.3. Extend the Upload Limitation

IIS 7 has a limitation on how much you can upload at once (30 MB). You can change it to 2GB by following these steps:

- 1.** Open **IIS Manager**.
  - 2.** Select the website for which you want enable large file uploads.
  - 3.** In the main window, double click **Request filtering**.
  - 4.** Once the window is opened you may see a list of tabs (file name extensions, rules, hidden segments...).
- Regardless of the tab you select, right-click in the main window and select **Edit Feature Settings**.
- 5.** Modify the **Maximum allowed content length (bytes)**: change the value to 2000000000 (a 2 and 9 zeros) to be able to upload files close to 2GB.

### 8.5.4. Disable 32 Bit Applications

**Note:** Only do this if you previously had WebCenter 10.x or 12.x installed on the same system. Previously, 32 Bit Applications needed to be enabled. Now however, this settings needs to be disabled.

- 1.** In IIS, go to **Application Pools** and select the **DefaultAppPool**.
- 2.** Click **Advanced Settings...**, then set the **Enable 32 Bit Applications** option to **False** and click **OK**.
- 3.** Click **Recycle...** at right.

### 8.5.5. Install the WebCenter Web Server

The Web Server components of WebCenter can be installed from a link on the WebCenter installation media.

- 1.** Log on to the Web Server as a member of the local Administrators group.
- 2.** Ensure that **Internet Information Services (IIS)** has already been loaded by verifying that the **Internet Information Services** applet is in **Administrative Tools** in the **Control Panel**.

**Note:** If it has not been loaded, you must load it through **Add/Remove Windows Components** in **Add/Remove Programs** in the **Control Panel**.

3. Insert the WebCenter media into the media drive, and click **Software Installation** on the menu that appears at left, then **Install WebCenter 20.0**.
4. The setup wizard opens with a **Welcome** screen. Click **Next**.
5. In the **License Agreement** screen, read the agreement, and if you agree to it, select **I accept the terms in the license agreement** and click **Next**.
6. In the **Custom Setup** screen:
  - a) Click the icon next to **WebServer**, and select **This feature, and all subfeatures, will be installed on local hard drive**.
  - b) Click the icon next to **Application Server** and select **This feature will not be available**.
  - c) If desired, click **Change** to change the installation folder.
  - d) Click **Next**.
7. In the **Option Selection** screen:
  - a) Enter the name of the **Application Server**.

This should be a different machine than the one currently running the installation.

**Note:**

You cannot configure WebCenter with IP addresses. If the web server is not able to find the application server via name resolution, you can map the IP address of the application server and the hostname of the application server in the C:\Windows\System32\drivers\etc\hosts file. For example: 10.31.140.69 myappserver.

- Read also: <https://wiki.esko.com/pages/viewpage.action?pageId=76730042>.
- [Configuring to use NAT translation](#).

- b) If you want to install WebCenter using an already-existing IIS website (rather than the **Default Web Site**), select it in the list.
  - c) Click **Next**.
8. Click **Install**.
9. The **Esko Station Information Service** may be installed if this is the first Esko software being loaded on the machine.
 

If it installs, click **Continue** when it is done, or wait 10 seconds for the process to continue automatically.
10. Click **Finish** when the installation completes.
11. Reboot the machine if prompted.

### Start the WebCenter Services

After installing WebCenter, you need to start its services using the **Services** applet in the **Windows Administrative Tools**.

### Start the WebCenter Services on the Application Server

1. Log on to the **Application Server** as a member of the local Administrators group.
2. Click **Start > Settings > Control Panel > Administrative Tools > Services**.
3. Select the **WebCenter JBOSS Application Server** and click **Action > Start**.
4. If not started yet, select the **WebCenter Application Monitor** service and click **Action > Start**.
5. Select the **WebCenter CAD-X Server** and click **Action > Start**.
6. If you want to change the services to start automatically when the machine reboots, do so now:
  - a) Right-click a WebCenter service and choose **Properties**.
  - b) In the **General** tab, choose **Automatic** in the **Startup type** list.
  - c) Click **OK**.
  - d) Repeat for each service that has to start automatically.
7. Close the **Services** tool and log off.

### Start the WebCenter Services on the Web Server

1. Log on to the **Web Server** as a member of the local Administrators group.
2. Click **Start > Settings > Control Panel > Administrative Tools > Services**.
3. Start the Tomcat service:
  - a) Right-click **Tomcat Web Server** and choose **Properties**.
  - b) In the **General** tab, choose **Automatic** in the **Startup type** list.

This makes the service start automatically when the machine reboots.
  - c) Click **OK** to close the **Properties** dialog.
  - d) Select the **Tomcat Web Server** and click **Action > Start**.
4. If not started yet, select the **WebCenter Application Monitor** service and click **Action > Start**.
5. Close the **Services** tool and log off.

### Easily Identify when WebCenter is Ready to Access

WebCenter services load a lot of data into memory during startup of its services. It is important to watch the CPU activity before accessing a WebCenter site.

You want both the Web Server and the Application Server to have a CPU activity of under 5% before accessing the site, otherwise all components may not have started and you may experience error messages. Another way is to check whether `wcr_jboss_srv.exe` threads exceed 160 and `wcr_tomcat_srv.exe` threads exceed 100.

To help watch the CPU activity easily, add the CPU performance monitor to the system tray of each WebCenter server. To do this (on both the Web Server and the Application Server):

1. Create a new shortcut in the **Start Menu > Programs > Startup** folder.
2. Browse to `Windows\system32\TASKMGR.EXE`.
3. Set the shortcut to Run "Minimized".

## 8.6. Install the On-Board Graphics Engine (OBGE) on the Application Server

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The Automation Engine On-Board Graphics Engine or OBGE is required for WebCenter systems to generate view data.

### 8.6.1. How to Perform the Automation Engine 20.1 System Readiness Check

Before you install the OBGE, a System Readiness Check is required. This checks whether the operating system is suited for installing and running this Esko product.

1. On the DVD, in the section **Software installation**, click the type of installation that fits your purpose (as explained in [Types of Installations](#)).
2. In the section **Installation**, under **Instructions**, click **Run the Automation Engine Readiness Check**.
3. At the end of the **Readiness Check**, read the resulting messages carefully.
4. If the **Readiness Check** resulted in any problem, correct it before proceeding.
5. Click **Exit**.

### 8.6.2. How to Install the Prerequisite Components

Depending on the products to be installed on this particular system, various components are required for installation. The installation wizard for these prerequisite components checks the licenses, lists the prerequisite components to install, requests confirmation for installation and then installs the required components.

The installation wizard installs the following components:

- **Microsoft Visual Studio Redistributables**
- **Database Engine for the Automation Engine** components (if you choose a **Standard** Automation Engine Installation)

Follow these steps:

1. On the DVD, in the section **installation**, click **Install the Prerequisites Components**.
2. Follow the instructions of the installation wizard.
3. When you choose a **Standard** installation, when asked to enter a password for the SQL Server, click **Use Default** to use the default **sa** password. Or you can enter a **Password**, confirm it and click **Use Password** to use a different password, for example because of "Strong Password" requirements.

You can know more about Installation of Automation Engine in this [KB article](#)

**Note:** During the pre-installation of the Database Engine for Automation Engine, the Microsoft .NET Framework 4.6.1 will be installed. You may get a warning saying that the system needs to be rebooted, followed by a fatal error "The SQL Server instance is not installed". If this happens, reboot your server and install the prerequisites again.

4. Depending on your activated licenses, the **Automation Engine Prerequisite Components Installation** process may ask you separately about the **CAD-X** component installation for both the Standard Edition component and the Enterprise Edition component. If the Automation Engine is installed on the Application server, Click **No**.
5. Click **Exit**.  
You will be redirected to the installation page to continue with the next step.

### 8.6.3. How to Install Automation Engine 20.1

1. After running the **System Readiness Check** and installing the **License Server Components**, when all prerequisites are fulfilled, you can start the installation.
2. Click the **Install Automation Engine 20.1** link on the installation page.  
The **Automation Engine 20.1 Software Installation** wizard will open up.
3. Follow the instructions of the installation wizard.
4. Read the **Software and Data license agreement** carefully and select **Yes, I accept the license agreement**.
5. When asked to select the products to install on this system, select **Automation Engine 20.1**.  
The group **Common Components** cannot be deselected and will be installed on all systems.
6. Select the **Destination Folder** for the chosen products or accept the defaults.
7. Follow the instructions of the installation wizard.
8. At the end of the installation, click **Finish**.

The pre-installation task checks the password complexity rules and domain policies. If the default password for the **BGSYSTEM** user does not fulfill the requirements, a pop-up dialog requests a password. During installation, only a **BGSYSTEM** user is created. This user will be used as Automation Engine **System Account** (you can choose to change it later using [the System Account page](#)). A clean installation ends with two empty local user groups: **BGUSERS** and **BGADMIN**. Add the **BGSYSTEM** user to the **BGADMIN** local user group.

**Note:** Learn more about [Users and Groups](#) in the separate chapter [Pre-Install IT Requirements](#).

After installation of Automation Engine, a shortcut named "**Automation Engine Client Apps**" is put on the desktop of the server computer.

Double-click this shortcut to open the Automation Engine **Client Apps** web page in your default browser.

This page describes the two types of Client Applications:

- Desktop client applications (Pilot or Shuttle): These need to be installed on each workstation from where you want to use Automation Engine.
- Browser based client applications: These run inside a browser and do not need to be installed. You may want to bookmark some specific pages.

## 9. Testing WebCenter

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On the Application Server and the Web Server, ensure IIS and the WebCenter services are started and configured to start automatically.

After starting/restarting the WebCenter services, always wait a few moments until the CPU processor activity on both servers become idle (<5%) before attempting to access the login page.

Testing each facet of WebCenter in the exact order below helps to easily and quickly identify points of failure, if any.

- IIS Connectivity – use IIS Manager to access the WebCenter\_Inst site
- IIS Security settings – can access the home page after logging in
- Database connection and Schema – can add a new record to the database
- FileStore connectivity – can write a file to the FileStore and then retrieve it
- View Data generation – can upload a graphic file and the OBGE does its job
- View and Annotate applet – can launch the applet successfully on a Graphic file
- View the status in the Trouble shooting tool for **View Server Deployment Status**

## 10. Configuring WebCenter

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### 10.1. Configure the OBGE

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The Pilot lets you configure the Automation Engine On-Board Graphics Engine (OBGE) for use with WebCenter.

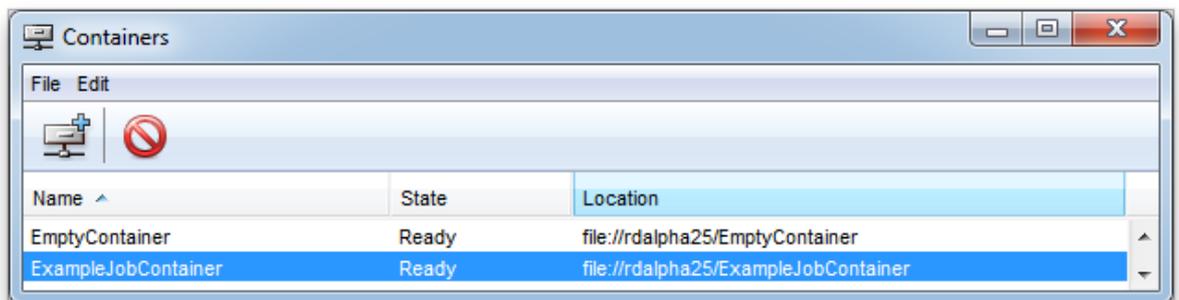
You must create a container and a hotfolder pointing to the WebCenter FileStore.

#### 10.1.1. Create a Container

1. Log on to the Application Server as a member of the local Administrators group.
2. Double-click the **Pilot** icon on the desktop.
3. In the **Logon Information** dialog, enter BGSYSTEM as the **User Name** and the default password. Type the name of the Application Server in **Server Name**. Click **OK**.

This opens the Pilot. User creation in Automation Engine is done by following steps provided [here](#).

4. Go to **Tools > Containers** to open the **Containers** window.



To more about Containers in Automation Engine, you can read [here](#).

5. In that window, go to **File > New** or click .

This opens the **Create Container Wizard**.

6. In the **Welcome** screen, click **Next**.
7. In the **Location of the Job Container** screen, select **Existing Shared Folder** and click **Next**.
8. In the **Location of the Network Folder** screen, type the name of the Application Server in the **Computer Name** field and click **Next**.
9. In the **Select the shared folder** screen, select the FileStore share and click **Next**.

10. Click **Finish** and close the **Containers** window.

### 10.1.2. Create a JDF Hot Folder (Access Point) for WebCenter

1. Choose **Tools > Access Points** from the **Pilot** main menu.
2. Click the **Create a new Access Point** button.
3. Choose type **Folder** and click **OK**.
4. Enter a **Name**.
5. In the **Folder Settings** tab, specify the **hotin** folder. This should look like: file://myserver/FileStore/JDFHotfolder/hotin.
6. In the **Monitoring** tab, set **Check every...minutes** to a low number preferably, the recommended setting is **1**.
7. In the **Automatic Actions** tab, fill in the **hotout** folder in the **Move File to** and **Output Folder** fields. This should look like: file://myserver/FileStore/JDFHotfolder/hotout. Make sure **Action** is set to **Process JDF**.
8. Click **OK**.

The Hot Folder/Access Point now appears in the Pilot and is ready for use.

## 10.2. Configuring the E-Mail Notifications

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Use the E-Mail Notifications page to configure the e-mail environment for the notifications framework. Only WebCenter Administrators can access this page.

### 10.2.1. Configure E-Mail Notification

While logged in to the WebCenter web interface as an administrator:

1. Go to **Admin > Configuration > E-Mail Environment Setup**.
2. Set up your e-mail environment:

Setting	Description
<b>E-Mail Service Protocol</b>	WebCenter only supports the SMTP protocol.
<b>E-Mail functionality enabled</b>	To enable/disable e-mail functionality.
<b>E-Mail debugging output in log</b>	To enable/disable e-mail debugging output in log files.
<b>E-Mail Service Host</b>	The address for the preferred mail server that will act as the server for dispatching WebCenter e-mail notifications (this server has to comply to the selected protocol type (see above)).

Setting	Description
<b>E-Mail Service Port Number</b>	The port number on which the defined mail server is listening for incoming e-mails.
<b>Outgoing E-Mail Notifications' "FROM" Address</b>	Supply a valid e-mail address. This will be used in the "From" e-mail header for every e-mail sent by WebCenter.
<b>Use TLSv1.2</b>	Select this option to use TLSv1.2 when you are trying to connect over SSL to the SMTP server. WebCenter uses the STARTTLS protocol command to indicate that, it can upgrade the insecure connection to TLSv1.2. To ensure that TLSv1.2 is used during the connection, the SMTP server should be configured to prevent insecure connections.  <b>Note:</b> This however does mean that if the smtp server doesn't support TLSv1.2, the insecure connection will be used instead.
<b>E-Mail Session Authentication</b>	Select this option if the mail server connection requires authentication with a user name and password.
<b>E-Mail Service Username</b>	Provide the mail account user name if authentication is required.
<b>E-Mail Service Password</b>	Provide the mail account password if authentication is required.  <b>Note:</b> This password is stored in an encrypted form.

3. Click **Send Testing E-mail**.

The **Test E-Mail Environment Settings** page appears.

Recipient\*

Subject\*

E-Mail Body\*

4. Type a **Recipient** address and click **Send E-mail**.

WebCenter attempts to send an e-mail to the recipient.

The E-Mail Configuration page appears, displaying a message depending on the result of the test:

- **Test E-Mail Sent:** The environment is set up correctly.
- **JMS System Error:** Communication with the JBoss' proprietary messaging framework failed.  
An administrator should check the JBoss server configuration and/or log files for possible causes.
- **Mail Server Connection Error:** The connection to the specified mail server did not succeed.  
Either the data the administrator supplied on the e-mail environment setup page was incorrect, or the mail server is currently down.  
  
An administrator should either check the e-mail environment settings for possible misspellings or contact the mail provider as to the status of the mail server.

**Note:** The settings you defined are saved in the database. For updates from older WebCenter installations, the email setup is first loaded from the old `emailconfig.xml` file and the settings are subsequently stored in the database.

## 10.3. Configure WebCenter for Use with ArtiosCAD Enterprise

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### 10.3.1. Configuring BLOBs

ArtiosCAD Enterprise supports the use of BLOBs in the database. BLOBs are Binary Large Objects - files stored as data in the database. Using BLOBs is transparent for the user.

When you configure ArtiosCAD Enterprise to use BLOBs, it also stores managed documents in the WebCenter FileStore as a cache to improve performance. If you delete a file from the FileStore, the next time you save it in ArtiosCAD Enterprise, it will be recreated in the FileStore from the BLOB.

**Note:**

You should decide if you want to use BLOBs when you install WebCenter. Switching to using BLOBs after having used ArtiosCAD Enterprise is not recommended or supported.

#### Editing `appconfig.xml` on the Application Server

To enable BLOBs, you must change a line in a configuration file on the Application Server. On the Application Server:

1. Log in as Administrator or as a user with administrative privileges.
2. Make a backup copy of `C:\Artios\WebCenter\config\appconfig.xml`. This file will be on the C: drive no matter where you installed WebCenter.
3. Open the file named in the previous step in a text editor such as Notepad.
4. Scroll down to `<store_files_in_blob value="false"/>` and change `false` to `true`.

5. Save the file and exit the text editor.

### Restarting Services

Once you have changed `appconfig.xml` on the Application Server, restart all the Application Server's WebCenter services to start using BLOBs in ArtiosCAD Enterprise.

1. On the Application Server, still logged in as Administrator or as a member of the local Administrators group, open the Services applet in the Administrative Tools group in Control Panel.
2. Restart the following services by clicking each one and then clicking the **Restart** link:
  - a) WebCenter JBOSS Application Server
  - b) WebCenter CAD-X
3. Close the Services applet and log off the Application server.

ArtiosCAD Enterprise is now configured to use BLOBs. Note that WebCenter will keep copies of managed documents in its FileStore to improve performance.

## 10.3.2. Step 2 - Optionally Uploading Boards

In case the boards were not installed yet, follow this procedure after logging in to WebCenter for the first time:

1. Log in on the Web server as a member of the local Administrators group.
2. Run the setup program with WebCenter DVD.
3. Click **Upload Boards**.
4. In the Log In To Web Browser dialog box, enter the address of the WebCenter server, an admin user's username, and that user's password. Click **OK**.
5. An Upload Boards progress bar will appear.
6. Click **Close** when the upload finishes.

## 10.3.3. Step 3 - Creating Shared Defaults for the First Time

The next step is to run the ArtiosCAD Defaults Manager installed when you installed ArtiosCAD Enterprise on the Application server. The first time you install ArtiosCAD Enterprise 16 or later, you have to create the Shared Defaults. You can choose to either create completely new Shared Defaults, or you can choose to migrate older Defaults that are merged with the defaults for the version you are installing. In the future, you will add a new version's Defaults to the existing Shared Defaults Project.

You may also use this utility to migrate location and user defaults from older versions of ArtiosCAD Enterprise to newer versions of ArtiosCAD Enterprise.

**Note:**

Even if you do not plan to use WebCenter in combination with ArtiosCAD Enterprise, it is still necessary to install the Defaults in order for WebCenter to be able to process CAD files properly. Therefore, it is highly recommended to install the Defaults, even if you do not plan to use CAD files initially.

**Note:**

The system you use for loading the Defaults must be able to keep the Defaults on it. You will have to follow the same process to load future Defaults and the new installation will reference the older version's Defaults as part of its installation. We recommend using the Application Server for this process.

**Note:**

**This procedure takes a significant amount of time. We recommend starting it and doing other things until it completes.**

1. Log in to the Application Server as a member of the local Administrators group.
2. Click **Start > All Programs > Esko > ArtiosCAD > Defaults Management** to start the Defaults Manager.
3. In the Login to Web Browser dialog box, enter your WebCenter server URL, admin username, admin password, and click **OK**.
4. Click **Create new shared defaults**.
5. A progress bar appears. This step will take a few minutes.
6. Click **Close** when the installation process is done.

### 10.3.4. Configuration in the WebCenter User Interface

**Note:** See the WebCenter Administration Guide for more details about the following steps.

1. Log on to WebCenter with the `admin` account (see [Log On to WebCenter and Change the Admin Password](#)).
2. Configure a **Company** and **Location** for the initial ArtiosCAD Enterprise users.
3. Create a custom group, if desired, for the initial ArtiosCAD Enterprise users.
4. Create the initial ArtiosCAD Enterprise users. While creating them:
  - a) Make sure they are at least **Project Managers with Limited Visibility of Companies and Groups**.
  - b) Assign them to the **Company** and **Location** you created.
  - c) Assign them to one or more groups.

Even if you did not create any custom group, you should assign them to the **USERS** group.

5. Invite them to the **System Defaults** Project (which is **Shared Defaults** in ArtiosCAD Enterprise).

**Tip:** You can do this either individually for every user or once through Group membership if you added all users to the same group (such as **USERS**).

Inviting them to the Project means that they will be able to use the Defaults.

In order for users to change Shared Defaults, they must have Full permissions on the Project and be members of the **ADMINS** group.

**Note:** All ArtiosCAD Enterprise users must be invited to the **System Defaults** Project. Users who are not invited to the project will receive a UFANEX error when they launch ArtiosCAD Enterprise.

## 10.4. Secure your WebCenter Site with SSL

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SSL is a **protocol for securing communication over the Internet**. It works by using a private key to encrypt data that is transferred over an SSL connection.

URLs using an SSL connection start with `https://` instead of `http://`.

To use SSL, you are required to obtain an **SSL certificate** and install it into Internet Information Services (IIS) on the Web Server.

**Note:** We strongly recommend you secure your WebCenter site with SSL, especially if you plan to use WebCenter over the internet (not only within a Local Area Network).

### 10.4.1. Secure the WebCenter Web Server with SSL

You will need to:

1. [Create a Certificate Signing Request \(CSR\)](#) on page 44.
2. [Request an SSL Certificate from a Certificate Authority](#) on page 45.
3. [Install the Intermediate SSL Certificate](#) on page 46.
4. [Install your Signed Certificate](#) on page 46.
5. [Export your Certificate if Necessary](#) on page 47.

You only need to do this if you haven't installed the certificates directly on your Web Server.

6. [Bind your Certificate to your WebCenter Site](#) on page 48.
7. [Redirect HTTP Traffic to HTTPS](#) on page 48.

#### Create a Certificate Signing Request (CSR)

To get an SSL certificate, you need to first create a Certificate Signing Request, that you will send to a Certificate Authority.

1. On the Web Server, click **Start**, then **Administrative Tools**, then **Internet Information Services (IIS) Manager**.
2. In the **Internet Information Services (IIS) Manager** dialog, click your server name (at left).
3. In the dialog's central pane, double-click the **Server Certificates** icon in the **Security** section.
4. In the **Actions** pane at right, click **Create Certificate Request...**

This opens the **Request Certificate** wizard.

5. In the **Distinguished Name Properties** screen, enter your information as follows:
  - **Common Name:** the name through which the certificate will be accessed (usually the fully-qualified domain name, for example `www.domain.com`).
  - **Organization:** the legally registered name of your organization/company.
  - **Organizational unit:** the name of your department within the organization.

- **City/locality:** the city in which your organization is located.
- **State/province:** the state in which your organization is located.
- **Country/region:** the two-lettered ISO-3166 country code of the country in which your organization is located. You can find a list of valid country codes on [http://www.ssl.com/csrs/country\\_codes](http://www.ssl.com/csrs/country_codes).

Click **Next**.

6. In the **Cryptographic Service Provider Properties** screen:

- leave **Cryptographic Service Provider** to **Microsoft RSA SChannel Cryptographic Provider**,
- in **Bit length**, select **2048** or higher.

Click **Next**.

7. In the **File Name** screen, enter a name for your Certificate Signing Request, and select a location in which to save it.

Click **Finish**.

## Request an SSL Certificate from a Certificate Authority

The customer is responsible for choosing the SSL provider (Certificate Authority), obtaining certificates, as well as following that company's specific instructions for installation and configuration.

Esko cannot obtain SSL certificates on behalf of its customers.

1. Send your [Certificate Signing Request file](#) to a public Certificate Authority.

### Note:

- If you do an Internet Search for "SSL certificate", you will find many providers with different pricing and options. We have good experiences with VeriSign, Network Solutions, Godaddy.com, and Thawte.
- The application process can take up to 30 days... Start the application process well in advance!
- If your company has a DNB (Dun & Bradstreet) number, the application process will be a lot easier and quicker if you can provide it.
- Your certificate will be linked to your website (for example `webcenter.domain.com`). Changing your website name will require a new certificate.

2. The Certificate Authority will provide you with:

- an intermediate certificate, verified by the root certificate installed by default on your Web Server (where you created the Certificate Signing Request),

**Note:** You may need to download this from a web link.

- your server certificate, verified by that intermediate certificate (signed by the Certificate Authority).

Make sure you have both certificates before going further! You will need to install both of them on your Web Server.

3. Copy those certificates to your Web Server.

### Install the Intermediate SSL Certificate

You need to install the intermediate certificate before you [install your signed certificate](#).

1. On your Web Server, click **Start**, then **Run...**
2. Type `mmc` and press **Enter**.
3. In the Microsoft Management Console (**Console1**) window that opens, go to **File > Add/Remove Snap-in...**
4. In the **Add or Remove Snap-ins** dialog, select **Certificates**, and click **Add**.
5. In the **Certificates snap-in** dialog, select **Computer Account**, and click **Next**.
6. In the **Select Computer** screen, select **Local Computer**, then click **Finish**.
7. Click **OK** in the **Add or Remove Snap-ins** dialog.
8. In the **Console1** window:
  - a) expand the **Certificates (Local Computer)** folder,
  - b) right-click **Intermediate Certification Authorities**, and go to **All Tasks > Import...**
9. In the **Certificate Import Wizard** dialog:
  - a) click **Next** to get to the **File to Import** screen,
  - b) browse to the location containing your intermediate certificate file,
  - c) in the **Open** dialog, change the file extension filter to **PKCS #7 Certificates (\*.spc;\*.p7b)**,
  - d) select your `*_iis_intermediates.p7b` file, and click **Open**.

**Note:** Only install your intermediate certificate, not your signed certificate in this area! Installing your signed certificate here would remove your intermediate certificate from the list, and you would need to reinstall it.
- e) Click **Next**.
10. In the **Certificate Store** screen:
  - a) select **Place all certificates in the following store**,
  - b) click **Browse**, select **Intermediate Certification Authorities** in the **Select Certificate Store** pop-up, and click **OK**,
  - c) click **Next**.
11. Click:
  - a) **Finish** in the **Certificate Import Wizard** dialog,
  - b) **OK** in the **Certificate Import Wizard** pop-up stating that the import was successful.
12. Close the **Console1** window, then click **No** in the pop-up asking to save the console settings.

### Install your Signed Certificate

Once your [intermediate certificate is installed](#), install your signed certificate:

1. On the Web Server, extract your `*.cer` certificate file from the zip file you got from the Certificate Authority.
2. Click **Start**, then **Administrative Tools**, then **Internet Information Services (IIS) Manager**.

3. In the **Internet Information Services (IIS) Manager** dialog, click your server name (at left).
4. In the dialog's central pane, double-click the **Server Certificates** icon in the **Security** section.
5. In the **Actions** pane at right, click **Complete Certificate Request...**

This opens the **Complete Certificate Request** wizard.

6. In the **Specify Certificate Authority Response** screen:
  - a) browse to your \*.cer certificate file,
  - b) enter a **Friendly name** for your certificate.

This will be used by the server administrator to easily distinguish the certificate.

- c) Click **OK**.

Your certificate is now installed. If you cannot see it yet in the **Server Certificates** list of the **Internet Information Services (IIS) Manager** dialog, press **F5** to refresh.

### Export your Certificate if Necessary

We recommend you create the [Certificate Signing Request](#) and install the certificates directly on your WebCenter Web Server.

However, if you do this on another server, you can export the signed certificate then import it on your Web Server.

1. If you haven't done so already, [install the intermediate certificate on your Web Server](#).
2. Export your signed certificate from the server it is installed on:
  - a) In **Internet Information Services (IIS) Manager**, select your certificate in the **Server Certificates** list and click **Export...** in the **Actions** pane at right.
  - b) In the **Export Certificate** dialog that opens:
    1. Type a file name in **Export to**, or click the browse button to navigate to a file in which to store the certificate for exporting.
    2. Type a **Password** if you want to associate a password with the exported certificate.
    3. Retype the password in **Confirm password** and click **OK**.

This exports your certificate to a .pfx file.

3. Import your signed certificate on your Web Server:
  - a) Click **Start**, then **Administrative Tools**, then **Internet Information Services (IIS) Manager**.
  - b) In the **Internet Information Services (IIS) Manager** dialog, click your server name (at left).
  - c) In the dialog's central pane, double-click the **Server Certificates** icon in the **Security** section.
  - d) In the **Actions** pane at right, click **Import...**
  - e) In the **Import Certificate** dialog that opens:
    1. browse to your **Certificate file (.pfx)**,
    2. enter the **Password** associated with your certificate if there is one,
    3. make sure that **Allow this certificate to be exported** is selected.

**Note:** This is important, as due to a bug in IIS, the [site binding](#) will not work if the certificate is not exportable.

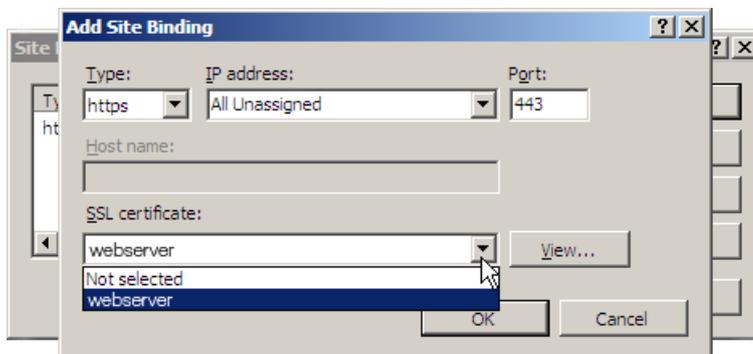
4. Click **OK**.

Your certificate is now installed on your Web Server. If you cannot see it yet in the **Server Certificates** list of the **Internet Information Services (IIS) Manager** dialog, press **F5** to refresh.

### Bind your Certificate to your WebCenter Site

Once you have installed your certificate on your Web Server, you need to bind it to your WebCenter site, so that the certificate will be used to authenticate your WebCenter site when users browse to it.

1. Still in the **Internet Information Services (IIS) Manager**, right-click the **Default Web Site** node in the **Connections** pane, (or the node of the IIS website you have deployed your Web Server on if it's not the default website) and select **Edit Bindings...**
2. In the **Site Bindings** dialog that opens, click **Add**.
3. In the **Add Site Binding** pop-up:
  - a) Choose **https** as **Type**.
  - b) Leave the default https **Port (443)**.
  - c) In the **SSL Certificate** list, select your Web Server.
  - d) Click **OK** and then **OK** again.



### Redirect HTTP Traffic to HTTPS

To ensure security, end users should only use `https://` to access your WebCenter site. If someone accidentally uses `http://` instead, they will not be using a secure connection.

To avoid this, you can make sure `http://` traffic to your WebCenter site is automatically redirected to `https://`. This will be transparent for the users (they will not get an error page but will simply be able to access your site through `https://`).

For this, you need to download a (free) extension for IIS.

1. On your Web Server, download and install the **URL Rewrite** extension for IIS.  
Go to <http://www.iis.net/downloads/microsoft/url-rewrite>, click the **Install this extension** button and follow the steps on screen.
2. In the **Internet Information Services (IIS) Manager**, make sure SSL is not required so users don't get an error when connecting to your site using `http://`:
  - a) Select the **Default Web Site** node in the **Connections** pane, (or the node of the IIS website you have deployed your Web Server on if it's not the default website).
  - b) Double-click **SSL Settings** in the center pane.
  - c) Under **SSL Settings**, make sure that **Require SSL** is not selected.

3. Click **Default Web Site** or the node of your IIS website again, then double-click **URL Rewrite** in the center pane.
4. Create a blank inbound rule:
  - a) Click **Add Rule(s)...** in the **Actions** pane at right.
  - b) In the **Add Rule(s)** pop-up, click **Blank rule** under **Inbound rules**, then click **OK**.

The center pane now shows the **Edit Inbound Rule** form.

5. Edit the rule as follows to perform the automatic redirection:
  - a) Enter a **Name** for the rule, for example `HTTP to HTTPS redirect`.
  - b) Under **Match URL**, fill in the settings as follows:

<b>Requested URL</b>	Matches the Pattern
<b>Using</b>	Regular Expressions
<b>Pattern</b>	(.*)
<b>Ignore case</b>	on

- c) Under **Conditions**, select **Match All** in **Logical grouping**.
- d) Add the first condition:
  1. Click the **Add...** button to open the **Add Condition** pop-up.
  2. Fill in the settings as follows:

<b>Condition input</b>	{HTTPS}
<b>Check if input string</b>	Matches the Pattern
<b>Pattern</b>	off
<b>Ignore case</b>	on

This ignores addresses starting with `https://` (they don't need to be redirected).

3. Click **OK**.
- e) Add the second condition:
  1. Click the **Add...** button to open the **Add Condition** pop-up.
  2. Fill in the settings as follows:

<b>Condition input</b>	{SERVER_ADDR}
<b>Check if input string</b>	Does Not Match the Pattern
<b>Pattern</b>	:::1
<b>Ignore case</b>	on

This ignores addresses using `localhost` through IPV6 (:::1), as forcing `https://` for those would give a certificate error as the one below (because the certificate is linked to your site name and not the server's IPV6 address).



There is a problem with this website's security certificate.

---

The security certificate presented by this website was issued for a different website's address.

Security certificate problems may indicate an attempt to fool you or intercept any data you send to the server.

**We recommend that you close this webpage and do not continue to this website.**

-  [Click here to close this webpage.](#)
-  [Continue to this website \(not recommended\).](#)
-  [More information](#)

3. Click **OK**.
- f) Add the third condition:
1. Click the **Add...** button to open the **Add Condition** pop-up.
  2. Fill in the settings as follows:

<b>Condition input</b>	{SERVER_ADDR}
<b>Check if input string</b>	Does Not Match the Pattern
<b>Pattern</b>	127.0.0.1
<b>Ignore case</b>	on

This ignores addresses using localhost through IPV4 (127.0.0.1), as forcing https:// for those would give a certificate error (because the certificate is linked to your site name and not the server's IPV4 address).

3. Click **OK**.
- g) Under **Action**, fill in the settings as follows:

<b>Action type</b>	Redirect
<b>Redirect URL</b>	<p>https://website-name.com/{R:1}</p> <p>where website-name.com is the name of your WebCenter site, to which you have linked your certificate</p>
<b>Append query string</b>	on
<b>Redirect type</b>	Found (302)

Your rule should look like this:

### Edit Inbound Rule

Name: HTTP to HTTPS redirect

**Match URL**

Requested URL:  Using:

Pattern:  [Test pattern...](#)

Ignore case

**Conditions**

Logical grouping:

Input	Type	Pattern	
{HTTPS}	Matches the Pattern	off	<a href="#">Add...</a>
{SERVER_ADDR}	Does Not Match the Pattern	::1	<a href="#">Edit...</a>
{SERVER_ADDR}	Does Not Match the Pattern	127.0.0.1	<a href="#">Remove</a>
			<a href="#">Move Up</a>
			<a href="#">Move Down</a>

Track capture groups across conditions

**Server Variables**

**Action**

Action type:

Action Properties

Redirect URL:

Append query string

Redirect type:

h) Click **Apply** in the **Actions** pane at right.

You should now see your rule in the **URL Rewrite** list in the center pane.

6. Browse to your WebCenter site using `http://` and check that it is redirected to a `https://` connection.

### 10.4.2. Install SSL Certificates on the Workflow Production Server

If...

- you are planning to integrate your Automation Engine server with WebCenter,
- your WebCenter site is secure (it demands `https://` connections),
- your Automation Engine server and your WebCenter are not located within the same Local Area Network,

... you need to make sure your Automation Engine server can communicate with your WebCenter server over `https://`.

**Important:**

If you have installed your certificates properly on the Web Server (the *intermediate certificate* and the *signed server certificate*), **this should work without you having to do anything.**

If you haven't, or you are still experiencing connection problems, you should import the WebCenter certificates into the Automation Engine keystore.

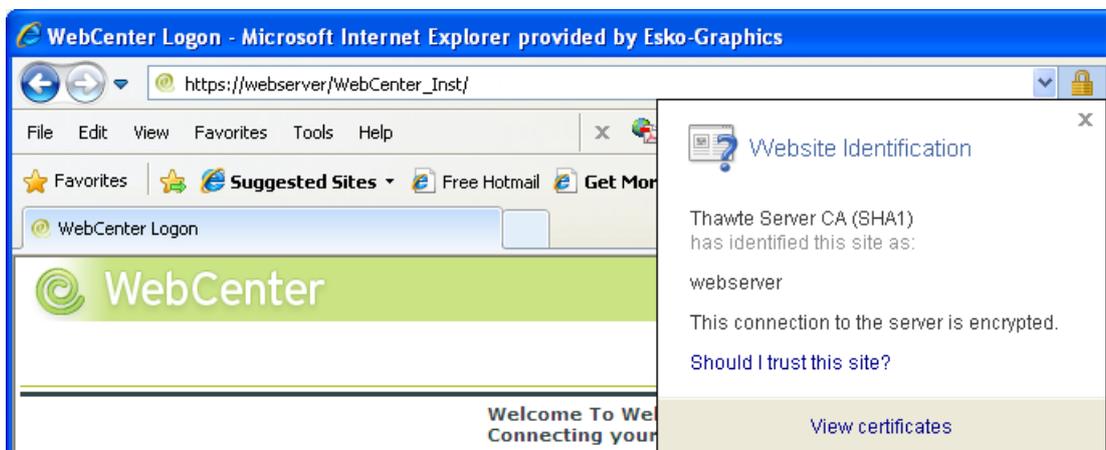
This can also apply when WebCenter and Automation Engine are in the same LAN, if `https://` communication is also enforced inside the LAN. Check with your network administrator if this is the case.

### Export the Certificates from the WebCenter Site

1. Log on to the Automation Engine server as a local administrator.
2. Open a web browser and navigate to the secured WebCenter site.
3. Examine the WebCenter site's certificates.

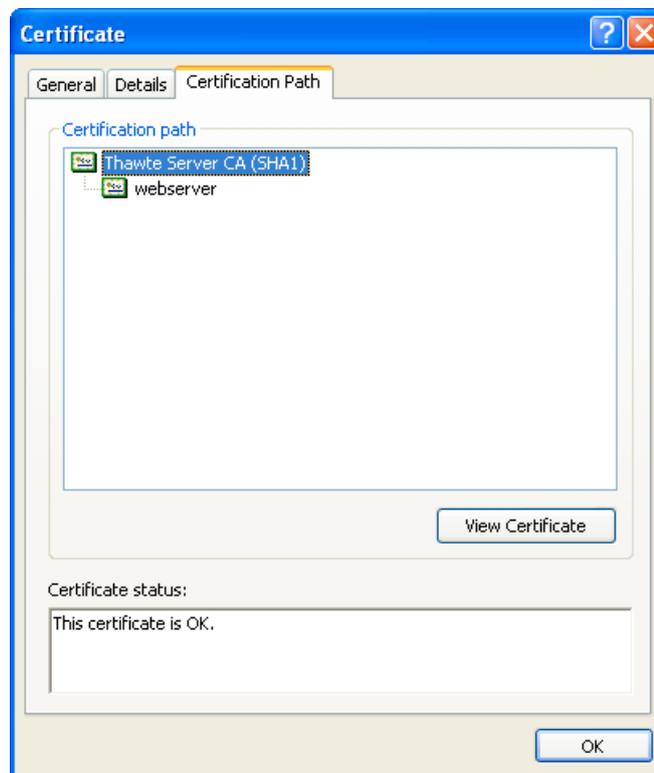
How you do this depends on the web browser you use; for example in Internet Explorer:

- a) Click the lock icon at the end of the address bar and click **View certificates** in the pop-up.

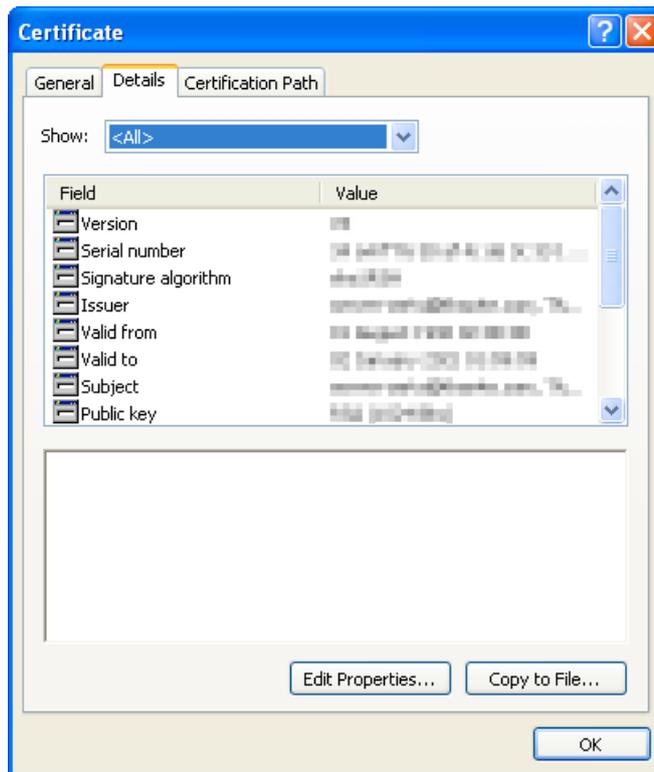


- b) In the **Certificate** dialog, click the **Certification Path** tab.

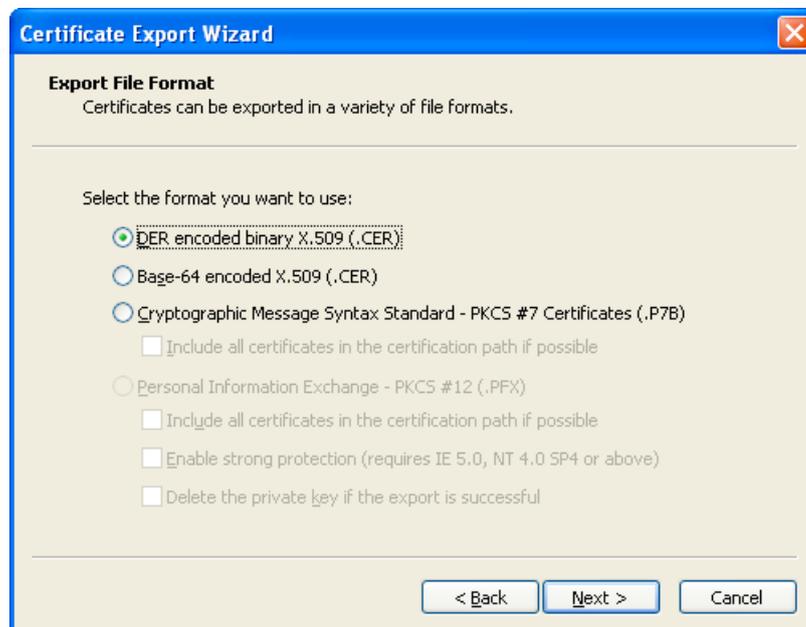
This tab displays the certificate hierarchy. Each top-level entry in the hierarchy represents a certificate.



4. Export all the certificates (top-level entries) in the hierarchy:
  - a) Highlight the first certificate in the hierarchy (for example, Thawte Server CA (SHA1)).
  - b) Click **View Certificate**.
  - c) Click the **Details** tab.



- d) Click **Copy to File** to begin the **Export Wizard**. Click **Next**.
- e) Select **DER encoded binary... (.CER)** and click **Next**.



- f) Click **Browse** or type in a valid path and name the certificate (\*.cer). We recommend using a short path and name (such as c:\temp\vali.cer). Click **Next**.
- g) Click **Finish**, then **OK** and once more **OK**.

- h) Repeat these steps until you have exported all the certificates. Close the web browser when you are finished.

### Import the Certificates into the Workflow Server Keystore

While still logged on to the Automation Engine server as a local administrator, import the certificate files into the Automation Engine keystore:

1. Open a DOS command prompt.
2. Change to the Esko Automation Engine software directory which contains the keytool utility:  
`\bg_prog_fastserver_vxxx\jre\bin`  
 For Suite 14, this will typically be `c:\esko\bg_prog_fastserver_v140\jre\bin`
3. Run the import utility for each certificate downloaded, in the proper order: `keytool -import -file <path>\*.cer -alias <aliasname> -keystore <keystore_path>`.  
 Your `<keystore_path>` is the path to `bg_prog_fastserver_vxxx\jre\lib\security\cacerts`. For example: `c:\esko\bg_prog_fastserver_v140\jre\lib\security\cacerts`.  
 You will be prompted for a password. The password is: `changeit` (case sensitive).
4. You might be asked to trust the certificate. Enter `Y` for Yes.  
 It is also possible that the tool tells you that this certificate is already installed. If so, that's ok, go on with the next certificate.  
 You should get a successful message like `Certificate was added to keystore`.
5. Repeat for each certificate to import in the hierarchy.
6. Reboot the Automation Engine computer to ensure that the changes take effect.

#### Example

You are running Automation Engine 14 and the Automation Engine server software is installed on E:\Esko.

You have downloaded two certificates from the WebCenter site in the folder `c:\temp`: `valicert.cer` and `starfield.cer`.

`valicert.cer` was first in the hierarchy, so you would import this first, then repeat for `starfield.cer`.

You would proceed as follows:

1. Using a command prompt, go to `e:\esko\bg_prog_fastserver_v140\jre\bin`.
2. Type `Keytool -import -file c:\temp\valicert.cer -alias valicert -keystore e:\esko\bg_prog_fastserver_v140\jre\lib\security\cacerts`
3. If asked for the password, type `changeit`.
4. If asked to trust the certificate, type `Y`.
5. Repeat the same command for the next certificate, `startfield.cer`.
6. Reboot the Automation Engine computer to ensure that the changes take effect.

### Import the Certificates into the Workflow Client Keystore

With a secured WebCenter site (requiring `https://`), you cannot check the connection between Automation Engine and WebCenter with the **Check Connection** button in **Configure**.

To be able to do this, you need to install the Web Server certificates in the Automation Engine **client** keystore too (even if the client is running on the same machine as the Automation Engine server).

**Tip:**

You should also do this if publishing fails because Automation Engine doesn't have the appropriate certificates. Typically, this gives an error message like the one below:

```
javax.net.ssl.SSLHandshakeException: sun.security.validator.ValidatorException: PKIX path
building failed: sun.security.provider.certpath.SunCertPathBuilderException: unable to
find valid certification path to requested target
```

1. While logged on to the Automation Engine client machine as a local administrator, open a DOS command prompt.
2. Change to the Esko Automation Engine software directory which contains the keytool utility:  
`\bg_prog_fastserverclnt_vxxx\jre\bin`

For Suite 12, this will typically be `c:\esko\bg_prog_fastserverclnt_v120\jre\bin`

**Note:** For the client, make sure to use `bg_prog_fastserverclnt` and not `bg_prog_fastserver` as for the server!

3. Run the import utility for each certificate downloaded, in the proper order: `keytool -import -file <path>\*.cer -alias <aliasname> -keystore <keystore_path>`.  
 Your `<keystore_path>` is the path to `bg_prog_fastserverclnt_vxxx\jre\lib\security\cacerts`. For example: `c:\esko\bg_prog_fastserverclnt_v120\jre\lib\security\cacerts`.  
 You will be prompted for a password. The password is: `changeit` (case sensitive).
4. You might be asked to trust the certificate. Enter `Y` for Yes.  
 It is also possible that the tool tells you that this certificate is already installed. If so, that's ok, go on with the next certificate.  
 You should get a successful message like `Certificate was added to keystore`.
5. Repeat for each certificate to import in the hierarchy.
6. Reboot the Automation Engine computer to ensure that the changes take effect.

## 10.5. Install Certificates for LDAPS on the Application Server

To connect your WebCenter installation to a secure LDAP server (LDAPS), you have to install a certificate obtained from that LDAPS server.

1. Open a command prompt on the WebCenter Application Server.

2. Change directory to the location of `\WebCenter\ApplicationServer\LDAP\CertInstall.bat`.
3. Issue the following command: `CertInstall servername:port`, where `servername` is the name or IP of the LDAP server and `port` is the port used for secure connection (typically 636).

```

C:\WINDOWS\system32\cmd.exe

C:\Esko\WebCenter\ApplicationServer\LDAP>dir
Volume in drive C is System
Volume Serial Number is BC5B-7E1F

Directory of C:\Esko\WebCenter\ApplicationServer\LDAP

03/11/2009  08:41 AM    <DIR>          .
03/11/2009  08:41 AM    <DIR>          ..
03/10/2009  12:47 PM                656 CertInstall.bat
03/05/2009  07:59 PM             1,086 InstallCert$SavingTrustManager.class
03/05/2009  07:59 PM             5,507 InstallCert.class
03/03/2009  12:20 PM             5,042 InstallCert.java
                4 File(s)      12,291 bytes
                2 Dir(s)  5,242,126,336 bytes free

C:\Esko\WebCenter\ApplicationServer\LDAP>CertInstall esko-graphics.com:636
  
```

4. To make changes active ensure that you restart JBoss, if JBoss was running.  
If successful, a list of certificates sent by the server is displayed (ignore any additional messages).

```

C:\WINDOWS\system32\cmd.exe - CertInstall webcenter2.esko.com:443

Server sent 1 certificate(s):

 1 Subject  CN=webcenter2.esko.com
   Issuer   CN=webcenter2.esko.com
   sha1     25 59 4e e9 9d 33 3e 15 ea 03 8f 6e 03 6a fa c9 29 eb 79 70
   md5      5a 0f 6a 08 c1 0d 61 3d bc e2 9f 73 58 45 39 f6

Enter certificate to add to trusted keystore or 'q' to quit: [1]
  
```

5. To install a given certificate, enter its number in the list and press `Enter`.  
We suggest that you install all certificates. Only one certificate can be installed each time you run `CertInstall` so it can be necessary to run it multiple times.

```

C:\WINDOWS\system32\cmd.exe
[2]: ObjectId: 2.5.29.37 Criticality=false
ExtendedKeyUsages [
  serverAuth
]
]
]
Algorithm: [SHA1withRSA]
Signature:
0000: 5C BF 42 0C 3E D2 E9 CE 22 70 2E BF FD 28 6A 2B \.B.>...'p...<j+
0010: 93 C4 21 B1 BF BC 4C 69 25 D3 F1 F2 45 45 06 37 ..!...Li%...EE.7
0020: 10 D3 A0 A9 03 F3 77 0D BF 5A AD 0D DC 6A 6A F8 .....w..Z...jj.
0030: 8B 6A 55 0A 43 42 60 81 11 68 77 10 00 A2 F7 89 .jU.CB'..hw....
0040: 0F 98 58 4C A0 12 69 DE 88 26 B5 EF C5 58 C4 87 ..xL..i.&...x..
0050: CD 2B 7B 13 9D 4D 2B 05 A2 BB 81 BD F5 2B A3 B5 .+.M+.....+.
0060: D2 98 02 EA F7 14 BA F4 79 78 AE D4 63 73 75 06 .....yx..csu.
0070: 55 2E 46 C3 A2 0A 97 4A E9 6A 51 53 E2 D3 EE 72 U.F....J.jQS...r
]
]
Added certificate to keystore 'jssecacerts' using alias 'webcenter2.esko.com-1'
Copying the keystore file jssecacerts to C:\Program Files\Java\jdk1.5.0_15\jre\l
ib\security
1 file(s) copied.
C:\Esko\WebCenter\ApplicationServer\LDAP>
    
```

**Note:**

**Troubleshooting the certificate installation**

The certificates should be properly installed. If not, try these troubleshooting tips:

- **Server or port name is not correct**

If the supplied parameters are wrong, the result can look something like the following:

```

C:\WINDOWS\system32\cmd.exe
Installing Certificate for SSL connection...
Loading KeyStore C:\Program Files\Java\jre1.6.0_07\lib\security\cacerts...
Opening connection to esko-graphics.com:636...
Starting SSL handshake...

javax.net.ssl.SSLHandshakeException: Remote host closed connection during handsh
ake
    at com.sun.net.ssl.internal.ssl.SSLSocketImpl.readRecord(Unknown Source)
    at com.sun.net.ssl.internal.ssl.SSLSocketImpl.performInitialHandshake(Un
known Source)
    at com.sun.net.ssl.internal.ssl.SSLSocketImpl.startHandshake(Unknown Sou
rce)
    at com.sun.net.ssl.internal.ssl.SSLSocketImpl.startHandshake(Unknown Sou
rce)
    at InstallCert.main(InstallCert.java:56)
Caused by: java.io.EOFException: SSL peer shut down incorrectly
    at com.sun.net.ssl.internal.ssl.InputRecord.read(Unknown Source)
    ... 5 more
Could not obtain server certificate chain
Copying the keystore file jssecacerts to C:\Program Files\Java\jdk1.5.0_15\jre\l
ib\security
The system cannot find the file specified.
C:\Esko\WebCenter\ApplicationServer\LDAP>
    
```

In this case, contact your IT system administrator and verify the parameters supplied.

## 10.6. Integrate WebCenter with a Workflow Production Server

You can configure WebCenter to integrate with your existing Automation Engine production server. In this documentation, we assume that you have both these applications installed and running properly.

### 10.6.1. Understanding WebCenter Integration

WebCenter can run without Automation Engine, but its full potential is realized when integrating both systems.

Integrating WebCenter with an Automation Engine production server allows you to upload production files to WebCenter for approval and advanced project management.

To make this collaboration between the systems possible, you must:

- Add the WebCenter site information in the Automation Engine **Configure** window.
- Configure the Job Web Page URLs in the Automation Engine **Configure** window.
- Set up the **WebCenter View** information for the Automation Engine users.
- Set up the **Publish on WebCenter** ticket.

#### Add the WebCenter Site Information

1. Launch the Automation Engine Pilot and connect to the production server with an administrator account.
2. Choose **Tools > Configure**.
3. In the **Configure** window, select **WebCenter Sites** in the left pane.
4. Click the **+** icon.

The screenshot shows a configuration window titled 'Delivery'. It contains a 'Website' text box with the value 'http://WCRSERVER/WebCenter\_Inst' and an 'Open...' button to its right. Below this is a checked checkbox with the text 'WebCenter and Automation Engine are in the same LAN'. Underneath is a section for 'WebCenter's Approval Client' with 'Name' and 'Password' text boxes and a small circular icon to the right of the 'Name' box. At the bottom center is a 'Check Connection' button.

5. In the **Website** field of the **Delivery** area, enter the URL of the WebCenter site (for example: `http://wcrserver/WebCenter_Inst`).

**Note:** If your site uses secure HTTP, make sure to enter an HTTPS address.

6. Click **Open...** to test the connection. The login page for WebCenter should appear. If it doesn't, check your settings.
7. If the Automation Engine server and the WebCenter Application Server are not on the same LAN, deselect **WebCenter and Automation Engine are in the same LAN**.

If using Automation Engine 18.0.1, 18.0, or 16.1.1 to connect to WebCenter for outside-LAN approval feedback, you need to install a hotfix on Automation Engine for this functionality to still work after updating to WebCenter 18.1.

The hotfixes can be downloaded from [mysoftware.esko.com](http://mysoftware.esko.com):

- Automation Engine 16.1.1: HF\_201801047\_20181212\_AE-WCR\_18\_1
- Automation Engine 18.0: HF\_201806059\_20181212\_AE-WCR\_18\_1
- Automation Engine 18.0.1: HF\_201811018\_20181212\_AE-WCR\_18\_1

Older versions of Automation Engine are not officially supported.

The **User Name** and **Password** fields then become available. This is where the Automation Engine Approval Client configuration in WebCenter is used.

Create a user name and password combination in WebCenter, then enter that same (case-sensitive) user name and password in the appropriate fields in Automation Engine **Configure**.

Click **Check Connection** to test the connection.

**Important:** You must be using the Pilot on the Automation Engine server itself to run this check.

A dialog box appears, proving that the connection works and displaying the WebCenter version number.

8. If the **Connect to JDF Processor** area is visible, leave **JMF** selected in it.
9. Click **Check** to test the connection.

An **Info** dialog appears, reporting that the connection is OK. Click **OK**.

If this dialog does not appear, check your settings.

10. On the left of the **Configure** window, scroll down and select the new **WebCenter1** entry under **WebCenter Sites**.
11. Click **File > Rename** and enter a descriptive name for your WebCenter site.
12. Click **File > Save** to save the settings.

### Configure the Job Web Page URLs

The Job Web Page enables you to go to your WebCenter project from within your Automation Engine Job.

1. Launch the Automation Engine Pilot and connect to the production server with an administrator account.
2. Choose **Tools > Configure**.
3. In the **Configure** window, select **Jobs > Job Web Page** in the left pane.
4. In the **Address** field, enter the URL of the WebCenter site (for example: `http://pacwebserver/WebCenter`).
5. Still in the **Address** field, append this text to the end of the URL: `/projdetails.jsp?projectName=`



**Attention:** This is case-sensitive; enter it exactly as written. Do not include a space or period at the end.

6. Click **+[ ] InsertSmartNames**.
7. In the **SmartNames** column, scroll down and click **JobName**.
8. Click **Insert** to append it to the URL in the **Address** field.
9. Click **Close** to return to the **Configure** window.

The result should resemble `http://pacwebserver/WebCenter/projdetails.jsp?projectName=[JobName]` with `[JobName]` in green.

10. Click **File > Save** to save the settings.

You can now right-click your Job folder in the Automation Engine Pilot and select **Go to Job Web Page**; this opens the WebCenter project associated with your Job in a browser.

### Set Up the Publish on WebCenter Ticket

The **Publish on WebCenter** ticket in Automation Engine creates output and uploads the resulting files to WebCenter.

For more details, please see the Automation Engine documentation.

1. Launch the Automation Engine Pilot and connect to the production server with an administrator account.
2. Click the **Tickets** view.
3. Locate the **Publish on WebCenter** default ticket, right-click it and click **Duplicate...**
4. In the **Save As** pop-up that opens, replace the word `Default` in the **Save As** field with a meaningful name (for example the name of your WebCenter site).
5. In the **Scope** area, select the **Global** option.  
If you have no blue job folders containing files, you are not prompted to select the scope.
6. Click **Save**. The new ticket should appear in the list.
7. Double-click your new **Publish on WebCenter** ticket to change its settings.
8. On the **Destination** tab, define where you want to publish your file:
  - a) In the **Site** list, select your desired WebCenter site.
  - b) In the **Project** field, enter the **JobName** SmartName so that the files are published to the WebCenter project corresponding to your Automation Engine job.

**Note:**

- The project does not have to exist in WebCenter at upload time. If the project does not exist, it will be created. In this case, the person that does the upload from Automation Engine needs to be **Project Manager** in WebCenter! Otherwise the upload will fail.
  - If your main goal is not to upload files but to create WebCenter Projects through Automation Engine, we recommend you use the **Create or Modify WebCenter Project** ticket instead (see the Automation Engine documentation for more information).
- c) Leave the **Folder** and **Project Template** fields blank unless you know the exact names of the folder and project template you want to use for every new Project.

In this case, enter them as appropriate; all new WebCenter Projects created with this ticket will use these values.

**Note:**

- The **Project Template** field refers to a template in WebCenter, not Automation Engine.
- You can only use templates that are visible by the WebCenter user performing the upload (see sub-step f).

- d) Enter a **Document Name** if you want your published document to have a name different from the input file name.

**Note:** If the document already exists, the task will create a new version of that document. If it exists but is in a different folder, the task will fail.

- e) Enter a **Document Description** if desired; this description will be available in WebCenter as a **Version Comment**.
- f) Leave the **User Name** and **Password** fields blank unless there is a specific (and valid!) WebCenter user who will own each document revision published using this ticket; in that case, enter the appropriate information.

If you leave these fields blank, anyone using the ticket will have to supply a valid user name and password each time it is used.

**9.** On the **Publish** tab:

- a) Leave **Prepare for viewing and annotating** and **Make available for download** selected.
- b) In the **Allow Downloading in WebCenter** area, choose the kind of files to upload to WebCenter.
- **Input files** are the original files themselves.
  - **PDF files for proofing** are proxy files created by using the selected ticket. If you choose PDF files for proofing, leave the default **Create SoftProof for WebCenter** ticket selected, or choose another ticket if desired. Proxy files uploaded in this manner will have **Download PDF for printing** as an option in WebCenter.

The combination of preparing for viewing but not making available for download is intended for Graphics files that only need Approval.

**10.** On the **Approval** tab, deselect **Start the Approval Cycle**.

**11.** Click **Save**. Then click **Yes** to confirm overwriting the ticket.

## 10.7. Expose WebCenter to the Internet

---

Exposing WebCenter to the Internet is the responsibility of your local IT department. Esko cannot do this for you.

### 10.7.1. Register a Domain Name

Register and pay for a domain name, such as `www.esko.com`, to allow internet users to navigate to your WebCenter site.

Once you have registered the domain name, your company is the only one authorized to use that specific domain name for a certain period.

- Contact a proper authority (VeriSign, GoDaddy, etc) and purchase a domain name.

## 10.7.2. Contact Your ISP to Set Up an A Record

The purpose of an **A record** is to associate your domain name to your public firewall/router, so web traffic (HTTP and HTTPS) going to the domain name is routed to that public firewall/router.

Think of this as telling the Postman how to get to your mailbox.

**Note:** It takes several days for the A record information to propagate around the world.

1. Identify the public IP Address of your router/firewall.  
This is the hardware appliance your Internet connection is plugged into (i.e. T1, DSL).  
For example: My T1 is plugged into a firewall with 66.55.44.33 as public IP address.
2. Contact your ISP and ask them to add an 'A' Record (Address record) to the global DNS (Domain Name Servers), associating your domain name and your router/firewall public IP address.
3. Verify that you can ping your domain name from computers inside and outside your LAN.
4. Ensure the reply you get contains the correct IP address for your public firewall/router.

### Example

MCI is your ISP. You contact MCI and ask them to add an A record for your new domain name, www.esko.com, to forward HTTP and HTTPS traffic to your public firewall IP address of 66.55.44.33.

After about 3 days or so, this record has been propagated across the world. If someone in Thailand 'pings' the domain name www.esko.com, he/she should receive a reply with the IP address of 66.55.44.33.

## 10.7.3. Move the Web Server Inside the Demilitarized Zone (DMZ)

You should physically arrange the network devices so that the Web Server is in a proper DMZ architecture (between two firewalls or plugged into a DMZ port of the public router/firewall).

1. Configure Firewall 1 (public router/firewall):
  - a) Allowed to route traffic to Web Server inside DMZ for HTTP and HTTPS.
  - b) Default ports 80 (HTTP) and 443 (HTTPS).
2. Configure Firewall 2 (gatekeeper for private network):
  - a) Allowed to route traffic on specific ports to WebCenter's Application Server.
  - b) Default ports 1099, 2500, 4444.

**Note:** You can change the default port numbers used at any time—to do this, modify the IIS settings and the WebCenter configuration files on both the Web Server and the Application Server to reflect these custom port numbers.

## 10.7.4. Configure IIS to Receive Traffic

Web traffic is delivered to the public firewall because of the A record. That firewall then forwards the web traffic to the Web Server inside the DMZ.

The Web Server application (IIS) needs to be configured to pick up this traffic for processing. To do this, the Web Server must be assigned a static Private IP Address.

1. On the Web Server, click **Start > Run** and type `inetmgr`. Then click **OK** to start **Internet Information Services (IIS) Manager**.
2. Expand the **Web Site** node.
3. Right-click the **Web Site** node and choose **Properties**.
4. Click the **Web Site** tab and verify that the **IP Address** is correct (or use the drop down list to change it).
5. In the **TCP Port** field, ensure you are using the correct port for HTTP traffic; the default port is 80 (this needs to match your firewall rules).
6. Close IIS Manager.

# 11. Deploying WebCenter

WebCenter uses a three-tier installation framework to facilitate in-house development and configuration before deploying it in production form. The three tiers are the **Installation** version, the **Development** version, and the **Production** version.

## Deployment Workflow

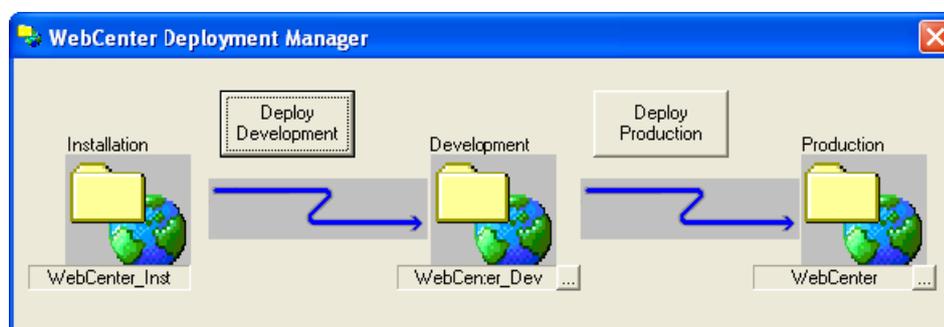
The intended workflow is to install WebCenter, deploy it to Development, modify the Development version, and then when you are satisfied, deploy the Development version to Production.

As time goes by, you can keep modifying the Development version as desired without affecting the Production version. When you are satisfied with the changes made to the Development version, you can deploy it to Production.

At the time of deployment, the custom directory is not overwritten if it already exists in a target instance, so `customizationConfig.xml` and any other customized files in the custom directory are not changed. But when a new instance is created by deployment, the custom directory is created with its default configuration.

## The WebCenter Deployment Manager

The **WebCenter Deployment Manager**, located in **Start > Programs > WebCenter**, manages the deployment process. If there is more than one website on the Web Server, choose the website with which the **WebCenter Deployment Manager** will work and click **OK**.



To further develop the installed version, use the WebCenter Deployment Manager:

- If you want to change the name of the development version, click the ... button in the Development area, and specify the new name of the development version. When you have changed the name, click **Deploy Development**.

Web authors can then modify the site at `http://WebServer_name/WebCenter_Dev` (or whatever name you chose earlier), while normal users can still work using the site at `http://WebServer_name/WebCenter_Inst`.

- Once the developed version is ready for production use, use the WebCenter Deployment Manager again.

If you want to change the name and location of the production version, click the ... button in the Production area and enter the new name. Then, click **Deploy Production**.

The site in WebCenter\_Dev will be copied to WebCenter. Production use starts by users pointing their browsers to `http://WebServer_name/WebCenter`.

**Note:**

You can have multiple development and deployment versions of WebCenter by changing the names for each deployment, e.g. DEV1, DEV\_Other, WebCenter\_Prod1, and so forth.

Also, the deployment name is not case sensitive, so for example WebCenter\_Dev and WebCenter\_dev are considered to be the same deployment instances.

## 12. Localizing WebCenter

---

Localization is the process of making a program ready to run anywhere in the world.

It encompasses modifying the display language, the way units are displayed, decimal separators, time and date formats, and currency format to match the local user preferences.

### 12.1. Understanding Localization in WebCenter

---

WebCenter uses references to separate language files (text strings files) instead of using hard-coded words. WebCenter ships with a variety of language files. Additionally, the text strings files can be translated into any language.

Each WebCenter user can change to a different language in **My WebCenter > My Preferences**.

The default language can be changed in **General Preferences** at any time by any WebCenter user who is a member of the Admins group.

### 12.2. How to Install Custom Translations

---

The language files are in the `languages` subdirectory of the WebCenter installation on the Web Server, such as `\Artios\WebCenter\WebServer\tomcat\webapps\<site name>\languages`.

They are named `wcstrings_xx.xml` where `xx` is a two-letter code for the language, for example `en` for English, `fr` for French, and `de` for German.

1. Copy one of the existing language files, and rename the copy changing the two-letter language code to the new language code.

**Note:** The language code must match the official list of two-letter ISO 639-1 codes at <http://www.loc.gov/standards/iso639-2/englangn.html>. For example, a Danish language word strings file would be named `wcstrings_da.xml`.

2. Translate the strings in the file.
3. On the Web Server, open `\Artios\WebCenter\WebServer\tomcat\webapps\WebCenter_instance\config\config.xml` in a text editor or an XML editor. In the **Languages** section of the file, add a key for the new language, for example `<Language key="da"/>` for a Danish translation.
4. Put the translated language file in the `languages` subdirectory of the WebCenter installation.
5. Open every other `wcstrings_xx.xml` file and add a `<NLanguage_xx>Language</NLanguage_xx>` string after the strings for the existing languages.

For example, add the string `<NLanguage_da>Danish</NLanguage_da>` to install a Danish strings file, substituting the word for Danish in the appropriate language for the string file.

6. If the chosen language is a multi-byte language (such as Japanese, Chinese, or Thai), log on to the Application Server and edit `\Artios\WebCenter\config\appconfig.xml`. Change the value in the `index_lang` field to the appropriate language code that is listed in the comment below the field, and save the file.
7. Restart the Web Server to see the changes.

## 13. The Help System

---

### Old style dynamic help system

WebCenter uses a dynamic help system that checks for the existence of specifically-named XSL files on the Web Server in `\Artios\WebCenter\WebServer\tomcat\webapps\  
<WebCenter_instance>\help`.

A Help link will appear in the menu of the page that has the same name as an XSL file in this directory. The content of a Help file can be anything provided it is in XSL and the file has an .XSL extension.

**Note:** Esko recommends the use of `xmlspy®` for authoring WebCenter Help XSL files. It is available from <http://www.xmlspy.com>. There are also shareware and freeware XSL editors available. You could also modify the sample provided using a text editor such as Notepad; do not use WordPad as it inserts its own formatting codes.

- To change the Webmaster contact name and e-mail address displayed on the login help page, edit `login.xml`.
- If using foreign-language files, append `_xx` (where `xx` is the code for the language) to the end of the file name before the extension, such as `login_fr.xml` for a French help file for the login page.

When determining if a Help link should be on a page, WebCenter looks for a localized Help file, and then for an English one if a localized one is not found. If neither exist, WebCenter does not put a Help link on the page.

### New style dynamic help system linked to [help.esko.com](http://help.esko.com)

Since WebCenter 12.1, a lot of pages (mostly in the admin section) use a dynamic help system linked to [help.esko.com](http://help.esko.com). When a user clicks the help icon, context-aware help information is displayed. By default the documentation from [help.esko.com](http://help.esko.com) is shown, but this behavior is customizable.

It is possible to customize a specific help topic, or to link a subset of help topics to a specific manual or page. The behavior of the help functionality can be configured in the custom folder on the Web Server.

Each help link has a topic (i.e. `common/wc/reference/re_task`). The topic of a help link can be found by looking at the link address: a help icon always links to `help.jsp?topic={TOPIC}&lang={LANG}`.

For customization, the following options are available:

- By placing html files in the correct location in the custom folder on the Web Server: Customization for help pages is done in the `custom/help` directory. Customization can be done per language (by adding files to `custom/help/{LANG}` directory (where `{LANG}` is the abbreviation for the language in WebCenter i.e. `custom/help/en` for English). Customization can also be done for all languages. This is done by putting files in `custom/help/all`.
- By adding a `helpconfig.xml` file with specific settings to the `custom/help` folder on the Web Server: This file can contain a set of rules that will be applied when no specific custom topic is found. In the custom help file you define rules that match topic names. When a rule matches, the rule is applied by sending the user to the correct location, defined in the rule.

**Note:**

The system first searches in the language specific custom folder for a customized html file, if no html file is found for a specific language, it will search in the custom/help/all folder for that topic.

## 14. Upgrading WebCenter

---

You can upgrade directly to WebCenter 20.0 from older versions.

If you have an older version than 12.0, you will need to first upgrade to WebCenter 10.1 or 10.2, make sure it is running correctly, then upgrade to WebCenter 20.0.

### 14.1. Forced System Reboot during Upgrade

---

When updating WebCenter, a full re-installation is required. You need to remove the existing installation before installing a new version.

After uninstalling, you have to reboot to be able to proceed with a new *Installation* process. This is enforced before installing another version.

**Note:** Reboot pending state of a system can be activated not only by WebCenter but also by completed Windows updates or other application installation operations.

### 14.2. Configuration Retained During Upgrade

---

#### 14.2.1. Retained Configuration Values during Upgrade

WebCenter Installer will store specific configuration values of the existing installation when it is being uninstalled. These configuration values will be used during the upgrade.

The Installer input fields will use these stored values for the new installation. You only have to verify if this pre-populated data during the installation process.

The following values are stored by the system:

- Web Server
  - Application Server Hostname
- Application Server
  - Web Server Hostname
  - Database Server Hostname
  - Database type (MS SQL or Oracle)
  - Database Instance name (MS SQL only, default instance can be used in which case this setting is empty)
  - Database connection SID (Oracle only)
  - SA database User password (default password)

**Note:**

1. The password value is not retained, if a custom password was used during the previous installation. You will have to type in this password in this field.
2. Settings made for weekend days other than Saturday and Sunday, has to be made again in Application server. Refer to the steps here.

- FileStore folder path(s)(UNC path is allowed)

**Note:** As this mechanism includes persistence of custom FileStore path values, the `appconfig.xml` configuration file does not have to be modified after re-installing a new WebCenter version.

- Installation Choice: Simple or Advanced
  - If Advanced Installation is selected, the following choices are retained:
    - Java Heap Space Size: Normal or Extra Large
    - View Server: Internal or External
    - Database (internal) User password: Default or Custom

**Note:** The password field is always left empty.

## 14.2.2. FileStore Split during Upgrade

To prevent FileStore size problems, WebCenter supports FileStore split into separate folders. The configuration of the different FileStore paths is stored within `appconfig.xml`.

During the uninstallation phase, the application reads the `appconfig.xml` file and stores all the custom settings. When you re-install, the Installer updates the `appconfig.xml` with these custom values instead of default values (derived from the default FileStore location).

Following FileStore paths can be customized in `appconfig.xml` and the custom values are kept during the reinstall process:

- **temp\_dir**- This node mentions the folder used to keep temporary work files.
- **viewer\_data\_dir**- The node mentions the folder used to store 2D Viewer data files for individual viewable WebCenter Documents.
- **document\_thumbnails\_dir**- The node to store thumbnail files for Documents that support having custom thumbnails generated per Document WebCenter object.

This is optional. If it is missing, Document Thumbnails are stored in the same folder as the main Document files (as set in **document\_dir** node).

- **document\_perspectives\_dir**- The node to store various default and custom Document Perspective files for individual Documents (set of supported Perspective types varies based on the Document Type).

This is also an optional folder. If it is missing, Document Perspectives are stored in the same folder as the main Document files (as set in **document\_dir** node).

## 15. Prepare for the Upgrade

---

This describes how to upgrade WebCenter 12, 14 to the latest build of WebCenter 20.0.

**Note:**

This procedure **applies to all upgrade installations** of WebCenter 20.0, even to "minor" updates between builds of the same version.

**Note:**

This procedure is fairly complex and involves direct manipulation of core application and database files.

Expert help is available to **perform the upgrade for you at a minimal cost**: contact your local Esko Customer Services division for a quote and scheduling.

### 15.1. Prerequisites for the Upgrade

---

#### Installation Media and Licenses

Make sure you have the following at hand before proceeding:

**Media**

- WebCenter 20.0 DVD
- Automation Engine 20.0 DVD

**Licenses**

- ArtiosCAD (20.0 FlexNet server license)
- WebCenter 20.0 (plus optionally Task Management, Advanced Approval, PDF download, Reporting, extra concurrent users)
- OBGE (On Board Graphics Engine)

#### Information Needed

Make sure you collect the following information:

- The location of the FileStore (you can find this information in C:\Artios\WebCenter\Config\appconfig.xml)
- The database engine to use (SQL Server 2008 (R2) / 2012(Express Edition) / 2014(Express Edition) / 2016 (Express Edition), 2017( Express Edition), 2019 (Express Edition) Oracle 10g or Oracle 11g or Oracle 12c).
- The name of the Database Server, the Oracle Database Identifier (SID) if using an Oracle database, and the database administrator password (sys password).
- The name and location of the WebCenter4\_0 database instance (you can find this information in <DRIVE>:\Esko\Artios\WebCenter\ApplicationServer\Jboss\server\default\configuration\standalone.xml. Use your Esko customer login and password for activating licenses.

- The IP address or name of the LDAP server and the port used for the secure connection (typically 636).

**If you are upgrading from 16.1.1 or 18.0 to 18.0.1 or 18.1.1 to 20.0**

WebCenter Installer will store specific configuration values of the existing installation when it is being uninstalled. These configuration values will be used during the upgrade.

The Installer input fields will use these stored values for the new installation. You only have to verify if this pre-populated data during the installation process.

The following values are stored by the system:

- Web Server
  - Application Server Hostname
- Application Server
  - Web Server Hostname
  - Database Server Hostname
  - Database type (MS SQL or Oracle)
  - Database Instance name (MS SQL only, default instance can be used in which case this setting is empty)
  - Database connection SID (Oracle only)
  - SA database User password (default password)

**Note:**

1. The password value is not retained, if a custom password was used during the previous installation. You will have to type in this password in this field.
2. Settings made for weekend days other than Saturday and Sunday, has to be made again in Application server. Refer to the steps here.

- FileStore folder path(s)(UNC path is allowed)

**Note:** As this mechanism includes persistence of custom FileStore path values, the `appconfig.xml` configuration file does not have to be modified after re-installing a new WebCenter version.

- Installation Choice: Simple or Advanced
  - If Advanced Installation is selected, the following choices are retained:
    - Java Heap Space Size: Normal or Extra Large
    - View Server: Internal or External
    - Database (internal) User password: Default or Custom

**Note:** The password field is always left empty.

## 15.2. Prepare for the Upgrade on the Application Server

---

1. Copy the following onto the Application Server:
  - WebCenter 20.0 DVD

- Automation Engine 20.0 DVD
  - ArtiosCAD en license
  - WebCenter 20.0 license (plus optional module licenses)
  - OBGE (On Board Graphics Engine) license
2. Back up:
    - the FileStore
    - the WebCenter4\_0 database
    - the \Artios\WebCenter folder
    - the \Esko\Artios\WebCenter folder
    - any E-mail Notification customizations that may be stored in \WebCenter\ApplicationServer\EmailNotifications\Custom
    - all other non-standard customizations you may have implemented outside of the custom folders
  3. Make a restore point for the OBGE.
  4. Make a backup of the server software configuration.  
For detailed instructions on step 3 and 4, please refer to the **Automation Engine 20.0 Installation Manual**.

## 15.3. Prepare for the Upgrade on the Web Server

---

1. Copy the following onto the Web Server:
  - WebCenter 20.0 DVD
2. Back up \Artios\WebCenter and any non-standard customizations you have implemented outside of the WebCenter instances.

## 16. Upgrade WebCenter

---

### 16.1. Remove WebCenter

---

1. On the Application Server:
  - a) Remove the **WebCenter** software using the **Add/Remove Programs** applet in the **Control Panel**.
  - b) Reboot the server.
  - c) Using Windows Explorer, remove the `\Artios\WebCenter` and `\Esko\Artios\WebCenter` folders, and any other remaining WebCenter-related folders.

**Note:** Take care not to remove the FileStore if it is inside a WebCenter folder!

2. On the Web Server:
  - a) Remove the **WebCenter** software using the **Add/Remove Programs** applet in the **Control Panel**.
  - b) Reboot the Web Server.
  - c) Using IIS, remove all WebCenter instances (only the default "WebCenter\_Inst" is removed automatically).
  - d) Using Windows Explorer, remove `\Artios\WebCenter`, and any other remaining WebCenter-related folders.

### 16.2. Install WebCenter 20.0

---

1. On the Application Server, update the older version of ArtiosCAD Enterprise to the latest version of ArtiosCAD Enterprise, choosing the options described in [Install ArtiosCAD Enterprise on the Application Server](#) on page 24 and the **Use the default configuration** upgrade option.
2. Upgrade the license component using the Automation Engine 20.0 DVD:
  - a) Insert the **Automation Engine 20.0** DVD.

If the DVD does not auto-start, double-click `setup.exe` in its root folder.
  - b) In the window that opens, click **English**.
  - c) Click either:
    - **Software Installation** in the main menu on the left of the window,
    - **Proceed to the installation >>** at the bottom of the window.
  - d) Click **Install** on the next page.
  - e) On the **Instructions** page, click **Run the Automation Engine System Readiness Check**.

At the end of the Readiness Check, read the resulting messages carefully. If the Readiness Check resulted in a problem, correct it before proceeding. Click **Exit** in the **Automation Engine System Readiness Check** dialog when this is done.
  - f) Click **Install the License Server Components**.

- g) Click **Install the System Controller 1.0** and follow the instructions of the installation wizard.
3. [Activate the Licenses](#) on page 25.
4. Uninstall the old version of ArtiosCAD Enterprise.
5. Install WebCenter 20.0, using the English language installer, on the Application Server and on the Web Server, making use of the existing FileStore location and WebCenter4\_0 database location.

**Note:** The installers in other languages should not be used, until further notice.

See [Installing WebCenter](#) on page 22 for more information on the installation procedure.

6. [Install Certificates for LDAPS on the Application Server](#) on page 56.
7. When the upgrade installation is completed, the search crawler needs to be updated. This is to ensure that the search results are up to date or else may result in incomplete search results. To rebuild Search Crawler, Go to **Configuration > Search Crawler Set up** and click on **Rebuild Index**. This operation can take several hours depending on the number of projects, tasks, document (versions) present. Rebuilding the search index has a serious performance impact, and it is advised to run this over the weekend. Search results will be incomplete as long as the index is being rebuild. This is to ensure that the search results are upto date and complete.

## 16.3. Upgrade the OBGE

---

**Note:**

- The OBGE must have the same or a later version than the Automation Engine production server.
- Make sure that you do not update any CADx component while updating the OBGE! CADx must only be updated by the ArtiosCAD Enterprise installer.

Upgrade the OBGE (On-Board Graphic Engine) to Automation Engine 20.0 :

1. Upgrade the prerequisite components:
  - a) Insert the **Automation Engine 20.0** DVD.

If the DVD does not auto-start, double-click `setup.exe` in its root folder.
  - b) In the window that opens, click **English**.
  - c) Click either:
    - **Software Installation** in the main menu on the left of the window,
    - **Proceed to the installation >>** at the bottom of the window.
  - d) Click **Install** on the next page.
  - e) Click **Install the prerequisite components** and follow the instructions of the installation wizard.

**Note:** Remember to not update any CADx component!

The prerequisite components are now upgraded.

2. Test the OBGE and check its configuration (Hot Folder and container, see [Configure the OBGE](#) on page 38 for details).

## 16.4. Configure WebCenter

---

1. If you had WebCenter customizations:
  - a) Reapply the email notification customization that you backed up in your `custom` folder.  
Mentions of an older version of WebCenter are automatically updated to "WebCenter 14".
  - b) Apply any standard customizations you saved earlier to your new WebCenter instance(s).
  - c) Redo any other non-standard customization that you may have had.  
See the WebCenter Customization guide for more information.



**Attention:**

- Do NOT copy the files as the XML structure might be different and you might break it.
- Do not customize the **Default** instance of WebCenter as if it doesn't work anymore you will have to completely reinstall it!

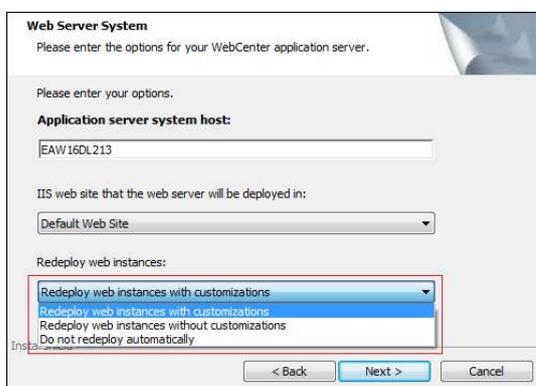
2. In case running the database scripts automatically (preferred) is switched off, run the WebCenter 14 database scripts.  
  
See [Run the Database Schema Scripts on the Application Server](#) on page 28 for more information on the database schema scripts.
3. Log on the WebCenter web interface and change the administrator password (see [Log On to WebCenter and Change the Admin Password](#)).
4. Deploy new WebCenter instances as desired.  
See [Deploying WebCenter](#) on page 65 for more information.

The upgrade is complete.

## 16.5. Additional step when you upgrade from 18 to later versions

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When performing an upgrade to installation of a WebCenter 18.0 or later, if the Web server is on the same host as the installer, then the following options are available if the custom folders is backed up:



- **Redeploy web instances with customizations:** This is the default option. Re-deploys the custom instances marked during the previous uninstall procedure as well as the custom folders backup.
- **Redeploy web instances without customizations:** Re-deploys the custom instances marked during the previous uninstall procedure but will not retain the backed-up custom folders.
- **Do not redeploy automatically:** Will not re-deploy any of the custom instances and their custom folder backups.

## 17. Uninstalling WebCenter

---

1. Log on to the Web Server as a member of the local Administrators group.
2. Stop the **IIS Admin** service.
3. Backup all deployed sites within `\Artios\WebCenter\WebServer\Tomcat\webapps` in case they are needed in the future.
4. In WebCenter 18.0 or later, Web server installer records the names of all the custom WebCenter instances while backing up the custom folder where all Web server based customizations of a given instance including the default *WebCenter\_Inst* are stored.

*Common App Data* root folder is used to store the customization files backup on the target Web server host. The default path on most Windows server would be `C:\ProgramData\Esko\WebCenter\WebInstanceCustomData`.

This folder is the root and each WebCenter web instance custom folder files that was backed up is stored under a subfolder that takes the name of the appropriate instance.

The list of web instances that were found and can be later re-deployed are stored in the registry among the other WebCenter upgrade values. Read more about this here [Additional step when you upgrade from 18 to later versions](#) on page 78.

5. Use the **Add/Remove Programs** applet in **Control Panel** to remove WebCenter.
6. Manually delete all subdirectories under `\Artios\WebCenter`.
7. Log on to the Application Server as a member of the local Administrators group.
8. Back up `\Artios\WebCenter\Filestore` and all its subdirectories in case they are needed in the future.
9. Use the **Add/Remove Programs** applet in **Control Panel** to remove WebCenter.
10. Manually delete all subdirectories under `\Artios\WebCenter` for the Automation Engine Prerequisites

If WebCenter is uninstalled with the intention of installing a newer version (and keeping an existing database), do NOT delete the files in `\Artios\WebCenter` as they contain information needed for the new version to run with the existing admin password.

11. If using Microsoft SQL Server 2008, or Microsoft SQL Server 2008 Express Edition, back up the WebCenter4\_0 database and then use Enterprise Manager to manually delete the WebCenter4\_0 database.

If using Oracle, backup the database and either delete the instance, or, if it is shared, connect to the instance and issue the drop user `webcenter cascade;` command.

12. If the OBGE is installed, remove all the Esko products using the **Add/Remove Programs** applet in **Control Panel**. Select all products except the FLEXIm flexid drivers.
13. Remove ArtiosCAD Enterprise by using the **Add/Remove Programs** applet in **Control Panel**. Once all the products are removed, WebCenter should be completely removed.
14. Reboot your machine. *If you need to install another version, this is a required step.*