CA Output Management Web Viewer

Installation Guide

Release 12.1.00

CA Technologies Product References

This document references the following CA Technologies products:

- CA Bundl®
- CA Common Services
- CA Common Communications Interface (CA CCI)
- CA Deliver™
- CA Dispatch™
- CA Distributed Repository Access System (CA DRAS)
- CA View®
- CA Output Management Web Viewer Version (CA OM Web Viewer)

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Contact CA Support

For your convenience, CA Technologies provides one site where you can access the information that you need for your Home Office, Small Business, and Enterprise CA Technologies products. At http://ca.com/support, you can access the following resources:

- Online and telephone contact information for technical assistance and customer services
- Information about user communities and forums
- Product and documentation downloads
- CA Support policies and guidelines
- Other helpful resources appropriate for your product

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To provide feedback about CA Technologies product documentation, complete our short customer survey which is available on the CA Support website at http://ca.com/docs.

Documentation Changes

The following documentation updates have been made since the last release of this documentation:

- Chapter 2: Preparing for Installation:
  - Replaced detailed system requirements with a link to the CA OM Web Viewer Supportability Matrix.
  - Added Prerequisites for Cooperative Processing using CA DRAS (see page 21)
- Chapter 3: Preparing for Installation—Added the following installation scenarios:
  - Install, Configure, and Deploy on the Same Computer (see page 36)
  - Install and Configure on One Computer, and Deploy on Multiple Computers (see page 47)
  - Install on One Computer, and Configure and Deploy on Multiple Computers (see page 58)
  - Install, Configure, and Deploy Multiple Instances on One Computer (see page 68)
  - Install, Configure, and Deploy Multiple Instances on On Multiple Computers (see page 82)
- Chapter 4: Installing the Product—Updated information about installing the product from a CD or ISO file.
- Chapter 5: Configuring CA OM Web Viewer—Added this chapter to separate configuration information from the installation content.
- FAQ chapter: Moved to *Administration Guide*

Contents

Chapter 1: Overview

Today, more than ever, business success depends on quick access to the mission critical information that is processed, printed, and stored in a business environment. This information is an important business asset. The information must be secured, retained, and managed according to departmental, corporate, and government guidelines and regulations.

CA OM Web Viewer r12.1 uses the Internet to instantly and seamlessly view any part of a document that is stored in targeted output repositories.

CA OM Web Viewer r12.1 is also referred to as CA OM Web Viewer throughout this document.

This section contains the following topics:

The Purpose of This Guide

This guide introduces you to CA OM Web Viewer. The guide provides an overview of the product and its usability; it also supplies installation information and scenarios specific to your environment.

Audience

This guide is for the Administrators that install, use, and maintain the product. This guide assumes that you are familiar with the underlying operating systems such as Linux, Solaris, HP-UX, or Microsoft Windows systems, terms, and concepts.

Conventions Used

For the conventions used in this documentation, see the *CA Output Management Web Viewer Administration Guide.*

Chapter 2: Preparing for Installation

This section contains the following topics:

Prerequisites

This section describes prerequisites for installing CA OM Web Viewer.

More information:

System Requirements

For system requirements, see the CA OM Web Viewer Supportability Matrix. The support matrix includes requirements for the following categories and more:

- Operating systems
- Browsers
- Web servers

  Note: CA OM Web Viewer requires a Java web application server. You can use an existing supported version or you can install the version that is included with the CA OM Web Viewer installation files.
- Database systems
- CA Technologies, including CA View, CA DRAS, and CA CCI

Note: In Internet Explorer 11, Microsoft has deprecated features that CA OM Web Viewer 12.1 uses. Therefore, CA OM Web Viewer 12.1 cannot certify support for releases of Internet Explorer after Internet Explorer 11.

Required Settings for Print Preview Function in Internet Explorer

If you use Internet Explorer to access CA OM Web Viewer, use one of the following options to access the Print Preview function for CA OM Web Viewer reports:

- Use the Print Preview Function of Internet Explorer
- Enable the Print Preview Button of CA OM Web Viewer

Use the Print Preview Function of Internet Explorer

This option uses the Print Preview function of the browser. This option lets you enable Print Preview *without* changing your browser security settings.

Follow these steps:

1. In Internet Explorer, open a CA OM Web Viewer report, click Print.
2. On the Print dialog, click Print.
3. On the Print Friendly page, select File, Print Preview.

Enable the Print Preview Button of CA OM Web Viewer

This option lets you enable the Print Preview button of CA OM Web Viewer by changing your browser security settings. This option requires the following settings:

- The following setting is enabled: Allow scripting of Microsoft web browser control.
- The security level is Medium-high (or lower).

For maximum security, we recommend that you perform both of the following procedures. To enable the Print Preview button, perform the second procedure.

- Add CA OM Web Viewer to the Local Intranet Zone.

  Note: If you do not want to add CA OM Web Viewer to the local intranet zone, consider adding it to your trusted sites.

- Update the Security Zone Where CA OM Web Viewer Resides

Add CA OM Web Viewer to the Local Intranet Zone

Follow these steps:

1. Log in to CA OM Web Viewer.
2. Copy the protocol (typically http or https) and server name from the URL in the address bar to a text editor.

   For example, your CA OM Web Viewer address is:

   https://youserver.company.com:8080/CAOMWebViewer12/

   Copy only the following string:

   https://youserver.company.com

3. In Internet Explorer, select Tools, Internet Options, and click the Security tab.
4. Click the Local Intranet icon, and click Sites.
5. Click Advanced and paste the string from Step 3 into the text field named Add this website to the zone.
6. If your server does not use SSL, verify that the Require server verification (https:) for all sites in this zone checkbox is unchecked.

   If you do not want to clear this checkbox, perform one of these options:

   - (Recommended) Add CA OM Web Viewer to the Trusted Sites security zone, if it is not already in that zone. Also, perform the next procedure, Update the Security Zone for CA OM Web Viewer, on that zone.
   - Perform the next procedure on the current security zone for CA OM Web Viewer.
7. Click Add.
8. In CA OM Web Viewer, print a document and verify that the Print Preview button is visible on the Print Friendly page.

Update the Security Zone Where CA OM Web Viewer Resides

Enable the Print Preview button for CA OM Web Viewer, by enabling the required settings in the security zone where CA OM Web Viewer resides.

Follow these steps:

1. Log in to CA OM Web Viewer.
2. In Internet Explorer, select Tools, Internet Options, and click the Security tab.

   Note: When you are logged in to CA OM Web Viewer, the zone for CA OM Web Viewer is the zone highlighted in the Security tab.
3. Verify that the security level for this zone is Medium-high (or lower).

   Note: If you do not want to lower the security settings, consider adding CA OM Web Viewer to the Local intranet zone or the Trusted Site zone.
4. Click Custom Level and verify that the following setting is enabled: Allow scripting of Microsoft web browser control.
5. In CA OM Web Viewer, print a document and verify that the Print Preview button is visible on the Print Friendly page.

Disk and Memory Space Requirement

To install CA OM Web Viewer, you need at least 150 MB of free space in your computer's temp folder for the installation.

- On UNIX or USS, the system temp folder is normally /tmp
- On Windows, the user's temp folder is used.

  For example: C:\Users\USERID\AppData\Local\Temp.

  The user's temp folder location can be found by typing echo %temp% at the command prompt.

CA OM Web Viewer requires 500 MB to 1 GB of disk space and 1 to 2 GB in main memory. For multiple users, more space is needed.

No formula can be used to calculate the required memory for CA OM Web Viewer because the memory usage depends on:

- Number of users
- Login user roles
- User runtime activities

For each Admin user, Advanced user, and Basic user, there are substantial differences in the memory consumption. The possible memory range is from 500 KB to 1 MB per user at runtime.

Note: For information about changing memory settings in your Java Runtime Environment, see the following sections.

Environment Variables

Do not include these parameters in the environment variables *JAVA_TOOL_OPTIONS* and *_JAVA_OPTIONS*:

- -agentlib:jvmhook
- -Xrunjvmhook

Memory Settings and Hardware Requirements

This section describes the hardware that is required for CA Output Management Web Viewer, and how to change the settings.

How Much Memory is Required?

Determine the following items:

- How many users are expected to use CA OM Web Viewer at the same time?
- What are your database connection limits?
  - How many concurrent connections are required for read access?
  - How many concurrent connections are required for write access?

  Note: These values can be set during the installation and adjusted after the installation.

For more information, see the CA Distributed Repository Access System (CA DRAS) Considerations to calculate the number of concurrent users.

Where Are the Memory Settings and How Are They Changed?

Change the memory settings according to the product you are using.

Java Web Application Server

Add or change the following Java parameters when you launch the Java Web application server.

- -Xms – the initial heap size when the Java application is starting
- -Xmx – the maximum heap size

  For example, if you set -Xms1024m and Xmx2048m as your parameters, the Java virtual machines do the following functions:

  - allocate 1024 MB at the beginning
  - allow up to 2048 MB of memory usage at runtime

The Apache Tomcat Java Web application server that the installer installs.

Go to the install directory, find the appropriate file, and change the settings:

Windows:

In apache-tomcat/bin/catalina.bat, find the line:

set CATALINA_OPTS=-Xms256m -Xmx2048m …

Make your requirement changes.

Windows – registered as a Windows service:

In apache-tomcat/bin/service.bat, find the string:

JvmMs 256 --JvmMx 2048

Make your requirement changes.

Note: Reinstall the service as follows:

1. Remove the existing service: service.bat
2. Reinstall the service: service.bat

Other operating systems:

In the apache-tomcat/bin/catalina.sh, find the line:

CATALINA_OPTS="-Xms256m -Xmx2048m…

Make your requirement changes.

Default Administrator ID Based on a Mainframe User Account

To function as the default CA OM Web Viewer administrator, you must have a mainframe user account. During the configuration process, the Configuration Tool prompts you for a default administrator's ID. This ID must belong to a current mainframe user.

CCI and DRAS Servers

CA OM Web Viewer communicates with the mainframe through a Common Communications Interface (CCI) server. CA OM Web Viewer accesses reports through CA Distributed Repository Access System (CA DRAS) servers running on the mainframe. The CCI server must be the TCP/IP version.

Note: CA OM Web Viewer requires at least one CA DRAS r11.5 with the required APAR (RO41367) installed on the mainframe.

Important! The product license key for CA OM Web Viewer is an LMP Key that installs on the DRAS Server that you want to use. For more information about this license key, see the *CA DRAS Operations Guide*.

CA Distributed Repository Access System (CA DRAS) Considerations

You can calculate the number of concurrent users that a CA DRAS server supports using the following formula:

For CA View

Solve for maxusers:

- **Databases =** number of the CA View databases
- **Data sets =** (number of the data file data sets for the CA View databases) + (number of the data file data sets for CA Deliver databases)
- **maxusers =** ((maximum available below-the-line storage – (databases * 1616) - (data sets * 528)) / 2424) and drop remainder

Based on the formula in the example:

Given several CA View databases up to 3428 users per DRAS server can be supported:

- 134 View data sets (extents)
- 0 Deliver data sets(extents)
- 8388608 bytes of maximum below-the-line storage

Prerequisites for Cooperative Processing using CA DRAS

To use CA DRAS to implement cooperative processing with CA OM Web Viewer, verify that you have met these prerequisites:

- Installed CA OM Web Viewer on a Java web server.
- Installed and configured the ENF and CCITCP tasks from CA Common Services.
- Installed one of the following CA mainframe solutions: CA View, CA Dispatch, or CA Bundl.
- Installed CA DRAS and configured it to run with CA View, CA Dispatch, or CA Bundl, whichever you installed.

Load Balancing

CA DRAS supports load balancing if multiple DRAS servers are installed on your mainframe computer.

The architecture of CA OM Web Viewer allows the server replication for the reliability and load balancing. Because of the server replication, load balancing can be achieved at both the Java web application server level and the DRAS server level.

You can manage the arrangement that is based on your service level agreement.

Database Prerequisites

CA OM Web Viewer works with a database server to store administrative data and improve the run-time performance by caching that administrative data. You can:

- Let CA OM Web Viewer create an embedded database (Apache Derby embedded database).
- Use an external database (DB2, Derby, Oracle & Microsoft SQL Server).

For the best performance, we recommend that you use an external database server.

Important! The embedded database is used for application testing and demo purposes and is not recommended for any production use.

Note: For more information, see the instructions specific to your chosen installation mode.

Embedded Database

If you choose the embedded database option with application level internal configuration, CA OM Web Viewer creates and initializes an embedded database (Apache Derby embedded database) with the proper settings. CA OM Web Viewer stores administrative data in this embedded database.

Note: The embedded database with application level internal configuration is created under a directory according to the type of application server where CA OM Web Viewer is deployed. For example:

- Tomcat: apache-tomcat/webapps/CAOMWebViewer12/database
- WebSphere: WebSphere/AppServer/derby/database

Important! With application level internal configuration on Apache Tomcat, an embedded database is a component that belongs to the installed CA OM Web Viewer application, undeploying or uninstalling, CA OM Web Viewer also removes the embedded database if the embedded database is created under the application's working folder.

This situation is applicable with application level internal configuration on some application servers such as Apache Tomcat. To keep the content of an existing embedded database, you *must* manually back up and copy the database directory.

If you choose the embedded database option with external system level configuration or application level external configuration, CA OM Web Viewer creates and initializes an embedded database under the install directory, external system level configuration parent location pointed to by the CAOMWV12_HOME variable, or the application level configuration context folder. For example:
External System Level: <CAOMWV12_HOME>\database
Application Level External Configuration: <CAOMWV12_HOME>\<Application Context>\database

External Database

We recommend that you use an external database to keep administrative data from being affected by undeploying/uninstalling or redeploying/re-installing CA OM Web Viewer.

- If you choose an external database server, the system administrator sets up the database.
  - On the database server, you must create a specific database for CA OM Web Viewer.
  - If you used a Microsoft SQL Server database with CA OM Web Viewer 11.5 or a prior release, you must create a new database to be compatible with CA OM Web Viewer 12.0 or later releases.
  - This database must be writable with a valid user account that has permission to access it.
  - The external database server must provide a JDBC-3 or JDBC-4 compliant interface.
  - For DB2 Version 9, you must set up and run your DB2 server in new function mode (NFM). Version 10 or later does not require NFM.
  - If you are using DB2 on z/OS, you must provide a license jar file for the JDBC connection.

    The JDBC connection to DB2 on z/OS uses a JDBC driver, which requires a license file to connect to the DB2 endpoint. The license file is available only if you already have a license for DB2 Connect.

    The db2jcc_license_cisuz.jar file is included in all DB2 Connect server editions including DB2 Connect Personal Edition. The license is also part of the IBM Database Enterprise Developer Edition. If you already have one of these products, then use the license file from the DB2 Connect Activation CD. If you have a Passport Advantage account, then remember to download the activation key from Passport Advantage for the DB2 Connect edition that you have purchased. If you have not purchased the DB2 Connect edition contact IBM to purchase the product.

    You can find and download db2jcc_license_cisuz.jar in the following location on the DB2 Connect activation CD or in the FMID JDBAA12 for a Release 10.x DB2 SMP/E install on z/OS.

    /db2/license

The tables of the database can be created manually or automatically, depending on whether the account is granted with CREATE TABLE privileges:

- If this account has the CREATE TABLE privileges, this database can be empty and CA OM Web Viewer automatically creates the necessary tables.

- If this account does not have the CREATE TABLE privileges, ask your database administrator (DBA) to create tables. The tables must be created according to the Data Description Language (DDL) statements that are provided with CA OM Web Viewer.

Note: These DDL statements can be found under the ddl folder in your installation media or the installed directory. For each supported database type, a pair of SQL scripts is provided as follows:

  - create.sql - For creating tables in the precreated database
  - drop.sql - For deleting tables from the precreated database

See the specific instructions in either the GUI or Console mode of installation.

Note: Currently we provide DDLs for the following types of database: DB2, Derby, Oracle, and Microsoft SQL Server. For the DB2 mainframe, a template is provided so that the DBA can employ a schema which is not the default. If this is chosen, then you must add the current Schema property with a value followed by a semicolon in the JDBC URL.

Example:

jdbc:db2://<server>:<port-number>/<databaseName>:currentSchema=<schemaName>;

Mode of Installation, GUI or Console

The installer provides two different running modes and determines which mode is the most appropriate for use in your execution environment.

Note: Both modes provide the same functionality.

- GUI mode

  The installation wizard is shown with a graphical user interface.

- Console

  In a console environment, the installation wizard is presented in a text-only mode but provides the same functionality as the one with GUI.

More information:

Installation, Configuration, and Deployment Scenarios (see page 33)

Installation Scenarios

A CA OM Web Viewer installation involves the following entities:

- The Java Web application server

  CA OM Web Viewer is a Java Web application that must be run on a Java Web application server.

- (Optional, but recommended) The database server

  CA OM Web Viewer can be configured to link to a Relational Database Management System (RDBMS) for the administration, data persistence, and caching frequently used administrative information. CA OM Web Viewer requires a database having a Java Database Connectivity (JDBC) driver compliant to type-3 JDBC specifications.

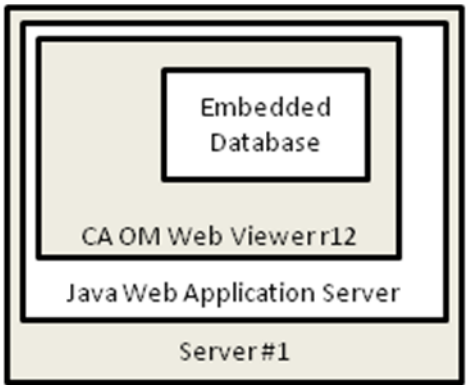
  For the best performance, we recommend that you use a standalone database server. However, if there is no database server, CA OM Web Viewer can create an embedded database (Apache Derby embedded database) with the product. This option is not recommended for any production use.

The following sections provide examples of possible installation scenarios.

Scenario 1 - One Java Web Application Server with an Embedded Database on One Computer

In this scenario, you have a single server. You install the product on a Java web application server that runs on this server.

The choice not to use an external database causes CA OM Web Viewer to create an embedded database (Apache Derby embedded Database) within its run-time environment.

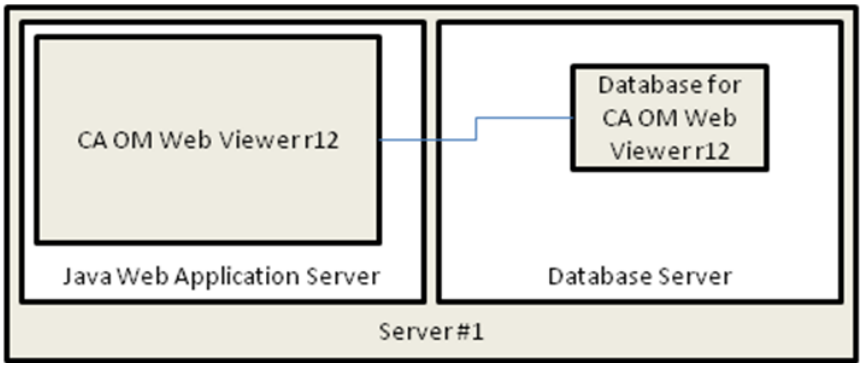


More information:

Install, Configure, and Deploy on One Computer (see page 36)

Scenario 2 - One Java Web Application Server and an External Database on the Same Machine.

In this scenario, you have one Java web application and one database server that run on the same computer. During the installation, choose the external database option, and specify the JDBC connection information to set up the connection between CA OM Web Viewer and the database server.



More information:

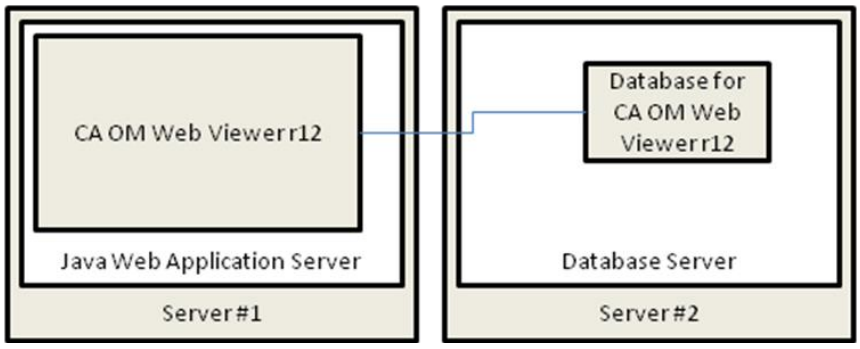
Install, Configure, and Deploy on One Computer (see page 36)

Scenario 3 - Java Web Server and the External Database Server Are on Different Computers

CA OM Web Viewer connects to an external database through the standard JDBC protocol. You can host the external database on a computer different from the computer where the Java web server is located.

In this scenario, you have a dedicated database server.

During the installation, choose the external database option and specify the JDBC connection information to set up the connection between CA OM Web Viewer and the database server.



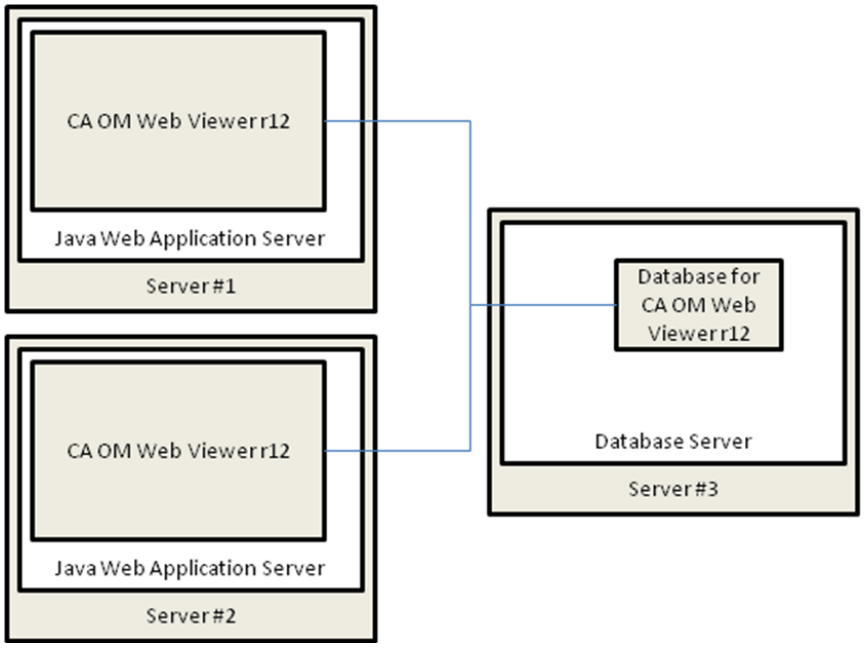
More information:

Install, Configure, and Deploy on One Computer (see page 36)

Scenario 4 - Multiple Java Web Servers

For better scalability, you can deploy multiple instances of CA OM Web Viewer on several Java Web application servers, and set to connect to a centralized database server.

During the installation for each CA OM Web Viewer, choose the external database option and specify the JDBC connection information to set up connections to this database server.



More information:

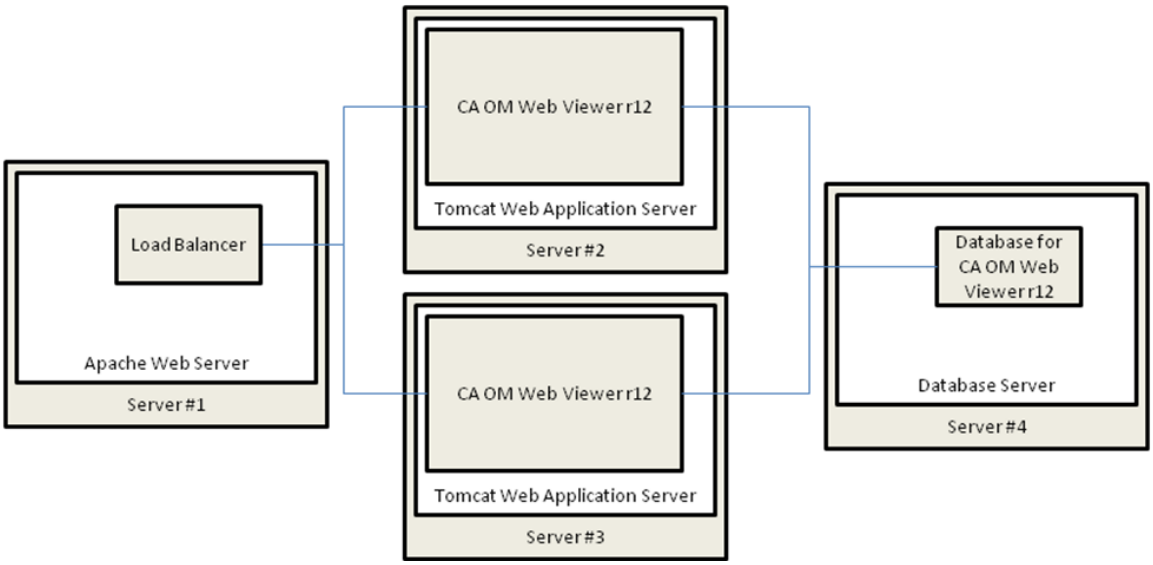
Install and Configure on One Computer, and Deploy on Multiple Computers (see page 47)
Install on One Computer, and Configure and Deploy on Multiple Computers (see page 58)

Scenario 5 - Load Balancing using Apache Web Server with Tomcat Servers

With multiple instances of CA OM Web Viewer, you can deploy another server as a load balancer to dispatch requests.

Note: The load balancer must support the session affinity or session stickiness to ensure that requests of the same session are directed to the same server.

For example, deploy an Apache web server as the front-end server with multiple Tomcat servers in the background. This front-end server not only provides a single entry point for a cluster of web application servers, but the server also supports load balancing.



Scalability

CA Output Management Web Viewer can be configured to optimize the number of active, concurrent users. If your response time is slow, you can consider one of the options explained in the following sections.

Note: CA OM Web Viewer is a gateway to your mainframe reports stored in a CA View, CA Dispatch, or the CA Bundl repository. Any mainframe CPU-intensive operation does not decrease when scaling CA OM Web Viewer.

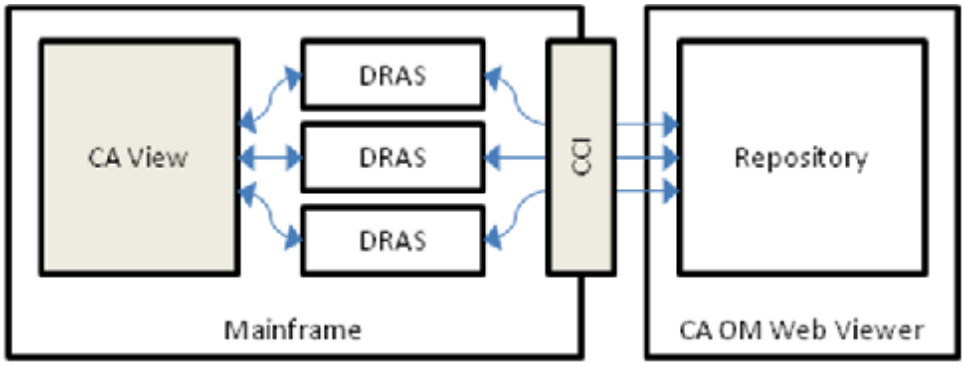
One CA OM Web Viewer with Multiple CA DRAS Started Tasks

You can install and run multiple CA DRAS started tasks with one CA OM Web Viewer.

An administrator can configure one repository in CA OM Web Viewer to have multiple DRAS tasks or Repository Locations. In this scenario, each task connects to a specific ENF(CCI)/CA DRAS/CA View or a specific ENF(CCI)/CA DRAS/CA Dispatch repository.

CA OM Web Viewer distributes the load among these DRAS tasks to access this particular mainframe View/Dispatch repository.

This graphic illustrates the concept of load balancing among several DRAS tasks.



Chapter 3: Installing

This section contains the following topics:

Acquiring the Product Installer

CA OM Web Viewer is shipped on a CD disc or is downloadable from the CA Support website.

Use the CD or ISO File

From the CD disk or the mounted ISO file, follow these steps:

To locate the installer through a CD:

1. Open the folder InstData.
2. Locate a folder from the following list that is based on your operating environment:
   - Windows_x64\NoVM Windows Platforms
   - Multiplatform Other Platforms

   Note: The NoVM folder refers to no Java Virtual Machine. Install Java before running this program.
3. Run the appropriate installer:
   - Windows Platform CAOMWV.exe
   - Multiplatform java –jar CAOMWV.jar

Installation Considerations

The CA OM Web Viewer installer provides components that are required to use the application. The components include:

- The main Web Application Archive (WAR) file (CA OM Web Viewer12.war)
- A supplementary WAR file (castylesr5.1.3.war)
- Alternately, you can choose to produce a single EAR file that contains both the WAR files.
- (Optional) The Apache Tomcat web application server
- The Configuration utilities
- Database DDLs in the form of SQL scripts.

Overview of Installation and Configuration Steps

The following procedure is an overview of the CA OM Web Viewer installation process:

Follow these steps:

1. If JRE is not installed on your computer, install the Java Runtime Environment (JRE).
2. (Optional) Install the Apache Tomcat Java web application server. You can choose to use your own Java web application servers such as IBM WebSphere or Apache Tomcat.
3. Install CA OM Web Viewer.
4. Configure CA OM Web Viewer.
5. If you did not install Tomcat, deploy CA OM Web Viewer.

Installation, Configuration, and Deployment Scenarios

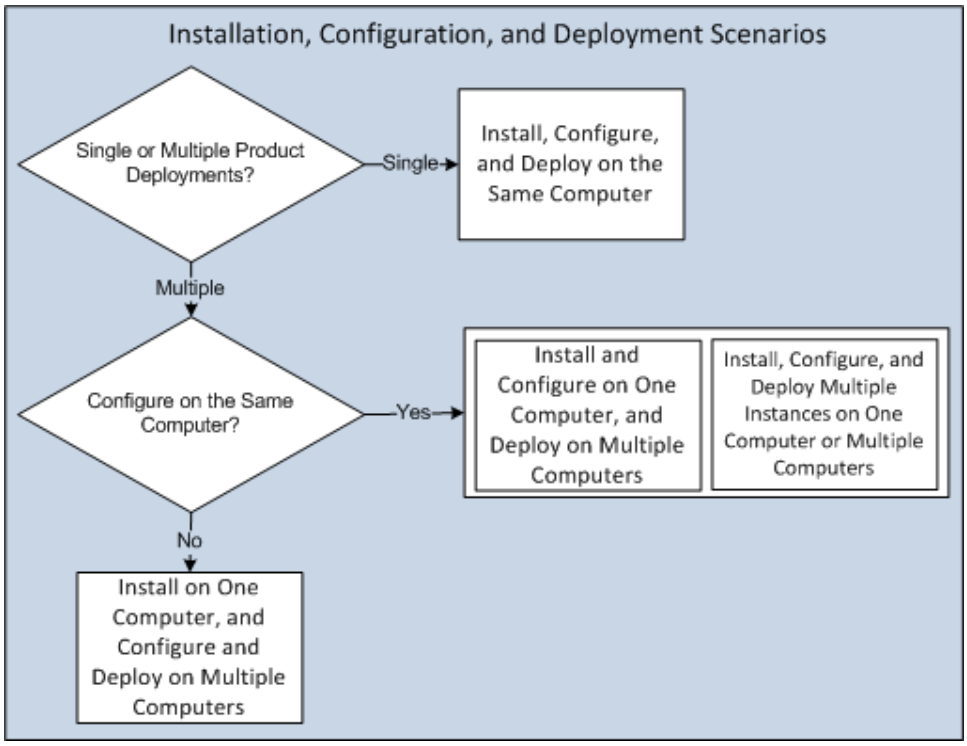
The CA OM Web Viewer web application runs within a Java web application server, such as Apache Tomcat or IBM WebSphere. You can install the product on the same computer or logical partition (LPAR) of the computer as the Java web application server, or on a different computer. For example, you can install the product on the same computer, and you can deploy the product to multiple Java web application servers for load balancing.

Note: The user roles in your environment can differ. The user who installs the application software can differ from the web server administrator. The installer must also understand the available configuration types (see page 37).

Regardless of the reason, when you have multiple product instances, the instances must share a common database. This sharing helps preserve end-user settings across instances, as well as simplifying administration.

Instances can optionally share configuration settings, except when they run on the same computer or LPAR (the CCI Client SystemID must be unique). Use the Full install option if you want the product and Apache Tomcat with the product predeployed on the server.

The following diagram describes the installation, configuration, and deployment scenarios:



- Install, configure, and deploy on one computer (see page 36)

  You want to use a single computer for your environment. In this example, you can use internal configuration.

  Important! If you deploy the product with this type of configuration, you have to redeploy your application after each configuration change.

- Install and configure on one computer, and deploy on multiple computers (see page 47)

  You want to use different computers for your environment. For example, you want to install and configure the product on one computer. However, you want to deploy the product on a second computer, or many computers. We recommend this setup when you require scalability with multiple Java EE Application Servers.

- Install on one computer, and configure and deploy on multiple computers (see page 58)

  You want to use different computers for your environment. For example, you want to install the product on the computer as a test system. However, you want to configure and deploy the product on secondary computers as the production systems. You configure each secondary computer independently.

- Install, configure, and deploy multiple instances on one computer

You want to install and configure the product on the same computer, but you also want to deploy multiple instances of the product.

- Install, configure, and deploy multiple instances on multiple computers (see page 82)

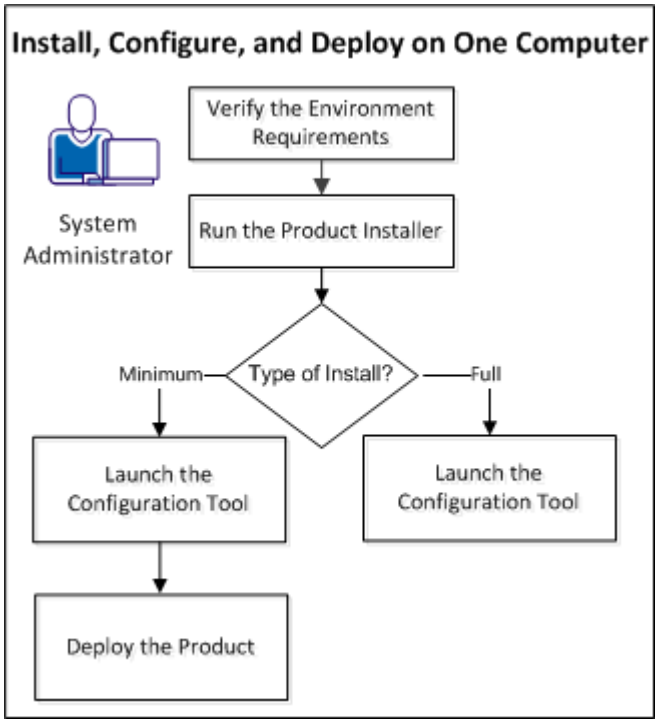
  You want to install and configure the product on multiple computers. For example, you want two CA OM Web Viewer instances running on your test computer, and two similar instances running on your production computer.

Install, Configure, and Deploy on One Computer

As a system administrator, you want to install, configure, and deploy on the same computer. To perform these tasks, you run the product installer where you installed the Java web application server. This computer can contain the database server application, or it can reside on another computer.

Important! After the Full install, never undeploy CA OM Web Viewer from the installed Apache Tomcat. Undeploying results in data loss, or even loss of the application. If you undeploy, you have to restore from a backup WAR file. Find your copy of the product installer. (See Acquiring the Product Installer (see page 31), for more information. FTP your installer to a different computer if needed.

The following diagram shows how you install, configure, and deploy on the same computer:

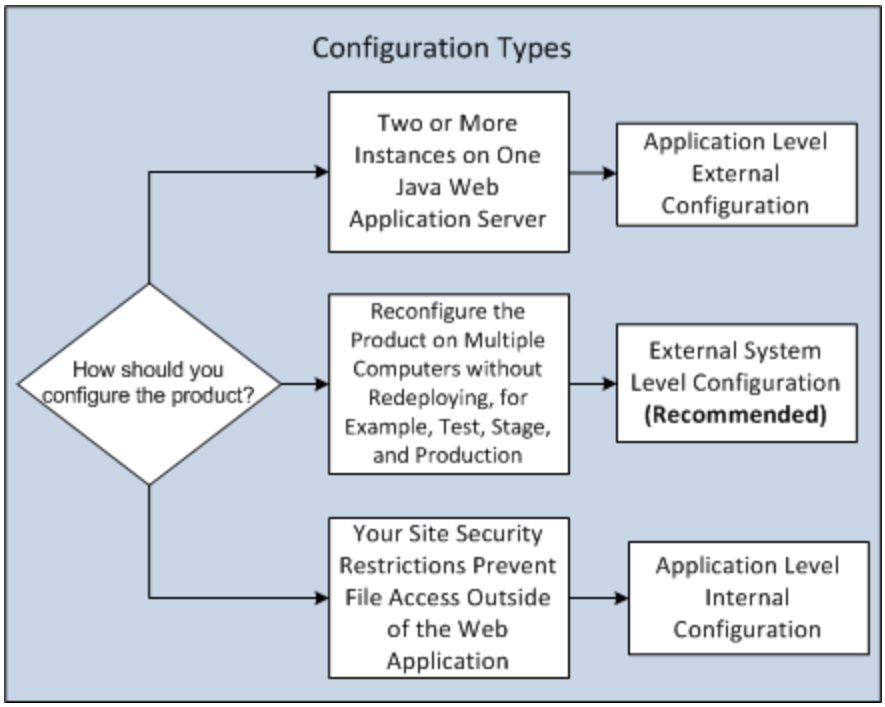


1. Verify your configuration type (see page 37), deployment prerequisites for WebSphere (see page 39) or Apache Tomcat (see page 41), and the environment requirements (see page 42).
2. Run the product installer (see page 43).
   - Select Minimal to install either an EAR file, or a pair of WAR files that you can deploy to your Web Application server, and click Next.
   - Select Full to install CA OM Web Viewer and Apache Tomcat with the product predeployed on the server.

3. Launch the configuration tool (see page 44).
4. (Minimal Install Only) Deploy the product (see page 46).

Choosing a Configuration Type

The following diagram describes the basic configuration types:



External System Level Configuration

Lets you update your application easily, and then you copy the application to multiple systems, without having to reconfigure the product.

Your configuration files are located in a directory outside of the CA OM Web Viewer web application on the same computer. The web application reads this directory location from the CAOMWV12_HOME (see page 107) Environment Variable.

You are not required to redeploy your CA OM Web Viewer application after you modify the settings. Only a web application restart is required. This configuration option lets you update your application easily, and then copy the CA OM Web Viewer application WAR or EAR file to multiple systems, without having to reconfigure the WAR or EAR file.

Important! This configuration is recommended for most environments. However, there are certain situations when you want to use another configuration type. If you intend to run two instances of CA OM Web Viewer on one computer, do not use External System Level Configuration. Instead, use Application Level External Configuration or Application Level Internal Configuration.

Application Level External Configuration

Lets you have two or more copies of the product on one Java application web server, or on one computer.

Your configuration files are located in a directory outside of the CA OM Web Viewer web application on the same computer. The web application reads this directory location from a parameter within web.xml.

Note: In some situations, you are required to redeploy your CA OM Web Viewer application after settings changes. Often, only a web application restart is required.

Important! To deploy the product to multiple servers using application level external configuration files, use the same path to your configuration files on all servers. If you do not use the same path, you have to apply patches to each system separately. With different configuration paths on each server, you cannot apply a patch to only one EAR or WAR file, for example, on a test computer, and then copy that same EAR or WAR file to each server where you to run the product, for example, on several production computers.

Application Level Internal Configuration

Your site security restrictions do not allow web applications to access files outside of the web application.

Your configuration files are located in a directory inside of the CA OM Web Viewer web application. The web application uses the default directory within the web application.

Note: You are required to redeploy your CA OM Web Viewer application after settings changes.

Important! To deploy the product to multiple servers using internal configuration files, you have to apply patches to each system separately. With internal configuration, you cannot apply a patch to only one EAR or WAR file, for example, on a test computer, and then copy that same EAR or WAR file to each server where you to run the product, for example, on several production computers.

Deployment Prerequisites for WebSphere

Before you deploy CA OM Web Viewer on WebSphere, verify that you applied all fixes for the WebSphere server.

To deploy as a WAR file on WebSphere, set the Class loader order to *Classes loaded with local class loader first (parent last)* at both the module, and application level, in order to load libraries within the CA OM Web Viewer package first.

Notes:

- If you selected to produce an EAR file during installation, this setting is included in the EAR file automatically, so you can deploy this EAR file on WebSphere without changing this setting.
- For a web server to host multiple instances of CA OM Web Viewer, Java memory space needs to be large enough (see page 19).
- With multiple instances of CA OM Web Viewer, you can deploy another server as a load balancer to dispatch requests. The load balancer must support session affinity or session stickiness to ensure that requests of the same session are directed to the same server.

Choose the appropriate configuration for your application.

System Level External Configuration

If you are using a System Level External Configuration, you must set the CAOMWV12_HOME variable (see page 107) within WebSphere. You set up a new environment variable named CAOMWV12_HOME in the Java and Process Management > Process definition > Environment Entries section of your Application Server. Then, restart your WebSphere server in order for the setting to take effect.

Important! Add CAOMWV12_HOME as an environment variable not as a property in order for CA OM Web Viewer to recognize CAOMWV12_HOME

Application Level External Configuration

When deploying using Application Level External Configuration, and you need to deploy more than one EAR file, be careful to use a different context path and application name for each web application deployed on WebSphere.

1. (Optional) Rename the CAOMWebViewer12_ear application.
2. (Required) Rename the second CAOMWebViewer12_ear application.

   Important! The application names must not match.
3. If you deploy three or more product instances, repeat Step 3 for each additional instance.

4. (Optional) Map the context paths for CAOMWebViewer12.war Web Module to a different value.

   For example, a context path of CAOMWebViewer12_US produces a web address, such as http://<server>:<port>/CAOMWebViewer12_US.

5. (Required) Map the context paths of the second CAOMWebViewer12.war Web Module to a different value.

   Important! The context paths of each CAOMWebViewer12.war Web Module must not match.

6. If you deploy three or more instances of CA OM Web Viewer, you repeat Step 5 for each additional instance.

7. Map the context path of the CA Styles R5.1.3 Web Module in the second CAOMWebViewer12_ear application to an alternate value, and keep the CA Styles R5.1.3 Web Module untouched in the first CAOMWebViewer12_ear application.

   For example, define a context path of /castylesr5.1.3_alt.

8. If you deploy three or more instances of CA OM Web Viewer, you repeat Step 7 for each additional instance.

Notes:

- When deploying multiple CA OM Web Viewer instances with different configuration on WebSphere, the class loader policy for server-specific application settings must be set to Multiple. For more information about how to set server-specific application settings, see your WebSphere documentation.
- When using different database systems with different CA OM Web Viewer instances deployed on WebSphere, WebSphere variables for specific database JDBC driver paths may be required to resolve the JDBC driver class loading. For more information about WebSphere variable settings, see your WebSphere documentation.
- For more information about WebSphere settings, see your WebSphere documentation.

Application Level Internal Configuration

Remove the CAOMWV12_HOME environment variable from within WebSphere, if it exists.

Deployment Prerequisites for Apache Tomcat

The following information describes the deployment prerequisites for Apache Tomcat.

With multiple instances of CA OM Web Viewer, you can deploy another server as a load balancer to dispatch requests. The load balancer must support session affinity or session stickiness to ensure that requests of the same session are directed to the same server.

Choose the appropriate configuration for your application:

System Level External Configuration

If you are using this configuration, set the CAOMWV12_HOME (see page 107) variable on your system.

Application Level External Configuration

The following information describes the deployment prerequisites for deploying multiple CA OM Web Viewer instances on Apache Tomcat:

Rename your WAR files before deployment, so that each CA OM Web Viewer application WAR has a different name. This WAR file name also serves as the context path in the CA OM Web Viewer application web address.

For example, a WAR file named CAOMWebViewer12_US.war produces a web address, such as http://<server>:<port>/CAOMWebViewer12_US.

Application Level Internal Configuration

Remove the CAOMWV12_HOME variable from your system, if it exists.

Verify the Environment Requirements

Before you install and configure the product on the same computer and deploy the product on multiple computers, verify the environment requirements. These requirements let all instances of the product share a common configuration.

Follow these steps:

1. Verify the configuration type (see page 37) for your environment:

   External System Level Configuration

   (Recommended) Lets you update your application easily, and then you copy the application to multiple systems, without having to reconfigure the product.

   Application Level External Configuration

   Lets you have two or more copies of the product on one Java application web server, or on one computer.

   Application Level Internal Configuration

   Your site security restrictions do not allow web applications to access files outside of the web application.

2. Verify that Java is installed so that the installer and configuration tool can run.
3. Verify your network access (JDBC over TCP/IP) to the remote database server.

   This verification lets the configuration tool test the connection. You can execute the tool without a test, but we recommend that you verify a successful connection.

4. Verify your network access (CCI over TCP/IP) to the mainframe where the primary CCI task runs.

   The configuration tool requires this access for the optional CCI connection test and the DRAS server discovery.

5. Repeat Step 2 through Step 4 on all computers that you plan to use in your environment.

   For example, to deploy the product on other computers, complete the verification steps on all computers.

Run the Product Installer

You run the installer to run the wizard in your environment. You review the introduction panel for information about the installer, review and accept the license agreement, and follow the wizard prompts.

Follow these steps:

1. Complete the appropriate steps for your environment:

   Windows

   Run CAOMWV.exe.

   Other Environments

   Use ssh or telnet to connect to USS (if ssh or telnet connection is supported). You can also use OMVS to gain access to a USS console.

   Launch CAOMWV.jar with Java:

   java -jar CAOMWV.jar

   The command java -jar assumes java is included in your PATH. Alternately, you must include the full path to the java executable in the command.

2. Review the Introduction panel for information about the Installer, and click Next.
3. Review the license agreement, and click Next.
4. Complete one of the following steps:
   - Select Minimal to install either an EAR file, or a pair of WAR files that you can deploy to your Web Application server, and click Next.
   - Select Full to install CA OM Web Viewer and Apache Tomcat with the product predeployed on the server.
5. Specify the folder where you want to install CA OM Web Viewer, and complete the remaining wizard prompts.

Launch the Configuration Tool

The configuration tool lets you change the initial settings for CA CCI, CA DRAS, LDAP, ADMINID, and your database. You can edit and change the configuration as often as necessary.

Follow these steps:

1. Verify that the Java bin folder is present in the PATH for the configuration.
2. (System Level External Configuration) To use external configuration, verify that the CAOMWV12_HOME variable (see page 107) exists.
3. Locate the configuration tool in the following directory:

   <installation_directory>/util
4. Execute the configuration tool as follows:

   Windows

   a. Set *util* as the current folder from the command prompt.

   b. Execute configtool.bat.

   Linux/UNIX

   a. Set *util* as the current folder from the console.

   b. Execute configtool.sh.

   Important! If you are using the embedded Apache Tomcat, stop Apache Tomcat before you start the configuration tool. You should not run two copies of the configuration tool at once.
5. Select your configuration type (see page 37):

   External System Level Configuration

   (Recommended) Lets you update your application easily, and then you copy the application to multiple systems, without having to reconfigure the product.

   Application Level External Configuration

   Lets you have two or more copies of the product on one Java application web server, or on one computer.

   Important! If you are using Application Level External Configuration, be sure to select a different CCI (Common Communications Interface) Client System ID for each CA OM Web Viewer on your network.

   Note: By default, the Client System ID will be a modified version of your computer name. However, if you have two instances of CA OM Web Viewer on the same computer they must each have a different Client System IDs.

   Application Level Internal Configuration

   Your site security restrictions do not allow web applications to access files outside of the web application.

6. Select the settings that you want to configure (see page 111) from the menu.

   Important! If you are running the configuration tool for the first time, for example, the initial configuration after an install, select the All Web Viewer Settings menu option.

7. Create the configuration by completing all the sections in the wizard.

   You can edit the configuration as often as necessary.

8. Exit the utility after the configuration completes.

9. (Optional) To use the configuration files on a different computer, copy them to an alternate location.

10. Restart the CA OM Web Viewer application or redeploy the application as needed for the changes to take effect.

Deploy the Product

You deploy the product after the configuration completes successfully. Deployment lets you access the installed and configured product in a web browser.

Important! After the Full install, never undeploy CA OM Web Viewer from the installed Apache Tomcat. Undeploying results in data loss, or even loss of the application. If you undeploy, you have to restore from a backup WAR file.

Follow these steps:

1. Verify that CAOMWebViewer12.war and castylesr5.1.3.war deployed.
2. Start the web application server.

   If you installed the Tomcat Java Web application server accompanying CA OM Web Viewer, launch the server in one of the following ways according to your operating environment:

   Windows

   - Click Start, Programs, CA, CA OM Web Viewer, Apache Tomcat, Startup Tomcat.
   - If you chose to register it as a Windows service, use the *Services* administration tool to find and start the service named *Tomcat7forCAOMWebViewer12*.
   - Locate the apache-tomcat folder where you installed the bundled Apache Tomcat web application server. Execute the script apache-tomcat\bin\startup.bat.

   Other operating systems

   - Locate the apache-tomcat folder where you installed the bundled Apache Tomcat web application server. Execute the script apache-tomcat/bin/startup.sh
3. Open the following URL in a web browser:

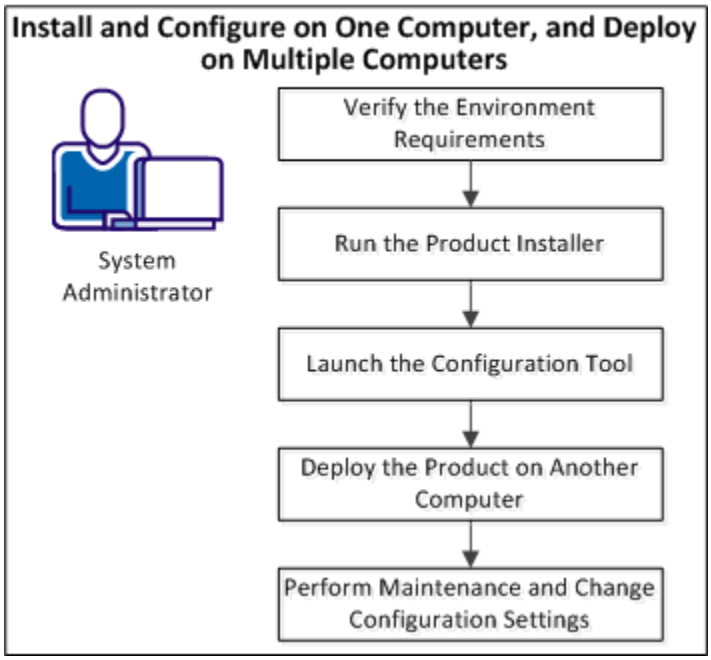
   http://hostname:port/CAOMWebViewer12
4. Log into CA OM Web Viewer to verify that the product deployed successfully.

Install and Configure on One Computer, and Deploy on Multiple Computers

As a system administrator, you want to use different computers for your CA OM Web Viewer environment. In this example, you want to install and configure the product on one computer. However, you want to deploy the product on a second computer, or many computers. We recommend this setup when you require scalability with multiple Java EE Application Servers.

Important!: Find your copy of the product installer. (See Acquiring the Product Installer (see page 31), for more information. FTP your installer to a different computer if needed.

The following diagram shows how you install and configure CA OM Web Viewer on one computer, and how you can deploy the product to secondary servers:

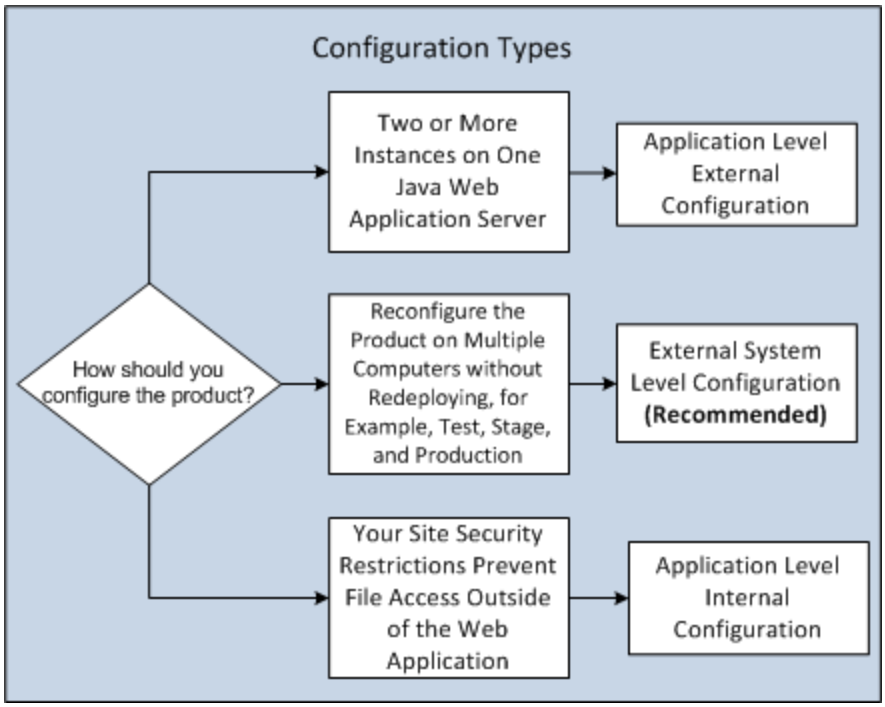


1. Verify your configuration type (see page 37), deployment prerequisites for WebSphere (see page 39) or Apache Tomcat (see page 41), and the environment requirements (see page 42).
2. Run the product installer (see page 43).
   - Select Minimal to install either an EAR file, or a pair of WAR files that you can deploy to your Web Application server, and click Next.
   - Select Full to install CA OM Web Viewer and Apache Tomcat with the product predeployed on the server.
3. Launch the configuration tool (see page 55).

4. Deploy the product on another computer (see page 56).
5. Perform maintenance and change configuration settings (see page 57).

Choosing a Configuration Type

The following diagram describes the basic configuration types:



External System Level Configuration

Lets you update your application easily, and then you copy the application to multiple systems, without having to reconfigure the product.

Your configuration files are located in a directory outside of the CA OM Web Viewer web application on the same computer. The web application reads this directory location from the CAOMWV12_HOME (see page 107) Environment Variable.

You are not required to redeploy your CA OM Web Viewer application after you modify the settings. Only a web application restart is required. This configuration option lets you update your application easily, and then copy the CA OM Web Viewer application WAR or EAR file to multiple systems, without having to reconfigure the WAR or EAR file.

Important! This configuration is recommended for most environments. However, there are certain situations when you want to use another configuration type. If you intend to run two instances of CA OM Web Viewer on one computer, do not use External System Level Configuration. Instead, use Application Level External Configuration or Application Level Internal Configuration.

Application Level External Configuration

Lets you have two or more copies of the product on one Java application web server, or on one computer.

Your configuration files are located in a directory outside of the CA OM Web Viewer web application on the same computer. The web application reads this directory location from a parameter within web.xml.

Note: In some situations, you are required to redeploy your CA OM Web Viewer application after settings changes. Often, only a web application restart is required.

Important! To deploy the product to multiple servers using application level external configuration files, use the same path to your configuration files on all servers. If you do not use the same path, you have to apply patches to each system separately. With different configuration paths on each server, you cannot apply a patch to only one EAR or WAR file, for example, on a test computer, and then copy that same EAR or WAR file to each server where you to run the product, for example, on several production computers.

Application Level Internal Configuration

Your site security restrictions do not allow web applications to access files outside of the web application.

Your configuration files are located in a directory inside of the CA OM Web Viewer web application. The web application uses the default directory within the web application.

Note: You are required to redeploy your CA OM Web Viewer application after settings changes.

Important! To deploy the product to multiple servers using internal configuration files, you have to apply patches to each system separately. With internal configuration, you cannot apply a patch to only one EAR or WAR file, for example, on a test computer, and then copy that same EAR or WAR file to each server where you to run the product, for example, on several production computers.

Deployment Prerequisites for WebSphere

Before you deploy CA OM Web Viewer on WebSphere, verify that you applied all fixes for the WebSphere server.

To deploy as a WAR file on WebSphere, set the Class loader order to *Classes loaded with local class loader first (parent last)* at both the module, and application level, in order to load libraries within the CA OM Web Viewer package first.

Notes:

- If you selected to produce an EAR file during installation, this setting is included in the EAR file automatically, so you can deploy this EAR file on WebSphere without changing this setting.
- For a web server to host multiple instances of CA OM Web Viewer, Java memory space needs to be large enough (see page 19).
- With multiple instances of CA OM Web Viewer, you can deploy another server as a load balancer to dispatch requests. The load balancer must support session affinity or session stickiness to ensure that requests of the same session are directed to the same server.

Choose the appropriate configuration for your application.

System Level External Configuration

If you are using a System Level External Configuration, you must set the CAOMWV12_HOME variable (see page 107) within WebSphere. You set up a new environment variable named CAOMWV12_HOME in the Java and Process Management > Process definition > Environment Entries section of your Application Server. Then, restart your WebSphere server in order for the setting to take effect.

Important! Add CAOMWV12_HOME as an environment variable not as a property in order for CA OM Web Viewer to recognize CAOMWV12_HOME

Application Level External Configuration

When deploying using Application Level External Configuration, and you need to deploy more than one EAR file, be careful to use a different context path and application name for each web application deployed on WebSphere.

1. (Optional) Rename the CAOMWebViewer12_ear application.
2. (Required) Rename the second CAOMWebViewer12_ear application.

   Important! The application names must not match.
3. If you deploy three or more product instances, repeat Step 3 for each additional instance.

4. (Optional) Map the context paths for CAOMWebViewer12.war Web Module to a different value.

   For example, a context path of CAOMWebViewer12_US produces a web address, such as http://<server>:<port>/CAOMWebViewer12_US.

5. (Required) Map the context paths of the second CAOMWebViewer12.war Web Module to a different value.

   Important! The context paths of each CAOMWebViewer12.war Web Module must not match.

6. If you deploy three or more instances of CA OM Web Viewer, you repeat Step 5 for each additional instance.

7. Map the context path of the CA Styles R5.1.3 Web Module in the second CAOMWebViewer12_ear application to an alternate value, and keep the CA Styles R5.1.3 Web Module untouched in the first CAOMWebViewer12_ear application.

   For example, define a context path of /castylesr5.1.3_alt.

8. If you deploy three or more instances of CA OM Web Viewer, you repeat Step 7 for each additional instance.

Notes:

- When deploying multiple CA OM Web Viewer instances with different configuration on WebSphere, the class loader policy for server-specific application settings must be set to Multiple. For more information about how to set server-specific application settings, see your WebSphere documentation.
- When using different database systems with different CA OM Web Viewer instances deployed on WebSphere, WebSphere variables for specific database JDBC driver paths may be required to resolve the JDBC driver class loading. For more information about WebSphere variable settings, see your WebSphere documentation.
- For more information about WebSphere settings, see your WebSphere documentation.

Application Level Internal Configuration

Remove the CAOMWV12_HOME environment variable from within WebSphere, if it exists.

Deployment Prerequisites for Apache Tomcat

The following information describes the deployment prerequisites for Apache Tomcat.

With multiple instances of CA OM Web Viewer, you can deploy another server as a load balancer to dispatch requests. The load balancer must support session affinity or session stickiness to ensure that requests of the same session are directed to the same server.

Choose the appropriate configuration for your application:

System Level External Configuration

If you are using this configuration, set the CAOMWV12_HOME (see page 107) variable on your system.

Application Level External Configuration

The following information describes the deployment prerequisites for deploying multiple CA OM Web Viewer instances on Apache Tomcat:

Rename your WAR files before deployment, so that each CA OM Web Viewer application WAR has a different name. This WAR file name also serves as the context path in the CA OM Web Viewer application web address.

For example, a WAR file named CAOMWebViewer12_US.war produces a web address, such as http://<server>:<port>/CAOMWebViewer12_US.

Application Level Internal Configuration

Remove the CAOMWV12_HOME variable from your system, if it exists.

Verify the Environment Requirements

Before you install and configure the product on the same computer and deploy the product on multiple computers, verify the environment requirements. These requirements let all instances of the product share a common configuration.

Follow these steps:

1. Verify the configuration type (see page 37) for your environment:

   External System Level Configuration

   (Recommended) Lets you update your application easily, and then you copy the application to multiple systems, without having to reconfigure the product.

   Application Level External Configuration

   Lets you have two or more copies of the product on one Java application web server, or on one computer.

   Application Level Internal Configuration

   Your site security restrictions do not allow web applications to access files outside of the web application.

2. Verify that Java is installed so that the installer and configuration tool can run.
3. Verify your network access (JDBC over TCP/IP) to the remote database server.

   This verification lets the configuration tool test the connection. You can execute the tool without a test, but we recommend that you verify a successful connection.

4. Verify your network access (CCI over TCP/IP) to the mainframe where the primary CCI task runs.

   The configuration tool requires this access for the optional CCI connection test and the DRAS server discovery.

5. Repeat Step 2 through Step 4 on all computers that you plan to use in your environment.

   For example, to deploy the product on other computers, complete the verification steps on all computers.

Run the Product Installer

You run the installer to run the wizard in your environment. You review the introduction panel for information about the installer, review and accept the license agreement, and follow the wizard prompts.

Follow these steps:

1. Complete the appropriate steps for your environment:

   Windows

   Run CAOMWV.exe.

   Other Environments

   Use ssh or telnet to connect to USS (if ssh or telnet connection is supported). You can also use OMVS to gain access to a USS console.

   Launch CAOMWV.jar with Java:

   java -jar CAOMWV.jar

   The command java -jar assumes java is included in your PATH. Alternately, you must include the full path to the java executable in the command.

2. Review the Introduction panel for information about the Installer, and click Next.
3. Review the license agreement, and click Next.
4. Complete one of the following steps:
   - Select Minimal to install either an EAR file, or a pair of WAR files that you can deploy to your Web Application server, and click Next.
   - Select Full to install CA OM Web Viewer and Apache Tomcat with the product predeployed on the server.
5. Specify the folder where you want to install CA OM Web Viewer, and complete the remaining wizard prompts.

Launch the Configuration Tool

In this example, all product instances share this configuration. The configuration tool lets you change the initial settings for CA CCI, CA DRAS, LDAP, ADMINID, and your database. You can edit and change the configuration as often as necessary.

Follow these steps:

1. Verify that the Java bin folder is present in the PATH for the configuration.
2. (System Level External Configuration) To use external configuration, verify that the CAOMWV12_HOME variable (see page 107) exists.
3. Locate the configuration tool in the following directory:

   <installation_directory>/util
4. Execute the configuration tool as follows:

   Windows

   a. Set *util* as the current folder from the command prompt.

   b. Execute configtool.bat.

   Linux/UNIX

   a. Set *util* as the current folder from the console.

   b. Execute configtool.sh.

   Important! If you are using the embedded Apache Tomcat, stop Apache Tomcat before you start the configuration tool. You should not run two copies of the configuration tool at once.
5. Select your configuration type (see page 37):

   External System Level Configuration

   (Recommended) Lets you update your application easily, and then you copy the application to multiple systems, without having to reconfigure the product.

   Application Level External Configuration

   Lets you have two or more copies of the product on one Java application web server, or on one computer.

   Important! If you are using Application Level External Configuration, be sure to select a different CCI (Common Communications Interface) Client System ID for each CA OM Web Viewer on your network.

   Note: By default, the Client System ID will be a modified version of your computer name. However, if you have two instances of CA OM Web Viewer on the same computer they must each have a different Client System IDs.

   Application Level Internal Configuration

   Your site security restrictions do not allow web applications to access files outside of the web application.

6. Select the settings that you want to configure (see page 111) from the menu.

   Important! If you are running the configuration tool for the first time, for example, the initial configuration after an install, select the All Web Viewer Settings menu option.

7. Create the configuration by completing all the sections in the wizard.

   You can edit the configuration as often as necessary.

8. Exit the utility after the configuration completes.

9. (Optional) To use the configuration files on a different computer, copy them to an alternate location.

10. Restart the CA OM Web Viewer application or redeploy the application as needed for the changes to take effect.

Deploy the Product on Another Computer

You want to prepare the second computer for the deployment of the product. You can deploy the product on multiple computers, and these computers share a common configuration. You set up a directory, create an environment variable, and copy files from the computer where you installed CA OM Web Viewer.

Follow these steps:

1. Create the following folder for the product files:

   CA_OM_Web_Viewer

2. Create a system environment variable named CAOMWV12_HOME.

3. Set the value of the variable to the full file path of CA_OM_Web_Viewer.

   For example, C:\Program Files\CA\CA_OM_Web_Viewer.

4. Copy the following folders from the computer where you installed the product.

   System-Level External Configuration

   <install_folder>\config

   <install_folder>\deployable

   <install_folder>\logs

Application-Level External Configuration

<install_folder>\<Application_Context>\config

<install_folder>\<Application_Context>\deployable

<install_folder>\<Application_Context>\logs

5. Deploy the two WAR files or one EAR file (from the deployable folder) to the Java web application server on the second computer.
6. Repeat Steps 1 through 5, if you have multiple secondary computers.
7. Start the web application server.
8. Open the following URL in a web browser and log in to the deployed product:

   http://hostname:port/CAOMWebViewer12

Perform Maintenance and Change Configuration Settings

Product environments go through changes, such as after applying server maintenance. When changes happen, you want to apply the changes to all computers using the same configuration settings

Follow these steps:

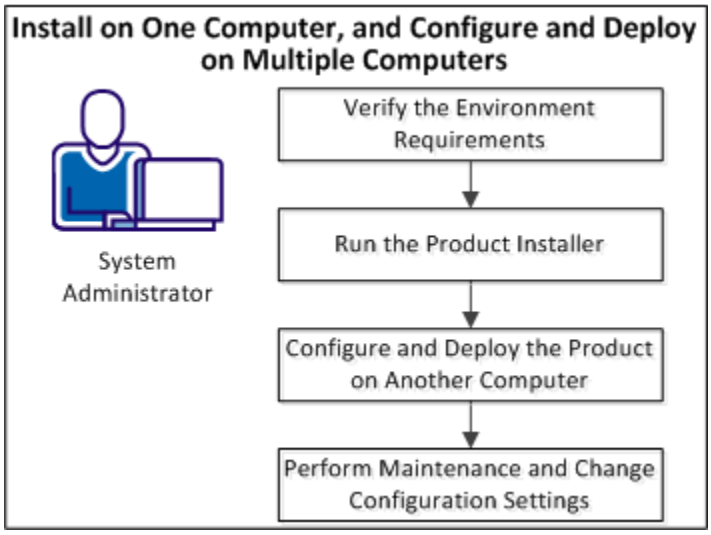
1. Refresh the contents of the deployable folder, if you applied a fix to your first computer.
2. Redeploy the WAR or EAR file on the secondary computers.
3. Refresh the contents of the configuration folder on the secondary computers, if you used the configuration tool to change some settings.
4. Restart the CAOMWebViewer12 application with the Java web application server, to ensure that the servers pick up your settings

Install on One Computer, and Configure and Deploy on Multiple Computers

As a system administrator, you want to use multiple computers for your CA OM Web Viewer environment. In this example, you want to install the product on one computer as a test system. However, you want to configure and deploy the product on secondary computers as the production systems. You configure each secondary computer independently.

Important!: Find your copy of the product installer. (See Acquiring the Product Installer (see page 31), for more information. FTP your installer to a different computer if needed.

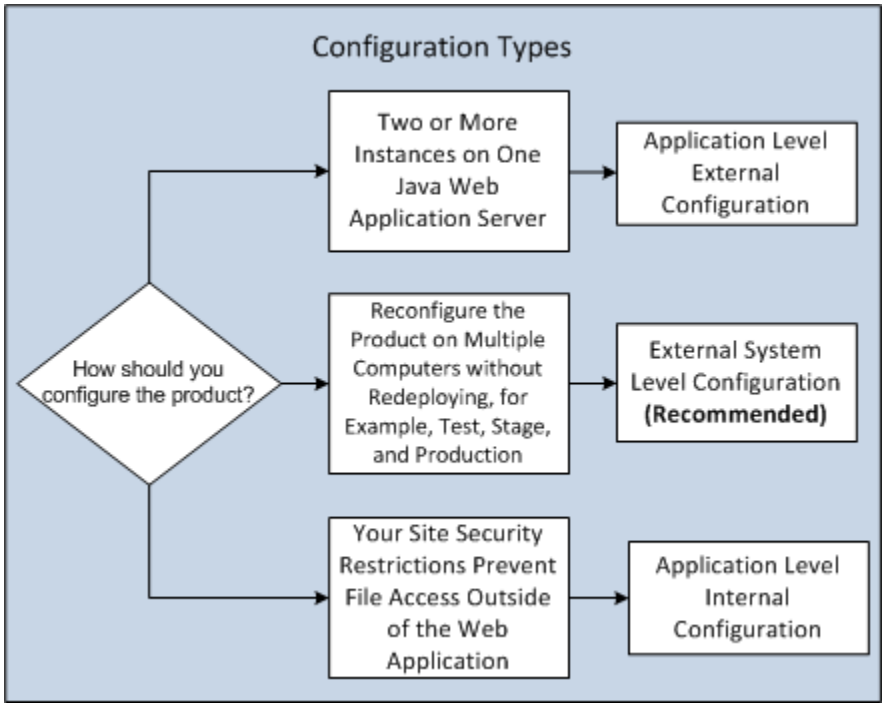
The following diagram shows how you install CA OM Web Viewer on one computer, and then you configure and deploy the product on secondary computers.



1. Verify your configuration type (see page 37), deployment prerequisites for WebSphere (see page 39) or Apache Tomcat (see page 41), and the environment requirements (see page 42).
2. Run the product installer (see page 43).
   - Select Minimal to install either an EAR file, or a pair of WAR files that you can deploy to your Web Application server, and click Next.
   - Select Full to install CA OM Web Viewer and Apache Tomcat with the product predeployed on the server.
3. Configure and deploy the product on another computer (see page 66).
4. Perform maintenance and change configuration settings (see page 57).

Choosing a Configuration Type

The following diagram describes the basic configuration types:



External System Level Configuration

Lets you update your application easily, and then you copy the application to multiple systems, without having to reconfigure the product.

Your configuration files are located in a directory outside of the CA OM Web Viewer web application on the same computer. The web application reads this directory location from the CAOMWV12_HOME (see page 107) Environment Variable.

You are not required to redeploy your CA OM Web Viewer application after you modify the settings. Only a web application restart is required. This configuration option lets you update your application easily, and then copy the CA OM Web Viewer application WAR or EAR file to multiple systems, without having to reconfigure the WAR or EAR file.

Important! This configuration is recommended for most environments. However, there are certain situations when you want to use another configuration type. If you intend to run two instances of CA OM Web Viewer on one computer, do not use External System Level Configuration. Instead, use Application Level External Configuration or Application Level Internal Configuration.

Application Level External Configuration

Lets you have two or more copies of the product on one Java application web server, or on one computer.

Your configuration files are located in a directory outside of the CA OM Web Viewer web application on the same computer. The web application reads this directory location from a parameter within web.xml.

Note: In some situations, you are required to redeploy your CA OM Web Viewer application after settings changes. Often, only a web application restart is required.

Important! To deploy the product to multiple servers using application level external configuration files, use the same path to your configuration files on all servers. If you do not use the same path, you have to apply patches to each system separately. With different configuration paths on each server, you cannot apply a patch to only one EAR or WAR file, for example, on a test computer, and then copy that same EAR or WAR file to each server where you to run the product, for example, on several production computers.

Application Level Internal Configuration

Your site security restrictions do not allow web applications to access files outside of the web application.

Your configuration files are located in a directory inside of the CA OM Web Viewer web application. The web application uses the default directory within the web application.

Note: You are required to redeploy your CA OM Web Viewer application after settings changes.

Important! To deploy the product to multiple servers using internal configuration files, you have to apply patches to each system separately. With internal configuration, you cannot apply a patch to only one EAR or WAR file, for example, on a test computer, and then copy that same EAR or WAR file to each server where you to run the product, for example, on several production computers.

Deployment Prerequisites for WebSphere

Before you deploy CA OM Web Viewer on WebSphere, verify that you applied all fixes for the WebSphere server.

To deploy as a WAR file on WebSphere, set the Class loader order to *Classes loaded with local class loader first (parent last)* at both the module, and application level, in order to load libraries within the CA OM Web Viewer package first.

Notes:

- If you selected to produce an EAR file during installation, this setting is included in the EAR file automatically, so you can deploy this EAR file on WebSphere without changing this setting.
- For a web server to host multiple instances of CA OM Web Viewer, Java memory space needs to be large enough (see page 19).
- With multiple instances of CA OM Web Viewer, you can deploy another server as a load balancer to dispatch requests. The load balancer must support session affinity or session stickiness to ensure that requests of the same session are directed to the same server.

Choose the appropriate configuration for your application.

System Level External Configuration

If you are using a System Level External Configuration, you must set the CAOMWV12_HOME variable (see page 107) within WebSphere. You set up a new environment variable named CAOMWV12_HOME in the Java and Process Management > Process definition > Environment Entries section of your Application Server. Then, restart your WebSphere server in order for the setting to take effect.

Important! Add CAOMWV12_HOME as an environment variable not as a property in order for CA OM Web Viewer to recognize CAOMWV12_HOME

Application Level External Configuration

When deploying using Application Level External Configuration, and you need to deploy more than one EAR file, be careful to use a different context path and application name for each web application deployed on WebSphere.

1. (Optional) Rename the CAOMWebViewer12_ear application.
2. (Required) Rename the second CAOMWebViewer12_ear application.

   Important! The application names must not match.
3. If you deploy three or more product instances, repeat Step 3 for each additional instance.

4. (Optional) Map the context paths for CAOMWebViewer12.war Web Module to a different value.

   For example, a context path of CAOMWebViewer12_US produces a web address, such as http://<server>:<port>/CAOMWebViewer12_US.

5. (Required) Map the context paths of the second CAOMWebViewer12.war Web Module to a different value.

   Important! The context paths of each CAOMWebViewer12.war Web Module must not match.

6. If you deploy three or more instances of CA OM Web Viewer, you repeat Step 5 for each additional instance.

7. Map the context path of the CA Styles R5.1.3 Web Module in the second CAOMWebViewer12_ear application to an alternate value, and keep the CA Styles R5.1.3 Web Module untouched in the first CAOMWebViewer12_ear application.

   For example, define a context path of /castylesr5.1.3_alt.

8. If you deploy three or more instances of CA OM Web Viewer, you repeat Step 7 for each additional instance.

Notes:

- When deploying multiple CA OM Web Viewer instances with different configuration on WebSphere, the class loader policy for server-specific application settings must be set to Multiple. For more information about how to set server-specific application settings, see your WebSphere documentation.
- When using different database systems with different CA OM Web Viewer instances deployed on WebSphere, WebSphere variables for specific database JDBC driver paths may be required to resolve the JDBC driver class loading. For more information about WebSphere variable settings, see your WebSphere documentation.
- For more information about WebSphere settings, see your WebSphere documentation.

Application Level Internal Configuration

Remove the CAOMWV12_HOME environment variable from within WebSphere, if it exists.

Deployment Prerequisites for Apache Tomcat

The following information describes the deployment prerequisites for Apache Tomcat.

With multiple instances of CA OM Web Viewer, you can deploy another server as a load balancer to dispatch requests. The load balancer must support session affinity or session stickiness to ensure that requests of the same session are directed to the same server.

Choose the appropriate configuration for your application:

System Level External Configuration

If you are using this configuration, set the CAOMWV12_HOME (see page 107) variable on your system.

Application Level External Configuration

The following information describes the deployment prerequisites for deploying multiple CA OM Web Viewer instances on Apache Tomcat:

Rename your WAR files before deployment, so that each CA OM Web Viewer application WAR has a different name. This WAR file name also serves as the context path in the CA OM Web Viewer application web address.

For example, a WAR file named CAOMWebViewer12_US.war produces a web address, such as http://<server>:<port>/CAOMWebViewer12_US.

Application Level Internal Configuration

Remove the CAOMWV12_HOME variable from your system, if it exists.

Verify the Environment Requirements

Before you install and configure the product on the same computer and deploy the product on multiple computers, verify the environment requirements. These requirements let all instances of the product share a common configuration.

Follow these steps:

1. Verify the configuration type (see page 37) for your environment:

   External System Level Configuration

   (Recommended) Lets you update your application easily, and then you copy the application to multiple systems, without having to reconfigure the product.

   Application Level External Configuration

   Lets you have two or more copies of the product on one Java application web server, or on one computer.

   Application Level Internal Configuration

   Your site security restrictions do not allow web applications to access files outside of the web application.

2. Verify that Java is installed so that the installer and configuration tool can run.
3. Verify your network access (JDBC over TCP/IP) to the remote database server.

   This verification lets the configuration tool test the connection. You can execute the tool without a test, but we recommend that you verify a successful connection.

4. Verify your network access (CCI over TCP/IP) to the mainframe where the primary CCI task runs.

   The configuration tool requires this access for the optional CCI connection test and the DRAS server discovery.

5. Repeat Step 2 through Step 4 on all computers that you plan to use in your environment.

   For example, to deploy the product on other computers, complete the verification steps on all computers.

Run the Product Installer

You run the installer to run the wizard in your environment. You review the introduction panel for information about the installer, review and accept the license agreement, and follow the wizard prompts.

Follow these steps:

1. Complete the appropriate steps for your environment:

   Windows

   Run CAOMWV.exe.

   Other Environments

   Use ssh or telnet to connect to USS (if ssh or telnet connection is supported). You can also use OMVS to gain access to a USS console.

   Launch CAOMWV.jar with Java:

   java -jar CAOMWV.jar

   The command java -jar assumes java is included in your PATH. Alternately, you must include the full path to the java executable in the command.

2. Review the Introduction panel for information about the Installer, and click Next.
3. Review the license agreement, and click Next.
4. Complete one of the following steps:
   - Select Minimal to install either an EAR file, or a pair of WAR files that you can deploy to your Web Application server, and click Next.
   - Select Full to install CA OM Web Viewer and Apache Tomcat with the product predeployed on the server.
5. Specify the folder where you want to install CA OM Web Viewer, and complete the remaining wizard prompts.

Configure and Deploy the Product on Another Computer

You want to prepare the second computer for the configuration and deployment of the product. You can configure and deploy the product on multiple computers with independent configurations. You set up a directory, create an environment variable, and copy files from the computer where you installed CA OM Web Viewer.

Follow these steps:

1. Create the following folder for the product files:

   CA_OM_Web_Viewer

2. Create a system environment variable named CAOMWV12_HOME.
3. Set the value of the variable to the full file path of CA_OM_Web_Viewer.

   For example, C:\Program Files\CA\CA_OM_Web_Viewer.

4. Copy the following folders from the computer where you installed the product.

   <install_folder>\config

   <install_folder>\deployable

   <install_folder>\logs

   <install_folder>\util

5. Locate the configuration tool in the following directory on the second computer:

   <install_folder>\util

6. Execute the configuration tool (see page 44) as follows:

   Windows

   Set *util* as the current folder from the command prompt and execute configtool.bat.

   Linux/UNIX

   Set *util* as the current folder from the console and execute configtool.sh.

7. Select All Web Viewer Settings from the menu.
8. Deploy the two WAR files or one EAR file (from the deployable folder) to the Java web application server on the second computer.
9. Repeat Steps 1 through 6 for each computer, if you have multiple secondary computers.
10. Start the web application server.
11. Open the following URL in a web browser and log in to the deployed product:

    http://hostname:port/CAOMWebViewer12

Perform Maintenance and Change Configuration Settings

Product environments go through changes, such as server maintenance, and you want to apply a fix to all computers. You also want to modify the configuration settings on the secondary computers.

Follow these steps:

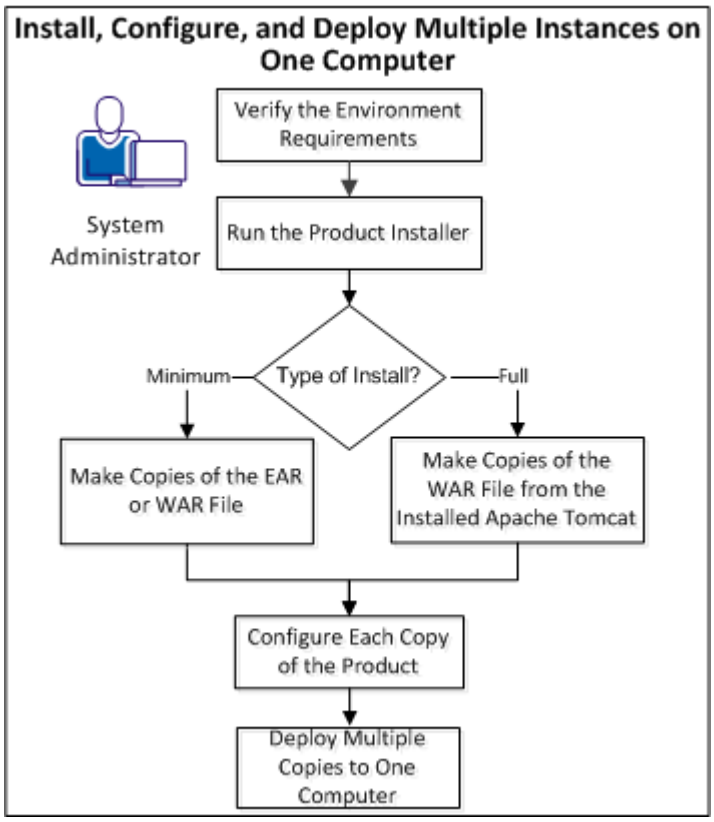
1. Refresh the contents of the deployable folder, if you applied a fix to your first computer.
2. Redeploy the WAR or EAR file on the secondary computers.
3. Refresh the contents of the *config* and *util* folders on the secondary computers, if you used the configuration tool to change some settings.
4. Restart the CAOMWebViewer12 application with the Java web application server, to ensure that the servers pick up your settings.

Install, Configure, and Deploy Multiple Instances on One Computer

As a system administrator, you want to install multiple instances on one computer using the installed Tomcat or another Java web application server.

Important! Find your copy of the product installer. (See Acquiring the Product Installer (see page 31), for more information. FTP your installer to a different computer if needed.

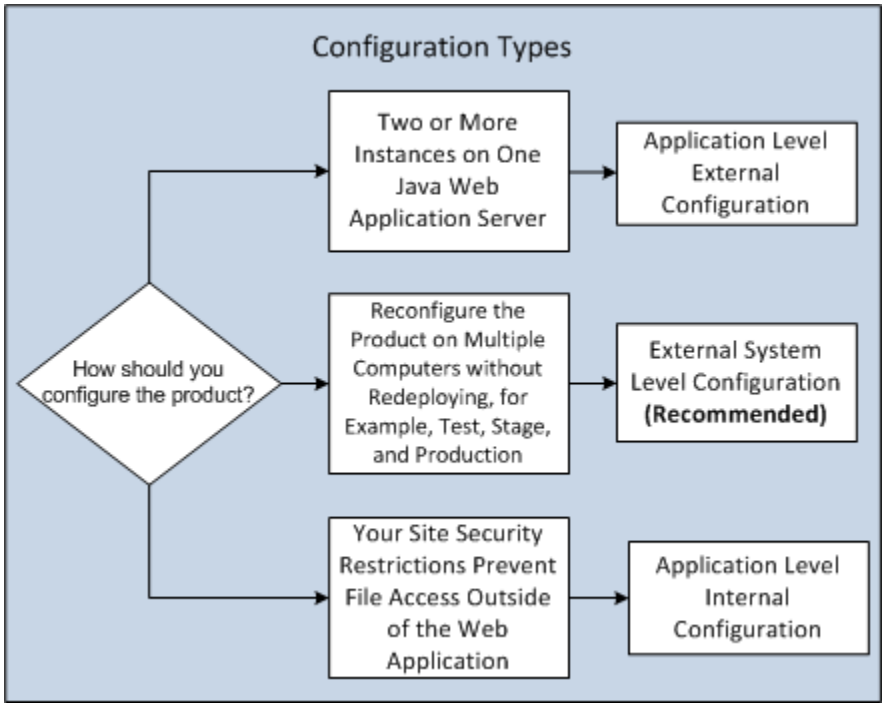
The following diagram shows how you install multiple instances:



1. Verify your configuration type (see page 37), deployment prerequisites for WebSphere (see page 39) or Apache Tomcat (see page 41), and the environment requirements (see page 42).
2. Run the product installer (see page 43).
3. Complete one of the following steps:
   - For a Minimal install, make copies of the EAR or WAR file (see page 77) (deployable folder).
   - For a Full install, make copies of the WAR file from the installed Apache Tomcat (see page 78) (webapps folder).
4. Configure each copy of the product (see page 93).
5. Deploy multiple copies to one computer (see page 80).

Choosing a Configuration Type

The following diagram describes the basic configuration types:



External System Level Configuration

Lets you update your application easily, and then you copy the application to multiple systems, without having to reconfigure the product.

Your configuration files are located in a directory outside of the CA OM Web Viewer web application on the same computer. The web application reads this directory location from the CAOMWV12_HOME (see page 107) Environment Variable.

You are not required to redeploy your CA OM Web Viewer application after you modify the settings. Only a web application restart is required. This configuration option lets you update your application easily, and then copy the CA OM Web Viewer application WAR or EAR file to multiple systems, without having to reconfigure the WAR or EAR file.

Important! This configuration is recommended for most environments. However, there are certain situations when you want to use another configuration type. If you intend to run two instances of CA OM Web Viewer on one computer, do not use External System Level Configuration. Instead, use Application Level External Configuration or Application Level Internal Configuration.

Application Level External Configuration

Lets you have two or more copies of the product on one Java application web server, or on one computer.

Your configuration files are located in a directory outside of the CA OM Web Viewer web application on the same computer. The web application reads this directory location from a parameter within web.xml.

Note: In some situations, you are required to redeploy your CA OM Web Viewer application after settings changes. Often, only a web application restart is required.

Important! To deploy the product to multiple servers using application level external configuration files, use the same path to your configuration files on all servers. If you do not use the same path, you have to apply patches to each system separately. With different configuration paths on each server, you cannot apply a patch to only one EAR or WAR file, for example, on a test computer, and then copy that same EAR or WAR file to each server where you to run the product, for example, on several production computers.

Application Level Internal Configuration

Your site security restrictions do not allow web applications to access files outside of the web application.

Your configuration files are located in a directory inside of the CA OM Web Viewer web application. The web application uses the default directory within the web application.

Note: You are required to redeploy your CA OM Web Viewer application after settings changes.

Important! To deploy the product to multiple servers using internal configuration files, you have to apply patches to each system separately. With internal configuration, you cannot apply a patch to only one EAR or WAR file, for example, on a test computer, and then copy that same EAR or WAR file to each server where you to run the product, for example, on several production computers.

Deployment Prerequisites for WebSphere

Before you deploy CA OM Web Viewer on WebSphere, verify that you applied all fixes for the WebSphere server.

To deploy as a WAR file on WebSphere, set the Class loader order to *Classes loaded with local class loader first (parent last)* at both the module, and application level, in order to load libraries within the CA OM Web Viewer package first.

Notes:

- If you selected to produce an EAR file during installation, this setting is included in the EAR file automatically, so you can deploy this EAR file on WebSphere without changing this setting.
- For a web server to host multiple instances of CA OM Web Viewer, Java memory space needs to be large enough (see page 19).
- With multiple instances of CA OM Web Viewer, you can deploy another server as a load balancer to dispatch requests. The load balancer must support session affinity or session stickiness to ensure that requests of the same session are directed to the same server.

Choose the appropriate configuration for your application.

System Level External Configuration

If you are using a System Level External Configuration, you must set the CAOMWV12_HOME variable (see page 107) within WebSphere. You set up a new environment variable named CAOMWV12_HOME in the Java and Process Management > Process definition > Environment Entries section of your Application Server. Then, restart your WebSphere server in order for the setting to take effect.

Important! Add CAOMWV12_HOME as an environment variable not as a property in order for CA OM Web Viewer to recognize CAOMWV12_HOME

Application Level External Configuration

When deploying using Application Level External Configuration, and you need to deploy more than one EAR file, be careful to use a different context path and application name for each web application deployed on WebSphere.

1. (Optional) Rename the CAOMWebViewer12_ear application.
2. (Required) Rename the second CAOMWebViewer12_ear application.

   Important! The application names must not match.
3. If you deploy three or more product instances, repeat Step 3 for each additional instance.

4. (Optional) Map the context paths for CAOMWebViewer12.war Web Module to a different value.

   For example, a context path of CAOMWebViewer12_US produces a web address, such as http://<server>:<port>/CAOMWebViewer12_US.

5. (Required) Map the context paths of the second CAOMWebViewer12.war Web Module to a different value.

   Important! The context paths of each CAOMWebViewer12.war Web Module must not match.

6. If you deploy three or more instances of CA OM Web Viewer, you repeat Step 5 for each additional instance.

7. Map the context path of the CA Styles R5.1.3 Web Module in the second CAOMWebViewer12_ear application to an alternate value, and keep the CA Styles R5.1.3 Web Module untouched in the first CAOMWebViewer12_ear application.

   For example, define a context path of /castylesr5.1.3_alt.

8. If you deploy three or more instances of CA OM Web Viewer, you repeat Step 7 for each additional instance.

Notes:

- When deploying multiple CA OM Web Viewer instances with different configuration on WebSphere, the class loader policy for server-specific application settings must be set to Multiple. For more information about how to set server-specific application settings, see your WebSphere documentation.
- When using different database systems with different CA OM Web Viewer instances deployed on WebSphere, WebSphere variables for specific database JDBC driver paths may be required to resolve the JDBC driver class loading. For more information about WebSphere variable settings, see your WebSphere documentation.
- For more information about WebSphere settings, see your WebSphere documentation.

Application Level Internal Configuration

Remove the CAOMWV12_HOME environment variable from within WebSphere, if it exists.

Deployment Prerequisites for Apache Tomcat

The following information describes the deployment prerequisites for Apache Tomcat.

With multiple instances of CA OM Web Viewer, you can deploy another server as a load balancer to dispatch requests. The load balancer must support session affinity or session stickiness to ensure that requests of the same session are directed to the same server.

Choose the appropriate configuration for your application:

System Level External Configuration

If you are using this configuration, set the CAOMWV12_HOME (see page 107) variable on your system.

Application Level External Configuration

The following information describes the deployment prerequisites for deploying multiple CA OM Web Viewer instances on Apache Tomcat:

Rename your WAR files before deployment, so that each CA OM Web Viewer application WAR has a different name. This WAR file name also serves as the context path in the CA OM Web Viewer application web address.

For example, a WAR file named CAOMWebViewer12_US.war produces a web address, such as http://<server>:<port>/CAOMWebViewer12_US.

Application Level Internal Configuration

Remove the CAOMWV12_HOME variable from your system, if it exists.

Verify the Environment Requirements

Before you install and configure the product on the same computer and deploy the product on multiple computers, verify the environment requirements. These requirements let all instances of the product share a common configuration.

Follow these steps:

1. Verify the configuration type (see page 37) for your environment:

   External System Level Configuration

   (Recommended) Lets you update your application easily, and then you copy the application to multiple systems, without having to reconfigure the product.

   Application Level External Configuration

   Lets you have two or more copies of the product on one Java application web server, or on one computer.

   Application Level Internal Configuration

   Your site security restrictions do not allow web applications to access files outside of the web application.

2. Verify that Java is installed so that the installer and configuration tool can run.
3. Verify your network access (JDBC over TCP/IP) to the remote database server.

   This verification lets the configuration tool test the connection. You can execute the tool without a test, but we recommend that you verify a successful connection.

4. Verify your network access (CCI over TCP/IP) to the mainframe where the primary CCI task runs.

   The configuration tool requires this access for the optional CCI connection test and the DRAS server discovery.

5. Repeat Step 2 through Step 4 on all computers that you plan to use in your environment.

   For example, to deploy the product on other computers, complete the verification steps on all computers.

Run the Product Installer

You run the installer to run the wizard in your environment. You review the introduction panel for information about the installer, review and accept the license agreement, and follow the wizard prompts.

Follow these steps:

1. Complete the appropriate steps for your environment:

   Windows

   Run CAOMWV.exe.

   Other Environments

   Use ssh or telnet to connect to USS (if ssh or telnet connection is supported). You can also use OMVS to gain access to a USS console.

   Launch CAOMWV.jar with Java:

   java -jar CAOMWV.jar

   The command java -jar assumes java is included in your PATH. Alternately, you must include the full path to the java executable in the command.

2. Review the Introduction panel for information about the Installer, and click Next.
3. Review the license agreement, and click Next.
4. Complete one of the following steps:
   - Select Minimal to install either an EAR file, or a pair of WAR files that you can deploy to your Web Application server, and click Next.
   - Select Full to install CA OM Web Viewer and Apache Tomcat with the product predeployed on the server.
5. Specify the folder where you want to install CA OM Web Viewer, and complete the remaining wizard prompts.

Make Copies of the WAR or EAR File

If you want to run more than one copy of the product on the same Java Application Web Server, you make other copies of the CAOMWebViewer12 EAR or CAOMWebViewer12 WAR file.

Note: You do not need to make extra copies of the castylesr5.1.3.war file.

Follow these steps:

1. (Minimal Install Only) Go to the deployable folder:

   <installation_folder>/deployable

2. Copy the CAOMWebViewer12.war or CAOMWebViewer12.ear file.
3. Rename the copied file to CAOMWebViewer12_B.war or CAOMWebViewer12_B.ear.
   - You can use different names, but do not include any special characters or spaces in the name. Valid characters include A-Z, a-z, and 0-9.
   - The name of the WAR file also serves as your context path.
   - The name of the EAR file is less important, because it does not affect your context path. You can change the context path of that application during the product deployment.
4. (Recommended) Keep the WAR and EAR files in the deployable directory for future use.

   Note: You may need to apply fixes to the files, or deploy those same files to more than one computer when your environment or configuration changes.

More information:

Deployment Prerequisites for WebSphere (see page 39)
Deployment Prerequisites for Apache Tomcat (see page 41)More information:
Deployment Prerequisites for WebSphere (see page 39)
Deployment Prerequisites for Apache Tomcat (see page 41)

Make Copies of the WAR File from the Installed Apache Tomcat

If you want to run more than one copy of the product on the same Java Application Web Server, you make other copies of the CAOMWebViewer12 WAR file from the installed Apache Tomcat.

Note: You do not need to make extra copies of the castylesr5.1.3.war file.

Follow these steps:

1. (Full Install Only) Go to the webapps folder:

   <apache_install>/webapps/

   Default folder:

   <installation_folder>/apache_tomcat-#.#.##/webapps/

2. Copy the CAOMWebViewer12.war file.
3. Rename the copied file to CAOMWebViewer12_B.war.
   - You can use different names, but do not include any special characters or spaces in the name. Valid characters include A-Z, a-z, and 0-9.
   - The name of the WAR file also serves as your context path.
4. (Recommended) Keep the WAR file in the webapps directory for future use.

   Note: You may need to apply fixes to the files, or deploy those same files to more than one computer when your environment or configuration changes.

Configure Each Copy of the Product

You must configure each of the WAR files that you created separately. This environment setup requires application-level external configuration.

Follow these steps:

1. Verify that the CAOMWV12_HOME variable (see page 107) exists, if you want to use external configuration.
2. Locate the configuration tool in the following directory:

   <installation_directory>/util
3. Execute the configuration tool as follows:

   Windows

   a. Set *util* as the current folder from the command prompt.

   b. Execute configtool.bat.

   Linux/UNIX

   a. Set *util* as the current folder from the console.

   b. Execute configtool.sh.
4. Select Application Level External Configuration as your configuration type (see page 37).

   This configuration lets you have two or more copies of the product on one Java application web server, or on one computer.
5. Select a different Application Level External Configuration location for each WAR file.
6. Select the settings that you want to configure (see page 111) from the menu.

   Important! If you are running the configuration tool for the first time, for example, the initial configuration after an install, select the All Web Viewer Settings menu option. Be sure to select a different [CCI (Common Communications Interface) Client System ID] for each CA OM Web Viewer on your network. Note, by default, the Client System ID will be a modified version of your computer name. If you have two instances of CA OM Web Viewer on the same computer they must each have a different Client System IDs.
7. Create the configuration by completing all the sections in the wizard.

   You can edit the configuration as often as necessary.
8. Exit the utility after the configuration completes.
9. (Optional) Copy configuration files to an alternate location, if you want to use the configuration files on a different computer.
10. Restart the CA OM Web Viewer application or redeploy the application as needed, for the changes to take effect.

Deploy Multiple Copies to One Computer

You must deploy each copy of the WAR or EAR file that you created (see page 77).

Follow these steps:

For the embedded Apache Tomcat

Start your Java EE Application Server.

Note: The WAR files are predeployed on Apache Tomcat.

For WAR Files Deployment

1. If you are deploying more than one copy of the CAOMWebViewer12.war file to Apache Tomcat (see page 41), you do not deploy additional copies of the castylesr5.1.3.war file.
2. Rename your WAR files before deployment, so that each CA OM Web Viewer application WAR has a different name. This WAR file name also serves as the context path in the CA OM Web Viewer application web address.

   For example, a WAR named CAOMWebViewer12_US.war produces a web address, such as http://<server>:<port>/CAOMWebViewer12_US.

   Note: For more information about deploying to Apache Tomcat or context paths with Application Level External Configuration, see the deployment prerequisites (see page 41).

For EAR File Deployment

When deploying the application, you must deploy both EAR files. However, be careful to use a different context path for each web application.

1. (Optional) Rename the CAOMWebViewer12_ear application.
2. (Required) Rename the second CAOMWebViewer12_ear application.

   Important! The application names must not match.
3. If you deploy three or more product instances, repeat Step 2 for each additional instance.
4. (Optional) Map the context path for CAOMWebViewer12.war Web Module to a different value.

   For example, a context path of CAOMWebViewer12_US produces a web address, such as http://<server>:<port>/CAOMWebViewer12_US.
5. (Required) Map the context paths of the second CAOMWebViewer12.war Web Module to a different value.

   Important! The context paths of each CAOMWebViewer12.war Web Module must not match.
6. If you deploy three or more instances of CA OM Web Viewer, you repeat Step 5 for each additional instance.

7. Map the context path of the CA Styles R5.1.3 Web Module in the second CAOMWebViewer12_ear application to an alternate value, and keep the CA Styles R5.1.3 Web Module untouched in the first CAOMWebViewer12_ear application.

   For example, define a context path of /castylesr5.1.3_alt.

8. If you deploy three or more instances of CA OM Web Viewer, you repeat Step 7 for each additional instance.

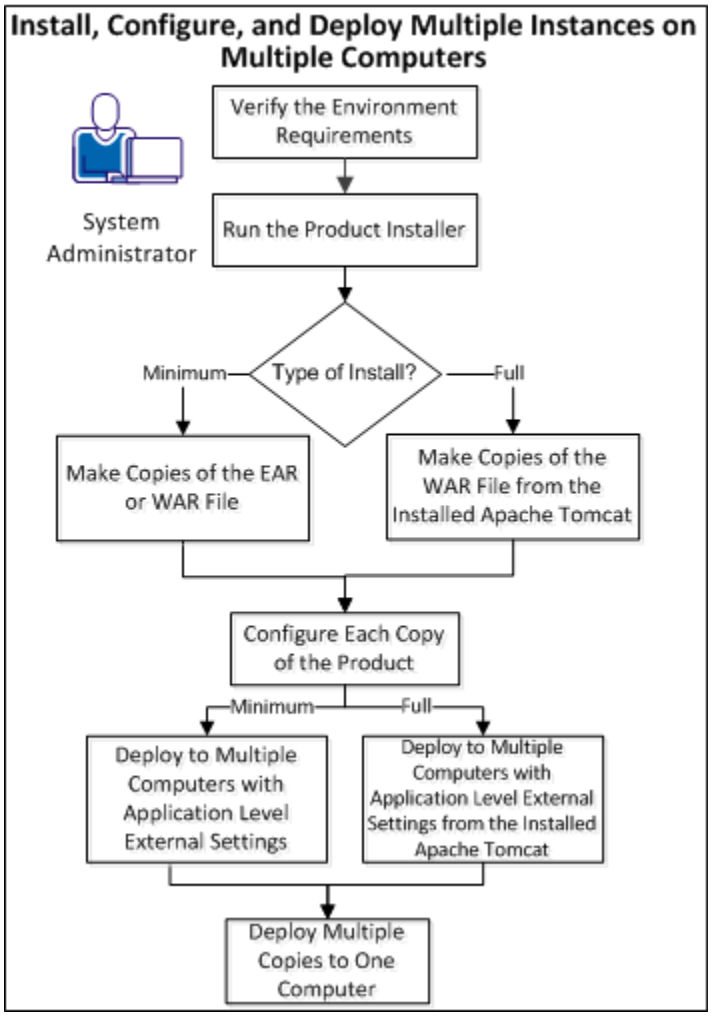
   Note: For more information about deploying to WebSphere or context paths with Application Level External Configuration on WebSphere, see the deployment prerequisites (see page 39).

Install, Configure, and Deploy Multiple Instances on Multiple Computers

As a system administrator, you want to run more than one copy of the product on multiple computers. For example, you want two CA OM Web Viewer instances running on your test computer, and two similar instances running on your production computer.

Important!: Find your copy of the product installer. (See Acquiring the Product Installer (see page 31), for more information. FTP your installer to a different computer if needed.

The following diagram shows how you install multiple instances on different computers:

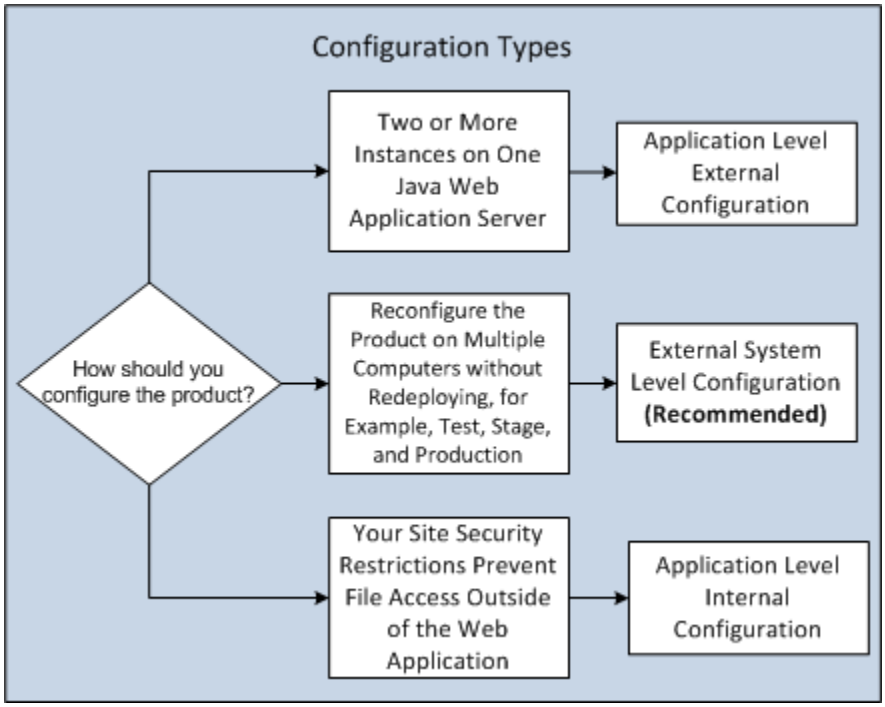


1. Verify your configuration type (see page 37), deployment prerequisites for WebSphere (see page 39) or Apache Tomcat (see page 41), and the environment requirements (see page 42).

2. Run the product installer (see page 43).
3. Complete one of the following steps:
   - For a Minimal install, make copies of the WAR or EAR file (see page 77) (deployable folder).
   - For a Full install, make copies of the WAR file from the installed Apache Tomcat (see page 78) (webapps folder).
4. Configure each copy of the product (see page 93).
5. Complete one of the following steps:
   - For a Minimal install, deploy to multiple computers with Application Level External Settings (see page 94).
   - For a Full install, deploy to multiple computers with Application Level External Settings from the installed Apache Tomcat (see page 95).
6. Deploy multiple copies to one computer (see page 80).

Choosing a Configuration Type

The following diagram describes the basic configuration types:



External System Level Configuration

Lets you update your application easily, and then you copy the application to multiple systems, without having to reconfigure the product.

Your configuration files are located in a directory outside of the CA OM Web Viewer web application on the same computer. The web application reads this directory location from the CAOMWV12_HOME (see page 107) Environment Variable.

You are not required to redeploy your CA OM Web Viewer application after you modify the settings. Only a web application restart is required. This configuration option lets you update your application easily, and then copy the CA OM Web Viewer application WAR or EAR file to multiple systems, without having to reconfigure the WAR or EAR file.

Important! This configuration is recommended for most environments. However, there are certain situations when you want to use another configuration type. If you intend to run two instances of CA OM Web Viewer on one computer, do not use External System Level Configuration. Instead, use Application Level External Configuration or Application Level Internal Configuration.

Application Level External Configuration

Lets you have two or more copies of the product on one Java application web server, or on one computer.

Your configuration files are located in a directory outside of the CA OM Web Viewer web application on the same computer. The web application reads this directory location from a parameter within web.xml.

Note: In some situations, you are required to redeploy your CA OM Web Viewer application after settings changes. Often, only a web application restart is required.

Important! To deploy the product to multiple servers using application level external configuration files, use the same path to your configuration files on all servers. If you do not use the same path, you have to apply patches to each system separately. With different configuration paths on each server, you cannot apply a patch to only one EAR or WAR file, for example, on a test computer, and then copy that same EAR or WAR file to each server where you to run the product, for example, on several production computers.

Application Level Internal Configuration

Your site security restrictions do not allow web applications to access files outside of the web application.

Your configuration files are located in a directory inside of the CA OM Web Viewer web application. The web application uses the default directory within the web application.

Note: You are required to redeploy your CA OM Web Viewer application after settings changes.

Important! To deploy the product to multiple servers using internal configuration files, you have to apply patches to each system separately. With internal configuration, you cannot apply a patch to only one EAR or WAR file, for example, on a test computer, and then copy that same EAR or WAR file to each server where you to run the product, for example, on several production computers.

Deployment Prerequisites for WebSphere

Before you deploy CA OM Web Viewer on WebSphere, verify that you applied all fixes for the WebSphere server.

To deploy as a WAR file on WebSphere, set the Class loader order to *Classes loaded with local class loader first (parent last)* at both the module, and application level, in order to load libraries within the CA OM Web Viewer package first.

Notes:

- If you selected to produce an EAR file during installation, this setting is included in the EAR file automatically, so you can deploy this EAR file on WebSphere without changing this setting.
- For a web server to host multiple instances of CA OM Web Viewer, Java memory space needs to be large enough (see page 19).
- With multiple instances of CA OM Web Viewer, you can deploy another server as a load balancer to dispatch requests. The load balancer must support session affinity or session stickiness to ensure that requests of the same session are directed to the same server.

Choose the appropriate configuration for your application.

System Level External Configuration

If you are using a System Level External Configuration, you must set the CAOMWV12_HOME variable (see page 107) within WebSphere. You set up a new environment variable named CAOMWV12_HOME in the Java and Process Management > Process definition > Environment Entries section of your Application Server. Then, restart your WebSphere server in order for the setting to take effect.

Important! Add CAOMWV12_HOME as an environment variable not as a property in order for CA OM Web Viewer to recognize CAOMWV12_HOME

Application Level External Configuration

When deploying using Application Level External Configuration, and you need to deploy more than one EAR file, be careful to use a different context path and application name for each web application deployed on WebSphere.

1. (Optional) Rename the CAOMWebViewer12_ear application.
2. (Required) Rename the second CAOMWebViewer12_ear application.

   Important! The application names must not match.
3. If you deploy three or more product instances, repeat Step 3 for each additional instance.

4. (Optional) Map the context paths for CAOMWebViewer12.war Web Module to a different value.

   For example, a context path of CAOMWebViewer12_US produces a web address, such as http://<server>:<port>/CAOMWebViewer12_US.

5. (Required) Map the context paths of the second CAOMWebViewer12.war Web Module to a different value.

   Important! The context paths of each CAOMWebViewer12.war Web Module must not match.

6. If you deploy three or more instances of CA OM Web Viewer, you repeat Step 5 for each additional instance.

7. Map the context path of the CA Styles R5.1.3 Web Module in the second CAOMWebViewer12_ear application to an alternate value, and keep the CA Styles R5.1.3 Web Module untouched in the first CAOMWebViewer12_ear application.

   For example, define a context path of /castylesr5.1.3_alt.

8. If you deploy three or more instances of CA OM Web Viewer, you repeat Step 7 for each additional instance.

Notes:

- When deploying multiple CA OM Web Viewer instances with different configuration on WebSphere, the class loader policy for server-specific application settings must be set to Multiple. For more information about how to set server-specific application settings, see your WebSphere documentation.
- When using different database systems with different CA OM Web Viewer instances deployed on WebSphere, WebSphere variables for specific database JDBC driver paths may be required to resolve the JDBC driver class loading. For more information about WebSphere variable settings, see your WebSphere documentation.
- For more information about WebSphere settings, see your WebSphere documentation.

Application Level Internal Configuration

Remove the CAOMWV12_HOME environment variable from within WebSphere, if it exists.

Deployment Prerequisites for Apache Tomcat

The following information describes the deployment prerequisites for Apache Tomcat.

With multiple instances of CA OM Web Viewer, you can deploy another server as a load balancer to dispatch requests. The load balancer must support session affinity or session stickiness to ensure that requests of the same session are directed to the same server.

Choose the appropriate configuration for your application:

System Level External Configuration

If you are using this configuration, set the CAOMWV12_HOME (see page 107) variable on your system.

Application Level External Configuration

The following information describes the deployment prerequisites for deploying multiple CA OM Web Viewer instances on Apache Tomcat:

Rename your WAR files before deployment, so that each CA OM Web Viewer application WAR has a different name. This WAR file name also serves as the context path in the CA OM Web Viewer application web address.

For example, a WAR file named CAOMWebViewer12_US.war produces a web address, such as http://<server>:<port>/CAOMWebViewer12_US.

Application Level Internal Configuration

Remove the CAOMWV12_HOME variable from your system, if it exists.

Verify the Environment Requirements

Before you install and configure the product on the same computer and deploy the product on multiple computers, verify the environment requirements. These requirements let all instances of the product share a common configuration.

Follow these steps:

1. Verify the configuration type (see page 37) for your environment:

   External System Level Configuration

   (Recommended) Lets you update your application easily, and then you copy the application to multiple systems, without having to reconfigure the product.

   Application Level External Configuration

   Lets you have two or more copies of the product on one Java application web server, or on one computer.

   Application Level Internal Configuration

   Your site security restrictions do not allow web applications to access files outside of the web application.

2. Verify that Java is installed so that the installer and configuration tool can run.
3. Verify your network access (JDBC over TCP/IP) to the remote database server.

   This verification lets the configuration tool test the connection. You can execute the tool without a test, but we recommend that you verify a successful connection.

4. Verify your network access (CCI over TCP/IP) to the mainframe where the primary CCI task runs.

   The configuration tool requires this access for the optional CCI connection test and the DRAS server discovery.

5. Repeat Step 2 through Step 4 on all computers that you plan to use in your environment.

   For example, to deploy the product on other computers, complete the verification steps on all computers.

Run the Product Installer

You run the installer to run the wizard in your environment. You review the introduction panel for information about the installer, review and accept the license agreement, and follow the wizard prompts.

Follow these steps:

1. Complete the appropriate steps for your environment:

   Windows

   Run CAOMWV.exe.

   Other Environments

   Use ssh or telnet to connect to USS (if ssh or telnet connection is supported). You can also use OMVS to gain access to a USS console.

   Launch CAOMWV.jar with Java:

   java -jar CAOMWV.jar

   The command java -jar assumes java is included in your PATH. Alternately, you must include the full path to the java executable in the command.

2. Review the Introduction panel for information about the Installer, and click Next.
3. Review the license agreement, and click Next.
4. Complete one of the following steps:
   - Select Minimal to install either an EAR file, or a pair of WAR files that you can deploy to your Web Application server, and click Next.
   - Select Full to install CA OM Web Viewer and Apache Tomcat with the product predeployed on the server.
5. Specify the folder where you want to install CA OM Web Viewer, and complete the remaining wizard prompts.

Make Copies of the WAR or EAR File

If you want to run more than one copy of the product on the same Java Application Web Server, you make other copies of the CAOMWebViewer12 EAR or CAOMWebViewer12 WAR file.

Note: You do not need to make extra copies of the castylesr5.1.3.war file.

Follow these steps:

1. (Minimal Install Only) Go to the deployable folder:

   <installation_folder>/deployable

2. Copy the CAOMWebViewer12.war or CAOMWebViewer12.ear file.
3. Rename the copied file to CAOMWebViewer12_B.war or CAOMWebViewer12_B.ear.
   - You can use different names, but do not include any special characters or spaces in the name. Valid characters include A-Z, a-z, and 0-9.
   - The name of the WAR file also serves as your context path.
   - The name of the EAR file is less important, because it does not affect your context path. You can change the context path of that application during the product deployment.
4. (Recommended) Keep the WAR and EAR files in the deployable directory for future use.

   Note: You may need to apply fixes to the files, or deploy those same files to more than one computer when your environment or configuration changes.

Make Copies of the WAR File from the Installed Apache Tomcat

If you want to run more than one copy of the product on the same Java Application Web Server, you make other copies of the CAOMWebViewer12 WAR file from the installed Apache Tomcat.

Note: You do not need to make extra copies of the castylesr5.1.3.war file.

Follow these steps:

1. (Full Install Only) Go to the webapps folder:

   <apache_install>/webapps/

   Default folder:

   <installation_folder>/apache_tomcat-#.#.##/webapps/

2. Copy the CAOMWebViewer12.war file.
3. Rename the copied file to CAOMWebViewer12_B.war.
   - You can use different names, but do not include any special characters or spaces in the name. Valid characters include A-Z, a-z, and 0-9.
   - The name of the WAR file also serves as your context path.
4. (Recommended) Keep the WAR file in the webapps directory for future use.

   Note: You may need to apply fixes to the files, or deploy those same files to more than one computer when your environment or configuration changes.

Configure Each Copy of the Product

You must configure each of the EAR or WAR files (Minimal install) or WAR files (Full install) that you created separately. This environment setup requires application-level external configuration.

Follow these steps:

1. Verify that the CAOMWV12_HOME variable (see page 107) exists, if you want to use external configuration.
2. Locate the configuration tool in the following directory:

   <installation_directory>/util
3. Execute the configuration tool as follows:

   Windows

   a. Set *util* as the current folder from the command prompt.

   b. Execute configtool.bat.

   Linux/UNIX

   a. Set *util* as the current folder from the console.

   b. Execute configtool.sh.
4. Select Application Level External Configuration as your configuration type (see page 37).

   This configuration lets you have two or more copies of the product on one Java application web server, or on one computer.
5. Select a different Application Level External Configuration location for each WAR or EAR file (Minimal install) or each WAR file (Full install).
6. Select the settings that you want to configure (see page 111) from the menu.

   Important! If you are running the configuration tool for the first time, for example, the initial configuration after an install, select the All Web Viewer Settings menu option.
7. Create the configuration by completing all the sections in the wizard.

   You can edit the configuration as often as necessary.
8. Exit the utility after the configuration completes.
9. (Optional) Copy configuration files to an alternate location, if you want to use the configuration files on a different computer.
10. Restart the CA OM Web Viewer application or redeploy the application as needed, for the changes to take effect.

Deploy to Multiple Computers with Application Level External Settings

To deploy your WAR or EAR file to more than one computer, you copy the file and configuration locations to the other computer.

Follow these steps:

1. Create a folder location on each other computer where you are going to copy the files.
2. Copy the following directories from the computer where you installed the product:

   <install_folder>\deployable

   <install_folder>\util

   Note: If you created additional copies of the WAR or EAR file, and you placed them in another directory, copy that directory to the other computer with, or in place of the deployable directory.
3. Copy the Application Level External Configuration directories to the other computer.

   Note: You created these directories with the configuration tool. The default path is <CA OM Web Viewer Home Var>/<WAR/EAR Name>

   Important! If possible, verify that the paths to these directories are the same on each computer. This verification helps streamline your maintenance procedure.
4. Consider the following example of configuration paths and context names:

   Computer A

   - Web App Name 1: CAOMWebViewer12_US
   - Context Path 1: CAOMWebViewer12_US
   - Application Level External Configuration Path 1: C:\Program Files\CA\CA_OM_Web_Viewer_Base\CAOMWebViewer12_US
   - Web App Name 2: CAOMWebViewer12_CA
   - Context Path 2: CAOMWebViewer12_CA
   - Application Level External Configuration Path 2: C:\Program Files\CA\CA_OM_Web_Viewer_Base\CAOMWebViewer12_CA

Computer B

- Web App Name 1: CAOMWebViewer12_US
- Context Path 1: CAOMWebViewer12_US
- Application Level External Configuration Path 1: C:\Program Files\CA\CA_OM_Web_Viewer_Base\CAOMWebViewer12_US
- Web App Name 2: CAOMWebViewer12_CA
- Context Path 2: CAOMWebViewer12_CA
- Application Level External Configuration Path 2: C:\Program Files\CA\CA_OM_Web_Viewer_Base\CAOMWebViewer12_CA

  Note: The Application Level External Configuration location matches on each computer.

5. Deploy the product with each deployable file.

   Note: Do *not* mix up the _US EAR or WAR with the _CA EAR or WAR when you deploy it to the second computer.

Deploy to Multiple Computers with Application Level External Settings from an Installed Apache Tomcat

To deploy your WAR file to more than one computer, you copy the file and configuration locations to the other computer.

Follow these steps:

1. Create a folder location on each other computer where you are going to copy the files.
2. Copy the following directories from the computer where you installed the product:

   <install_folder>\util
3. Copy the application war files CAOMWebViewer12.war and castylesr5.1.3.war from the following directory.

   <installed tomcat location>\webapps
4. Place these files on the new computer in a new folder named deployables.

   Note: If you created additional copies of the CAOMWebViewer12 WAR file, and you placed them in another directory, copy that directory to the other computer with, or in place of the deployable directory.

5. Copy the Application Level External Configuration directories to the other computer.

   Note: You created these directories with the configuration tool. The default path is <CA OM Web Viewer Home Var>\<WAR Name>.

   Important! If possible, verify that the paths to these directories are the same on each computer. This verification helps streamline your maintenance procedure.

6. Consider the following example of configuration paths and context names:

   Computer A

   - Web App Name 1: CAOMWebViewer12_US
   - Context Path 1: CAOMWebViewer12_US
   - Application Level External Configuration Path 1: C:\Program Files\CA\CA_OM_Web_Viewer_Base\CAOMWebViewer12_US
   - Web App Name 2: CAOMWebViewer12_CA
   - Context Path 2: CAOMWebViewer12_CA
   - Application Level External Configuration Path 2: C:\Program Files\CA\CA_OM_Web_Viewer_Base\CAOMWebViewer12_CA

   Computer B

   - Web App Name 1: CAOMWebViewer12_US
   - Context Path 1: CAOMWebViewer12_US
   - Application Level External Configuration Path 1: C:\Program Files\CA\CA_OM_Web_Viewer_Base\CAOMWebViewer12_US
   - Web App Name 2: CAOMWebViewer12_CA
   - Context Path 2: CAOMWebViewer12_CA
   - Application Level External Configuration Path 2: C:\Program Files\CA\CA_OM_Web_Viewer_Base\CAOMWebViewer12_CA

     Note: The Application Level External Configuration location matches on each computer.

7. Deploy the product with each deployable file.

   Note: Do *not* mix up the _US EAR or WAR with the _CA EAR or WAR when you deploy it to the second computer.

Deploy Multiple Copies to One Computer

You must deploy each copy of the WAR or EAR file that you created (see page 77).

Follow these steps:

For the embedded Apache Tomcat

Start your Java EE Application Server.

Note: The WAR files are predeployed on Apache Tomcat.

For WAR Files Deployment

1. If you are deploying more than one copy of the CAOMWebViewer12.war file to Apache Tomcat (see page 41), you do not deploy additional copies of the castylesr5.1.3.war file.
2. Rename your WAR files before deployment, so that each CA OM Web Viewer application WAR has a different name. This WAR file name also serves as the context path in the CA OM Web Viewer application web address.

   For example, a WAR named CAOMWebViewer12_US.war produces a web address, such as http://<server>:<port>/CAOMWebViewer12_US.

   Note: For more information about deploying to Apache Tomcat or context paths with Application Level External Configuration, see the deployment prerequisites (see page 41).

For EAR File Deployment

When deploying the application, you must deploy both EAR files. However, be careful to use a different context path for each web application.

1. (Optional) Rename the CAOMWebViewer12_ear application.
2. (Required) Rename the second CAOMWebViewer12_ear application.

   Important! The application names must not match.
3. If you deploy three or more product instances, repeat Step 2 for each additional instance.
4. (Optional) Map the context path for CAOMWebViewer12.war Web Module to a different value.

   For example, a context path of CAOMWebViewer12_US produces a web address, such as http://<server>:<port>/CAOMWebViewer12_US.
5. (Required) Map the context paths of the second CAOMWebViewer12.war Web Module to a different value.

   Important! The context paths of each CAOMWebViewer12.war Web Module must not match.
6. If you deploy three or more instances of CA OM Web Viewer, you repeat Step 5 for each additional instance.

7. Map the context path of the CA Styles R5.1.3 Web Module in the second CAOMWebViewer12_ear application to an alternate value, and keep the CA Styles R5.1.3 Web Module untouched in the first CAOMWebViewer12_ear application.

   For example, define a context path of /castylesr5.1.3_alt.

8. If you deploy three or more instances of CA OM Web Viewer, you repeat Step 7 for each additional instance.

   Note: For more information about deploying to WebSphere or context paths with Application Level External Configuration on WebSphere, see the deployment prerequisites (see page 39).

Installing Using Internal Configuration

As a system administrator, you want to install CA OM Web Viewer using internal configuration. You do not require any additional setup. Follow the example about how to Install, Configure, and Deploy on the Same Computer (see page 36).

Note: If you deploy the product with this type of configuration, redeploy your application after each configuration change.

Important! To deploy the product to multiple servers using internal configuration files, apply patches to each system separately. With internal configuration, you cannot apply a patch to one EAR or WAR file, for example, on a test computer, and then copy that same EAR or WAR file to each server where you to run the product, for example, on several production computers.

Installation Using the GUI Mode

On Windows only, use the GUI mode to install CA OM Web Viewer. For other supported operating systems, use the Console mode (see page 101) to install CA OM Web Viewer.

Before you start this section, acquire the Product Installer (see page 31). If needed, FTP the installer to the computer where you intend to install.

Introduction and License Agreements

Follow these steps:

1. Review the Introduction panel for information about the Installer and click Next.
2. Review the license agreement.

   Multiple products are licensed in this agreement.

3. Scroll down, select the *I accept...*option and click *Next*.

Choose Install Set

Specify the Install Set you want to install.

Minimal - Install only CA OM Web Viewer (WAR or EAR)

Lets you install either an EAR file or a pair of WAR files so that you can deploy to your Java EE Web Application server.

Full - Install CA OM Web Viewer with Apache Tomcat

Lets you install CA OM Web Viewer and Apache Tomcat with CA OM Web Viewer predeployed on the server.

Note: Depending on your Install Set, the following steps may vary.

Supply the Installation Information

Specify the folder where you want to install CA Output Management Web Viewer.

This folder contains the files that the installer generates.

Choose a Deployment Method (Minimal Install Only)

This panel lets you select your deployment method.

You have the following options for deployment method.

- EAR - Enterprise Archive

The EAR file installed would then manually be deployed to your server.

- WAR - Web Application Archive

The WAR files installer would then manually be deployed to you server.

After the installation, the CA OM Web Viewer EAR file or a pair of WAR files (CAOMWebViewer12.war and a supplementary WAR file castylesr5.1.3.war) will be generated and placed in the <INSTALL_HOME>/deployable folder. Depending on how your web application server is managed, you can take further steps to deploy the EAR or WAR files on your web application server.

Tomcat Setup Panels (Full Install Only)

The first Tomcat setup panels let you specify where to install Tomcat and the port from which it is accessed. Additionally, you can set up Apache Tomcat as a Windows service.

Follow these steps:

1. Specify a parent folder to install Apache Tomcat.

   The folder where you wish to install tomcat.

   Note: A subfolder named apache-tomcat-#.#.## is created inside the folder that you define.

2. Enter the non-SSL standard port that users use to access the server.

   Example: 8080 is formatted as the port: www.company.com:8080

3. Click Next.

   Note: If you choose this option installing on Windows, a Register Tomcat as Windows Service dialog appears.

4. Click Yes or No to indicate whether you want to Register Tomcat as Windows Service or not.

   Note: If you select Yes, the Tomcat web application server is registered as a Windows service with the Manual startup type. If you select No, you must start Tomcat with the BAT files (Windows) or SH files (other platforms) provided in the apache-tomcat-#.#.##/bin folder.

   Important! If Registered as Windows Service, you can change its startup type to Automatic after installation.

Review the Installation Summary

After you go through the Tomcat setup panels, review the installation summary:

1. Review the settings that display in the Pre Installation Summary.
2. Click Install to accept settings, or click previous to go back and change the settings.

Launch Configuration Tool

You can optionally choose to launch the Configuration Tool after the install window closes.

Note: It is optimal for the Configuration Tool to be run by someone that is familiar with CAICCI, CA DRAS™, and your database settings, and it is required that the person has valid external security credentials.

For more information on the Configuration Tool, see *Configuring CA Output Management Web Viewer*.

Complete the Installation

Review the Install Complete information and follow the instructions provided. A URL is listed to start CA Output Management Web Viewer in a web browser.

Note:

- You will have to configure CA Output Management Web Viewer before running the product.
- If you are not using the embedded Apache Tomcat option, you will have to deploy your EAR/WAR file to your Java web server.
- If you are not using the embedded Apache Tomcat option, or an existing Java web server then the URL shown is only a template. The actual URL can vary according to how you set up and deployed the CA OM Web Viewer on your own web application server.
- If there were errors or warnings during the install, they will listed on this panel.

Installation Using the Console Mode

On all supported operating systems except Windows, use the Console mode to install CA OM Web Viewer. On Windows only, use the GUI mode (see page 98) to install CA OM Web Viewer.

Before you start this section, acquire the Product Installer (see page 31). If needed, FTP the installer to the computer where you intend to install. If you use FTP to transfer the installer to USS, you must FTP the installer to a hierarchical file system accessible to USS.

Introduction and License Agreements

Follow these steps:

1. Review the InstallAnywhere Introduction.
2. Press Enter to continue.
3. Review the License Agreements.

   Press Enter until you reach the end of the license agreement.

   DO YOU ACCEPT THE TERMS OF THIS LICENSE AGREEMENT? (Y/N):
4. Enter Y to accept the license agreement.

Choose Install Set

Specify the Install Set you want to install.

Minimal - Install only CA OM Web Viewer (WAR or EAR)

Lets you install either an EAR file or a pair of WAR files so that you can deploy to your Java EE Web Application server.

Full - Install CA OM Web Viewer with Apache Tomcat

Lets you install CA OM Web Viewer and Apache Tomcat with CA OM Web Viewer predeployed on the server.

Note: Depending on your Install Set, the following steps may vary.

Supply the Installation Information

Specify where you want to install CA Output Management Web Viewer.

You can choose the Default Install Folder /usr/local/CA_OM_Web_Viewer or enter an absolute path or a specific folder to contain the files that the installer generates. The installer creates this folder; do not specify a folder that already exists. If the installer detects that the folder already exists, it generates an error message and prompts you to select a different location.

Important! Unix and Linux systems accept a space as a valid character in a folder or directory name. As a best practice, do not use spaces when specifying your folder name.

Choose a Deployment Method

This panel allows you to select your deployment method.

Note: Your selected install set will affect your available options on this panel.

You have the following options for the deployment method.

- EAR - Enterprise Archive

  The EAR file installed would then manually be deployed to your server.

- WAR - Web Application Archive

  The WAR files installer would then manually be deployed to you server.

After the installation, the CA OM Web Viewer EAR file or a pair of WAR files (CAOMWebViewer12.war and a supplementary WAR file castylesr5.1.3.war) will be generated and placed in the <INSTALL_HOME>/deployable folder. Depending on how your web application server is managed, you can take further steps to deploy the EAR or WAR files on your web application server.

Tomcat Setup Panels (Full Install Only)

The first Tomcat setup panels let you specify where to install Tomcat and the port from which it is accessed.

Follow these steps:

1. Specify a parent folder to install Apache Tomcat.

   The folder where you want to install tomcat.

   Note: A subfolder named apache-tomcat-#.#.## is created inside the folder that you define.

2. Enter the non-SSL standard port that users use to access the server.

   Example: 8080 is formatted as the port: www.company.com:8080.

Review Installation Summary

Review the Installation Summary:

1. Review the settings that are displayed in the Pre Installation Summary.
2. Click install to accept settings or click previous to go back and change the settings.

Launch Configuration Tool

You can optionally choose to launch the Configuration Tool after the install window closes.

Note: It is optimal for the Configuration Tool to be run by someone that is familiar with CAICCI, CA DRAS™, and your database settings, and it is required that the person has valid external security credentials.

For more information on the Configuration Tool, see Configuring CA Output Management Web Viewer.

Complete the Installation

Review the Install Complete information and follow the instructions list on it. A URL is listed to start CA Output Management Web Viewer in a web browser.

Note:

- You will have to configure CA Output Management Web Viewer before running the product.
- If you are not using the embedded Apache Tomcat option, you will have to deploy your EAR/WAR file to your Java web server.
- If you are not using the embedded Apache Tomcat option, the URL shown is only a template. The actual URL can vary according to how you set up and deploy the CA OM Web Viewer on your own web application server.
- If you there were errors or warnings during the install, they will listed on this panel.

Installation Logging

This section provides you with instructions of how to review the logs that are produced by the installation of CA OM Web Viewer.

Note: When the installation summary starts with Warning or Non-Fatal Failure the information about the error is logged in the installation logs.

Log Locations

There are three primary logs that are produced by CA OM Web Viewer installation.

- Primary Install Log
- Install Standard Out
- Install Standard Error

Primary Install Log -
CA_Output_Management_Web_Viewer_r12.1_Install_<date_time>.log

Install Standard Out - wv_install_stdout.log

Install Standard Error - wv_install_stderr.log

Primary Install Log

The main install log is placed in:
$USER_INSTALL_DIR$/uninstaller/Logs

Note: If there is a failure early in the installation, or you cancel the installation then the log file is placed in your Home folder in USS/Unix/Linux or on the Desktop on Windows.

The filename for the primary install log is:
CA_Output_Management_Web_Viewer_r12.1_Install_<date_time>.log

Install Standard Out

The install standard out is written to:
$TEMP$/wv_install_stdout.log

Note: The user temp folder can be found on the Windows by typing echo %TEMP% in the command prompt. The system temp folder on USS/Unix/Linux systems is often /tmp. For more information on alternate USS/Unix/Linux system temp folder locations, see the OS documentation.

Install Standard Error

The installation standard error is written to:
$TEMP$/wv_install_stderr.log

Note: The user temp folder can be found on Windows by typing echo %TEMP% in the command prompt. The system temp folder on USS/Unix/Linux systems is often /tmp. For more information on alternate USS/Unix/Linux system temp folder locations, see the OS documentation.

Chapter 4: Configuring

CA OM Web Viewer provides a configuration tool to set up initial settings after you install the product package. You can also use the tool to modify existing settings.

This section contains the following topics:

CAOMWV12_HOME Environment Variable

If you are using System Level External Configuration, CA OM Web Viewer and the configuration tool require an environment variable named CAOMWV12_HOME. You point the environment variable to the path of your CA OM Web Viewer install home or the parent directory of your configuration directory.

Important! In all cases, the home variable must point to the configuration folder parent. Be sure to use /config, not /util/config. Point to the parent of the /config folder that contains the properties files used by CA OM Web Viewer. Note that there may be a second folder with the same name config, /util/config, that contains the properties files the Configuration Tool uses, do not set the home variable to the parent of this lower-level folder.

On some platforms, the CA OM Web Viewer installer creates an environmental variable that points to your CA OM Web Viewer install location automatically. This action lets you run the configuration tool with no extra setup.

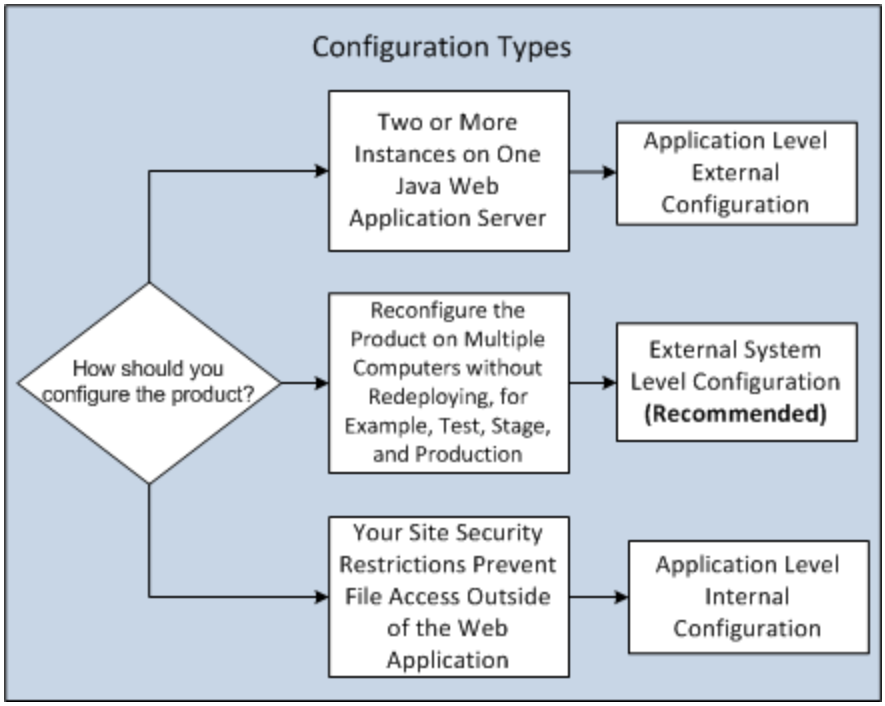
However, there are a number of situations when you have to define the variable manually.

- If you install on USS, Linux, or UNIX, create a CAOMWV12_HOME variable.
- If you copy the configuration tool to another computer.

Note: If the environment variable is not created, the end users see an error message on the login page stating Configuration context environment cannot be found. Contact your System Administrator.

Choosing a Configuration Type

The following diagram describes the basic configuration types:



External System Level Configuration

Lets you update your application easily, and then you copy the application to multiple systems, without having to reconfigure the product.

Your configuration files are located in a directory outside of the CA OM Web Viewer web application on the same computer. The web application reads this directory location from the CAOMWV12_HOME (see page 107) Environment Variable.

You are not required to redeploy your CA OM Web Viewer application after you modify the settings. Only a web application restart is required. This configuration option lets you update your application easily, and then copy the CA OM Web Viewer application WAR or EAR file to multiple systems, without having to reconfigure the WAR or EAR file.

Important! This configuration is recommended for most environments. However, there are certain situations when you want to use another configuration type. If you intend to run two instances of CA OM Web Viewer on one computer, do not use External System Level Configuration. Instead, use Application Level External Configuration or Application Level Internal Configuration.

Application Level External Configuration

Lets you have two or more copies of the product on one Java application web server, or on one computer.

Your configuration files are located in a directory outside of the CA OM Web Viewer web application on the same computer. The web application reads this directory location from a parameter within web.xml.

Note: In some situations, you are required to redeploy your CA OM Web Viewer application after settings changes. Often, only a web application restart is required.

Important! To deploy the product to multiple servers using application level external configuration files, use the same path to your configuration files on all servers. If you do not use the same path, you have to apply patches to each system separately. With different configuration paths on each server, you cannot apply a patch to only one EAR or WAR file, for example, on a test computer, and then copy that same EAR or WAR file to each server where you to run the product, for example, on several production computers.

Application Level Internal Configuration

Your site security restrictions do not allow web applications to access files outside of the web application.

Your configuration files are located in a directory inside of the CA OM Web Viewer web application. The web application uses the default directory within the web application.

Note: You are required to redeploy your CA OM Web Viewer application after settings changes.

Important! To deploy the product to multiple servers using internal configuration files, you have to apply patches to each system separately. With internal configuration, you cannot apply a patch to only one EAR or WAR file, for example, on a test computer, and then copy that same EAR or WAR file to each server where you to run the product, for example, on several production computers.

Setup for the Configuration Tool

Running the configuration tool requires the CAOMWV12_HOME environment variable (see page 107) and setting Java to PATH.

In order to run the configuration tool with the system level external configuration, define CAOMWV12_HOME on the system where you want to run the configuration tool.

Note: When you set Java to PATH, your PATH *must* include your Java bin folder.

Launch the Configuration Tool

The configuration tool lets you change the initial settings for CA CCI, CA DRAS, LDAP, ADMINID, and your database. You can edit and change the configuration as often as necessary.

Follow these steps:

1. Verify that the Java bin folder is present in the PATH for the configuration.
2. (System Level External Configuration) To use external configuration, verify that the CAOMWV12_HOME variable (see page 107) exists.
3. Locate the configuration tool in the following directory:

   <installation_directory>/util
4. Execute the configuration tool as follows:

   Windows

   a. Set *util* as the current folder from the command prompt.

   b. Execute configtool.bat.

   Linux/UNIX

   a. Set *util* as the current folder from the console.

   b. Execute configtool.sh.

   Important! If you are using the embedded Apache Tomcat, stop Apache Tomcat before you start the configuration tool. You should not run two copies of the configuration tool at once.
5. Select your configuration type (see page 37):

   External System Level Configuration

   (Recommended) Lets you update your application easily, and then you copy the application to multiple systems, without having to reconfigure the product.

   Application Level External Configuration

   Lets you have two or more copies of the product on one Java application web server, or on one computer.

   Important! If you are using Application Level External Configuration, be sure to select a different CCI (Common Communications Interface) Client System ID for each CA OM Web Viewer on your network.

   Note: By default, the Client System ID will be a modified version of your computer name. However, if you have two instances of CA OM Web Viewer on the same computer they must each have a different Client System IDs.

   Application Level Internal Configuration

   Your site security restrictions do not allow web applications to access files outside of the web application.

6. Select the settings that you want to configure (see page 111) from the menu.

   Important! If you are running the configuration tool for the first time, for example, the initial configuration after an install, select the All Web Viewer Settings menu option.

7. Create the configuration by completing all the sections in the wizard.

   You can edit the configuration as often as necessary.

8. Exit the utility after the configuration completes.
9. (Optional) To use the configuration files on a different computer, copy them to an alternate location.
10. Restart the CA OM Web Viewer application or redeploy the application as needed for the changes to take effect.

Configuration Tool Settings

The configuration tool lets you configure the following settings:

- CCI (Common Communications Interface) server information (see page 112)
- DRAS (Distributed Repository Access System) server information (see page 115)
- Authentication Configuration (see page 115)
- External Security (Customer Supplied Authentication Exits) (see page 116)
- LDAP (Lightweight Directory Access Protocol) Host Information (see page 117)
- Default Administrator Mainframe ID (see page 117)
- Database Connection Settings (see page 118)

CCI (Common Communications Interface) Server Information

CA OM Web Viewer uses CA CCI to connect to the CA Output Management product repositories (CA View®, CA Dispatch™, or CA Bundl®). CA OM Web Viewer uses a CA CCI client that you must configure to allow communications with a single CA CCI server. If your repositories reside on different LPARs, your communications can be routed to the CA CCI servers on other LPARs.

CCI Server

Specifies the DNS host name or IP address of the mainframe where the CA CCI server task executes.

Example: mainframe.company.com

CCI Port

Specifies the port number that the CCI server uses.

Example: 1202

CCI Client System ID

Specifies a unique name that identifies the product instance to the CA CCI server. You can use the host name of the system where you deployed the product, unless you deployed the CA OM Web Viewer on the same system where CA ENF/CA CCI is installed and running. This situation can happen when the CA OM Web Viewer is deployed on USS systems.

Important! Never define a Client System ID that matches the host name of the system where the CA CCI Server is installed or the Client System ID for any CCI servers. Matching the Client System ID and the host name can cause CCI failures. Additionally, if you have two instances of CA OM Web Viewer on the same computer they must each have a different Client System ID.

By default, the Client System ID is a modified version of your computer's host name. If you have two instances of CA OM Web Viewer on the same computer, as an example, the Application Level External Configuration, they must each have a different Client System ID. If you select a CA CCI Client System ID for any reason, we recommend that it is unique among CA OM Web Viewer instances on your network.

Limit: 8 characters

Example: system1

SSL Connection

This option specifies whether CA OM Web Viewer can use SSL to connect to the CCI server. You can also defer the decision of whether to use SSL to the host. This setting works with the CCI server's UNSECON setting.

The SSL encryption protocol can be either SSLv3 or TLSv1.

Important! SSLv3 encryption is provided for legacy support only. SSLv3 is no longer considered secure. If your CCI server uses SSLv3, we recommend changing to a newer protocol.

For more information on updating your CCI server's PROT, protocols enabled, setting, see *CA Common Services for z/OS Release 14.1.00, Installation Guide, Copy CCISSL.*

No SSL encryption (CCI connection not secured):

Do not use SSL secured connection. If your CCI server requires SSL connections, connections from CA OM Web Viewer are refused.

Defer the decision to use SSL to host:

Let your CCI server determine if an SSL connection is used. To determine in what cases an SSL connection is used, see the following chart.

Force SSL connection with host:

Require an SSL connection for communication with the SSL server. If your CCI server does not support SSL connections, connections from CA OM Web Viewer are refused.

In order for CA OM Web Viewer to successfully connect to the CCI server using SSL, the server must have a compatible UNSECON setting.

Use this table to determine whether your CCI connection will use SSL.

SSL connection	UNSECON ONLY	UNSECON ALLOW	UNSECON NONSSL	UNSECON NEVER
No SSL	Not secured	Not secured	Not secured	No connection
Defer decision	Not secured	Not secured	SSL secured	SSL secured
Force SSL	No connection	SSL secured	SSL secured	SSL secured

For more information, see *CA Common Services for z/OS Release 14.1.00, Installation Guide, Copy CCISSL*.

Force Secure end-to-end connection including routing across hosts.

Requires that SSL is used across LPARs. By selecting this option, CA OM Web Viewer requires an SSL secure path to each particular DRAS. If CA OM Web Viewer's CA CCI server resides on a different LPAR than the targeted DRAS task, an SSL link is required between the two LPARs.

If this option is selected and SSL is not enabled between the CA CCI tasks on each LPAR, CCI communications are rejected at runtime.

Without selecting this option, SSL is not required between LPARs. A communication request from CA OM Web Viewer to a DRAS task on another LPAR is permitted whether or not a secured SSL link connects the CCI Server and DRAS LPARs.

Encryption KeyStore

You can either choose to use the current KeyStore or use a new KeyStore.

If you have not previously added a KeyStore to CA OM Web Viewer, a sample KeyStore is used. The sample KeyStore comes with a sample certificate that matches the sample certificate that comes with the CCI server. The sample KeyStore is for testing purposes, and not intended for production use.

Enter the path and file name for the KeyStore file (.jks)

The KeyStore file must be in jks format. The required Trust Certificate (CA Root Certificate) must be a base64 encoded certificate file containing the CCI server's public key in X.509 format. If you wish to use client authentication, your KeyStore must contain a client end-user certificate.

For more information on KeyStore requirements, and on how to produce a KeyStore, see How to Create Keystore Files for Using SSL (see page 119).

If you are attempting to use client authentication, no further setting changes are required in CA OM Web Viewer. CA OM Web Viewer automatically finds the relevant certificate in the KeyStore and uses it. However, your CCI server must have the appropriate CLAUTH, client authentication, setting, to enable client authentication. The appropriate trust certificate that authenticates the client certificate must also be installed in the key database or external security keyring that the CA CCI server uses.

For more information on the CLAUTH setting, see CA Common Services for z/OS Release 14.1.00, Installation Guide, topic Copy CCISSL.

KeyStore File Password

Your KeyStore password must be at least six characters. If you are using client authentication, your KeyStore password must match the password on your client end-user certificate.

Encryption Protocol

You can choose either SSLv3 or TLSv1. TLSv1 is recommended.

Important! SSLv3 encryption is provided for legacy support only. It is no longer considered secure. If your CCI server uses SSLv3, we recommand upgrading to a newer protocol.

The CCI server must have the appropriate PROT, protocols enabled, setting, in order for CA OM Web Viewer to connect with a particular protocol.

For more information on the PROT setting, see CA Common Services for z/OS Release 14.1.00, Installation Guide, topic Copy CCISSL.

DRAS (Distributed Repository Access System) Server Information

CA Distributed Repository Access System (CA DRAS) acts as the License Management Program (LMP) license check server and the mainframe external security interface for web login.

DRAS Server

Specifies the domain of the DRAS server. The configuration tool discovers the available DRAS servers. Select the server by its listed number.

Example: 1 - ENFID1:DRASSVR1

Authentication Configuration

You can select one of the following security configurations:

- Mainframe Security then LDAP Security
- LDAP Security then Mainframe Security
- External Security (Customer Supplied Authentication Exits)

Important! Selecting external security causes all users, except System Admins, to be validated through external security only. The System Admin group members can only be authenticated through mainframe security.

External Security EXIT

If you select to use an External Security Exit, provide a path to a folder that has the files that comprise your External Security EXIT and needed libraries. The files will then be copied for CA OM Web Viewer to be used by the configuration tool.

Fully qualified directory where External Security Exit files are located:

The location of your exit jars.

Example: C:\WV_Exit\dist

The files in the supplied folder are copied to either of two locations depending on your configuration type:

- If using Application Level Internal configuration.

  The deployable (WAR or EAR)

- If using Application Level External Configuration or System Level External Configuration.

  Your external configuration location.

Notes:

- All files are copied, but subfolders and folder structure is removed. The file hierarchy is flattened.
- Only jar files are automatically loaded by the CA OM Web Viewer classloader, for more information on referencing other non-jar files, see the *CA Output Management Web Viewer Programmer Guide*.
- Jars that are listed in the CLASSPATH do not need to be included in this folder. In this instance, CLASSPATH can refer to the system CLASSPATH variable on the system where you run CA OM Web Viewer or a CLASSPATH defined within your Java EE Application Server. Whether applications on your Java EE Application Server use your system's CLASSPATH or one defined within the Java EE Application Server is determined by your Java EE Application Server. WebSphere Application Server for example, does not pass the system CLASSPATH to the application.

LDAP (Lightweight Directory Access Protocol) Host Information

If you have mainframe security first, these settings are not required.

LDAP Host

Specifies the host name of the LDAP system.

Example: ldap.company.com

LDAP Port

Specifies the port number of the LDAP system.

Example: 389

LDAP Login Attribute

Specifies the attribute in your LDAP directory that represents the user ID of your users. Common examples include *cn* (common name) and *uid*.

Example: sAMAccountName

LDAP Base DN

You must add these attributes to the login attribute of a user to provide that distinguished name that you desire.

Example: OU=Users,OU=North America,DC=company,DC=com

Bind DN

(Optional) Specifies the user login and base distinguished name of an account that can bind to the LDAP server and authentic other users.

Example: cn=Jim,ou=west,ou=admin,dc=company,dc=com

Bind Password

(Optional) Specifies the password for the Bind DN account.

Default Administrator Mainframe ID

The product requires the userid for its primary administrator.

Important! This userid must be a mainframe user.

Database Connection Settings

The product uses an external database to store administrative and user settings. Multiple database applications are supported in addition to generic JDBC-compliant database applications.

Database type

Lists the supported database types. Select the number matching your database application.

Example: 1

Full path name of an IBM DB2 license file

DB2 Only. For more information about the db2 license file see, Database Prerequisites, External Database

Full path name of the JAR file containing the JDBC driver

Local JDBC driver Only.

Host name

Specifies the name of the computer where the database server executes.

Example: dbserver.company.com

Port number

Specifies the port number that the database server uses.

Example: 1433

Database name

Specifies the name of the database that CA OM Web Viewer uses.

Important! You *must* create the database prior to testing or starting the product successfully.

Example: dvweb_adminDB

User name

Specifies the database user name with access to the CA OM Web Viewer database.

Example: sa

Password

Specifies the password of the database user name.

Does this account have CREATE TABLE privileges?

If no, create the tables before you start CA OM Web Viewer using the DDL SQL provided with the installation media.

Example: Enter 1 for Yes, 0 for No

Maximum number of connections for Read

Example: 100

Maximum number of connections for Write

Example: 100

JDBC URL

Specifies the JDBC URL based on the values provided. If additional parameters or changes are required, enter the correct URL.

Example:
jdbc:sqlserver://dbserver.company.com:1433;databaseName=dvweb_adminDB

Note: If you do not have this information, consult your Database Administrator.

How to Create Keystore Files for Using SSL

CA OM Web Viewer uses the CA CAICCI client interface (CCIClient.jar) for communication between the web server and the mainframe. Administrators can use Secure Socket Layer (SSL) to encrypt the CA CAICCI interface communication.

CA OM Web Viewer includes a sample keystore repository whose certificates match the CCISSL server certificates on the mainframe. You can use either the sample certificates or your own certificates to encrypt the CA CAICCI interface communication. To use your own certificates, create a Java keystore (JKS) certificate repository *before* you configure the CCIClient.

Certificate Formats

You use the Java keytool utility of the Java Runtime Environment (JRE) to create the Java keystore. The utility supports certificates in the following formats:

- The required Trusted Certificate (CA Root Certificate) must be a base64-encoded certificate file that contains the public key in X.509 format for the CCI server.
- The optional Client End User Certificate must be a certificate file in PKCS#12 format. This file must contain the public and private keys in X.509 format. The private key is password-protected.

  Note: If the CCI task specifies CLAUTH=Y or CLAUTH=PASS, a Client End User Certificate is required.

For more information about the keytool utility, see oracle.com.

If the format of your certificates is not supported, use a tool such as OpenSSL (see openssl.org) to convert them to a supported format.

Create the Java Keystore

To create the keystore, use the Java keytool utility to perform these steps:

Step 1: Locate and Copy the Certificate Files

1. Locate the certificate files for populating the HFS Key database for the CCISSL server on the mainframe. These files may reside in the CCI mainframe USS folder or some other location. At a minimum, locate the Trusted Certificate (public key). If you are using Client Authentication, locate that client end-user certificate and its private key with a password.
2. Copy the certificate files to the system where you want to create the keystore.

Important! If the certificate files are not in a format that the keytool supports, convert them to a supported format.

Step 2: Determine a Password

Determine a password for the Java keystore: the keytool requires a minimum length of 6 characters.

If you are using a client end-user certificate with a private key, use its password. The JKS password must match the private key password.

Step 3: Create the Java Keystore File and Import the Trusted Certificate

1. Delete the existing cci.jks file. This procedure creates a replacement file.
2. Open a command prompt or console.
3. Import the trusted certificate file using the following command:

   ```
   keytool -importcert -file path/pem-file -keystore path/cci.jks
   ```

4. When prompted, enter the keystore password.

   Note: For a client end user certificate, the CCIClient requires that the keystore and private key passwords match.

5. When prompted, confirm that you trust this certificate.

Step 4: Add the Client End User Certificate to the Keystore (Optional)

If you intend to use a client end user certificate for client authentication, add it to the Keystore.

1. Open a command prompt or console.
2. Import the client end user certificate file using the following command:

   keytool -v -importkeystore -srckeystore cci.p12 -srcstoretype PKCS12 -destkeystore cci.jks -deststoretype JKS

3. When prompted, enter the destination keystore password (the cci.jks keystore file password).
4. When prompted, enter the source keystore password (the PKCS#12 file password, also the client end user certificate private key password).

   Note: The CCIClient requires that the destination keystore and source keystore passwords match.

Back Up and Restore External Configuration Settings

The configuration tool creates a backup of the current configuration settings each time it runs, when you select the Save Settings Changes option. You can use these backup files to revert CA OM Web Viewer to an earlier configuration state. Use this example for System-Level External Configuration or Application-Level External Configuration.

Follow these steps:

1. Locate the configuration folder:
   - For System-Level External settings: <CAOMWV12_HOME>\config
   - For Application-Level External settings: <Application_Home>\config
2. Identify the backup level that you want to restore:
   - The CCIClient.properties file contains the current CCI settings. The backup files are named with the format, CCIClient.properties.*yyyymmdd-hhmmss*.bak, where *yyyymmdd-hhmmss* specifies the date and time that the backup was created.
   - The WVProfile.properties file contains the remaining current settings. The backup files are named with the format, WVProfile.properties.*yyyymmdd-hhmmss*.bak.

   To review these settings, use an ASCII text editor.
3. Rename the current files that you want to restore (CCIClient.properties, WVProfile.properties, or both) so that you can replace these files.
4. Copy the backup files and rename these files as CCIClient.properties and WVProfile.properties respectively.
5. Recycle the CA OM Web Viewer application(s) within the Java web application server, or recycle the Java web application server.

Back Up and Restore Internal Configuration Settings

The configuration tool creates a backup of the current configuration settings each time it runs, when you select the Save Settings Changes option. You can use these backup files to revert CA OM Web Viewer to an earlier configuration state. Use this example for Application-Level Internal Configuration.

The CAOMWebViewer12.war or CAOMWebViewer12.ear files contain the configuration files. To restore files, you *must* extract the *config* folder.

Note: This procedure uses the JAR command (recommended method) to perform the WAR/EAR file operations. As an alternative, ZIP and UNZIP commands (on Linux and USS) may also be used to perform WAR/EAR file operation. The Java JDK includes the JAR utility. Most Linux distributions include the ZIP and UNZIP utilities; for USS, you get these utilities from IBM (z/OS UNIX System Services - Ported Tools). To allow for the use of these commands, you may need to add the folder that contains the utilities to your current path.

Follow these steps:

1. Locate the WAR or EAR file.

   The default location is the <CAOMWV12_HOME>\deployable folder.

   Note: This location can differ if you deployed the product on a different machine than where you installed the product.

2. Open a CMD prompt (Windows) or console, and make deployable the current folder.

3. Enter the appropriate command for the EAR or WAR file:

   EAR file only

   a. Extract the WAR file from the EAR file:

      jar -xvf CAOMWebViewer12.ear CAOMWebViewer12.war

      or

      unzip CAOMWebViewer12.ear CAOMWebViewer12.war

   WAR or EAR file only

   a. Extract the config folder from the WAR file:

      jar -xvf CAOMWebViewer12.war config/

      or

      unzip CAOMWebViewer12.war config/*

4. In the resulting config folder, identify the backup level that you want to restore.
   - The CCIClient.properties file contains the current CCI settings. The backup files are named with the format, CCIClient.properties.*yyyymmdd-hhmmss*.bak, where *yyyymmdd-hhmmss* specifies the date and time that the backup was created.
   - The WVProfile.properties file contains the remaining current settings. The backup files are named with the format, WVProfile.properties.*yyyymmdd-hhmmss*.bak.

   To review these settings, use an ASCII text editor.
5. Rename the current files that you want to restore (CCIClient.properties, WVProfile.properties, or both) so that you can replace these files.
6. Copy the backup files and rename these files as CCIClient.properties and WVProfile.properties respectively.
7. Enter the appropriate command for the EAR or WAR file:

   WAR or EAR file only

   - Update the config folder in the WAR file:

     jar -uvMf CAOMWebViewer12.war config/

     or

     zip CAOMWebViewer12.war config/*

   EAR file only

   a. Update the WAR into the EAR file:

      jar -uvMf CAOMWebViewer12.ear CAOMWebViewer12.war

      or

      zip CAOMWebViewer12.ear CAOMWebViewer12.war

   b. Delete the WAR file that you created in Step 3a.

   Important! If you are deploying the WAR file, *do not* delete the WAR file.
8. Delete the config folder that you created in Step 3b.
9. (WAR or EAR file only) On the Java web application server, undeploy the CA OM Web Viewer application, and then deploy the updated WAR or EAR file.

Configuration Tracing

The configuration tool provides extra configuration tracing information. This information includes failure reasons for DRAS discovery, or CCI and LDAP connection tests. The following folder contains this information:

<installation_location>/util/logs

Consider the following information:

- This folder contains several log files.
- ConfigTool.log contains the failure reasons for DRAS discovery, or the CCI and LDAP connection tests.
- CA Support can also ask to access this information.

Chapter 5: Deploying

There are different deployment prerequisites, depending on what type of Java EE Application Server and configuration you intend to use. These changes should be made to the computer, or Java EE Application Server, where you intend to deploy CA OM Web Viewer.

This section contains the following topics:

Deployment Prerequisites for WebSphere

Before you deploy CA OM Web Viewer on WebSphere, verify that you applied all fixes for the WebSphere server.

To deploy as a WAR file on WebSphere, set the Class loader order to *Classes loaded with local class loader first (parent last)* at both the module, and application level, in order to load libraries within the CA OM Web Viewer package first.

Notes:

- If you selected to produce an EAR file during installation, this setting is included in the EAR file automatically, so you can deploy this EAR file on WebSphere without changing this setting.
- For a web server to host multiple instances of CA OM Web Viewer, Java memory space needs to be large enough (see page 19).
- With multiple instances of CA OM Web Viewer, you can deploy another server as a load balancer to dispatch requests. The load balancer must support session affinity or session stickiness to ensure that requests of the same session are directed to the same server.

Choose the appropriate configuration for your application.

System Level External Configuration

If you are using a System Level External Configuration, you must set the CAOMWV12_HOME variable (see page 107) within WebSphere. You set up a new environment variable named CAOMWV12_HOME in the Java and Process Management > Process definition > Environment Entries section of your Application Server. Then, restart your WebSphere server in order for the setting to take effect.

Important! Add CAOMWV12_HOME as an environment variable not as a property in order for CA OM Web Viewer to recognize CAOMWV12_HOME

Application Level External Configuration

When deploying using Application Level External Configuration, and you need to deploy more than one EAR file, be careful to use a different context path and application name for each web application deployed on WebSphere.

1. (Optional) Rename the CAOMWebViewer12_ear application.
2. (Required) Rename the second CAOMWebViewer12_ear application.

   Important! The application names must not match.
3. If you deploy three or more product instances, repeat Step 3 for each additional instance.
4. (Optional) Map the context paths for CAOMWebViewer12.war Web Module to a different value.

   For example, a context path of CAOMWebViewer12_US produces a web address, such as http://<server>:<port>/CAOMWebViewer12_US.
5. (Required) Map the context paths of the second CAOMWebViewer12.war Web Module to a different value.

   Important! The context paths of each CAOMWebViewer12.war Web Module must not match.
6. If you deploy three or more instances of CA OM Web Viewer, you repeat Step 5 for each additional instance.

7. Map the context path of the CA Styles R5.1.3 Web Module in the second CAOMWebViewer12_ear application to an alternate value, and keep the CA Styles R5.1.3 Web Module untouched in the first CAOMWebViewer12_ear application.

   For example, define a context path of /castylesr5.1.3_alt.

8. If you deploy three or more instances of CA OM Web Viewer, you repeat Step 7 for each additional instance.

Notes:

- When deploying multiple CA OM Web Viewer instances with different configuration on WebSphere, the class loader policy for server-specific application settings must be set to Multiple. For more information about how to set server-specific application settings, see your WebSphere documentation.
- When using different database systems with different CA OM Web Viewer instances deployed on WebSphere, WebSphere variables for specific database JDBC driver paths may be required to resolve the JDBC driver class loading. For more information about WebSphere variable settings, see your WebSphere documentation.
- For more information about WebSphere settings, see your WebSphere documentation.

Application Level Internal Configuration

Remove the CAOMWV12_HOME environment variable from within WebSphere, if it exists.

Deployment Prerequisites for Apache Tomcat

The following information describes the deployment prerequisites for Apache Tomcat.

With multiple instances of CA OM Web Viewer, you can deploy another server as a load balancer to dispatch requests. The load balancer must support session affinity or session stickiness to ensure that requests of the same session are directed to the same server.

Choose the appropriate configuration for your application:

System Level External Configuration

If you are using this configuration, set the CAOMWV12_HOME (see page 107) variable on your system.

Application Level External Configuration

The following information describes the deployment prerequisites for deploying multiple CA OM Web Viewer instances on Apache Tomcat:

Rename your WAR files before deployment, so that each CA OM Web Viewer application WAR has a different name. This WAR file name also serves as the context path in the CA OM Web Viewer application web address.

For example, a WAR file named CAOMWebViewer12_US.war produces a web address, such as http://<server>:<port>/CAOMWebViewer12_US.

Application Level Internal Configuration

Remove the CAOMWV12_HOME variable from your system, if it exists.

Deploying Your Configuration Settings Changes

External System Level Configuration

You *must* restart the product for the configuration change to take effect.

If you deployed the product on a different system, copy the updated configuration files (the configuration directory) to the other system, before you restart CA OM Web Viewer.

Note: For more information about deployment scenarios, see Installation Scenarios (see page 25).

Application Level External Configuration

In all cases, you must restart the product for the configuration change to take effect.

If you changed your Application Level External configuration directory location, or if this is the first time you added an Application Level External Configuration directory location:

Redeploy your changed WAR or EAR file, if you were using a WAR or EAR file.

If you are using the embedded Apache Tomcat:

1. Stop your Apache Tomcat application server.
2. If you are using the embedded database, copy your apache-tomcat-#.#.##/webapps/CAOMWebViewer12/database directory from your Apache Tomcat install to an alternate location.
3. If you are using the embedded database, delete the CAOMWebViewer12 directory from the webapps directory of your Apache Tomcat install.
4. Restart your Apache Tomcat application server.
5. If you are using the embedded database, copy your apache-tomcat-#.#.##/webapps/CAOMWebViewer12/database directory to your Apache Tomcat install from your alternate location that you defined in Step 2.
6. Restart your Apache Tomcat application server.

Application Level Internal Configuration

If you were using a WAR or EAR file, with internal configuration files, you must always redeploy you EAR or WAR file.

If you are using the embedded Apache Tomcat:

1. Stop your Apache Tomcat application server.
2. If you are using the embedded database, copy your apache-tomcat-#.#.##/webapps/CAOMWebViewer12/database directory from your Apache Tomcat install to an alternate location.
3. If you are using the embedded database, delete the CAOMWebViewer12 directory from the webapps directory of your Apache Tomcat install.
4. Restart your Apache Tomcat application server.
5. If you are using the embedded database, copy your apache-tomcat-#.#.##/webapps/CAOMWebViewer12/database directory to your Apache Tomcat install from your alternate location that you defined in Step 2.
6. Restart your Apache Tomcat application server.

File Permissions Considerations

This section describes how to set permissions for Linux, USS, and UNIX-type deployments.

When CA OM Web Viewer is configured for either System Level External Configuration or Application Level External Configuration, the Java web application server must have the following minimum file permission access to CAOMWV12_HOME folder contents:

Folder	File	Access
<CAOMWV12_HOME>		
	derby.log	rw- (6)
\config	<all contents, recursive>	r- (4)
\database	<all contents, recursive>	rw- (6)
\logs	<all contents, recursive>	rw- (6)

Access in this case refers to either User or Group access, depending on if you server is running as the same user as the installer, or only in the same group, The accesses listed can be set at the system level, if the installer and server are not in the same group, but this is not recommended, as it is an insecure setup.

If these minimum permissions are not met, CA OM Web Viewer may fail to start correctly, because it cannot read its configuration settings; or may start but users are unable to get a report list, because it cannot read/write to the run-time database.

Chapter 6: Environment Considerations

The following environments can require special considerations.

This section contains the following topics:

Change the Java Runtime Environment

If you installed the bundled Apache Tomcat Web application server that was shipped with CA OM Web Viewer, the Java Runtime Environment (JRE) can be changed as follows:

To change the JRE, on the Windows operating environment.

1. Find the file under the directory where the Apache Tomcat Web application server is installed:

   apache-tomcat\bin\catalina.bat

2. Find the following line in this file.

   set "JRE_HOME=C:\Program Files\....."

3. Change the directory pointing to the JRE you would like to use.

To change the JRE, on other operating environments.

1. Find the file under the directory where the Apache Tomcat Web application server is installed:

   apache-tomcat/bin/catalina.sh

2. Find the following line in this file.

   JRE_HOME=/usr/javapath

3. Change the directory pointing to the JRE you would like to use.

Parameter Required for Java 1.6

If you encountered the following error while running on Java 1.6:

Java.lang.ClassNotFoundException: [Ljava.lang.String; at ……loadClass(…)

Add the following Java parameter to the arguments you use to launch your web application server; for example, the environment variable JAVA_OPT.

```
-Dsun.lang.ClassLoader.allowArraySyntax=true
```

Chapter 7: Start or Shutdown CA OM Web Viewer

If you installed the bundled Apache Tomcat web application server during the installation, you can follow the instructions to start or shut down CA OM Web Viewer.

This section contains the following topics:

Start CA OM Web Viewer

You deploy the product after the configuration completes successfully.

Follow these steps:

1. Verify that CAOMWebViewer12.war and castylesr5.1.3.war deployed.
2. Start the web application server.

   If you installed the Tomcat Java Web application server accompanying CA OM Web Viewer, launch the server in one of the following ways according to your operating environment:

   Windows

   - Click Start, Programs, CA, CA OM Web Viewer, Apache Tomcat, Startup Tomcat.
   - If you chose to register it as a Windows service, use the *Services* administration tool to find and start the service named *Tomcat7forCAOMWebViewer12* (Display name *Apache Tomcat 7 for CAOMWebViewer12*).

     Important! If you choose to register Apache Tomcat as a Windows service during the install then the option to Click Start, Programs, CA, CA OM Web Viewer, Apache Tomcat, Startup Tomcat will only start the Tomcat Server and not the service.

   - Go to the apache-tomcat folder where you installed the bundled Apache Tomcat web application server. Execute the script apache-tomcat\bin\startup.bat.

   Other operating systems

   - Go to the apache-tomcat folder where you installed the bundled Apache Tomcat web application server. Execute the script apache-tomcat/bin/startup.sh

3. Open the following URL in a web browser:

   http://hostname:port/CAOMWebViewer12

Shutdown CA OM Web Viewer

If you installed the Tomcat Java Web application server accompanied with CA OM Web Viewer, you have options to shut down the server.

Follow these steps:

1. Shut down the server in one of the following ways according to your operating environment:

   Windows

   - Click Start, Programs, CA, CA OM Web Viewer, Apache Tomcat, Shutdown Tomcat.
   - If you chose to register it as a Windows service, use the *Services* administration tool to find and stop the service named *Tomcat7forCAOMWebViewer12.*
   - Go to the apache-tomcat folder where you installed the bundled Apache Tomcat web application server. Execute the script apache-tomcat\bin\shutdown.bat.

   Other operating systems

   - Go to the apache-tomcat folder where you installed the bundled Apache Tomcat web application server. Execute the script apache-tomcat/bin/shutdown.sh

2. Verify that CA OM Web Viewer shutdown.

Appendix A: OM Web Viewer Messages

This chapter provides information about the messages produced by OM Web Viewer.

This section contains the following topics:

UI Messages for Configuration Errors

OM Web Viewer includes a set of error messages that an incomplete configuration causes. Messages are displayed in the Web Viewer Login page.

Messages

Configuration context environment cannot be found.

Configuration context environment cannot be found. Contact your System Administrator

Reason:

The required CAOMWV12_HOME environment variable for the CA OM Web Viewer system level configuration is not setup in the server environment.

Action:

The CAOMWV12_HOME environment variable has the path of your CA OM Web Viewer install home or the configuration parent folder. Administrators have to define the variable manually on your system platforms. For more information, see Chapter 4.

System Configuration context cannot be located.

System Configuration context cannot be located. Contact your System Administrator

Reason:

The CA OM Web Viewer configuration folder does not exist, or is not accessible by the product. If the configuration folder does exist, it is not in the path that the environment variable CAOMWV12_HOME defined.

Action:

Check for the existence of the configuration folder, %CAOMWV12_HOME%/config. If the configuration folder does not exist, then the administrator has to run the configuration tool at the system level or copy the configuration tool folder from another computer. If the configuration folder exists, check for the CA OM Web Viewer application access rights to the folder. If necessary, ask your system administrator to grant the folder access rights for the CA OM Web Viewer application.

Application Configuration context cannot be located.

Application Configuration context cannot be located. Contact your System Administrator

Reason:

The CA OM Web Viewer configuration path does not exist, or the folder is not accessible by the product instance with the path of configuration folder that the web context defined in the specific CA OM Web Viewer install.

Action:

Check for the existence of configuration folder, %CAOMWV12_HOME%/${CAOMWebViewer12_INST}/config. Where %CAOMWV12_HOME% is the Web Viewer install home path and ${CAOMWebViewer12_INST} is the context name of the specific Web Viewer install instance. If not, the administrator has to run the configuration tool for this specific Web Viewer instance at the application level. If the configuration folder exists, check for the Web Viewer application access rights to the folder. If necessary, ask your system administrator to grant the folder access rights for the Web Viewer application.

Configuration context cannot be loaded.

Configuration context cannot be loaded. Contact your System Administrator.

Reason:

The CA OM Web Viewer configuration file and WVProfile.properties cannot be loaded from the configuration folder.

Action:

Check the configuration file is in the configuration folder, %CAOMWV12_HOME%/config. If not, the administrator has to run the configuration tool at the system level or at the application level for a specific Web Viewer instance. If the configuration file exists, check for the Web Viewer application access rights to the file. If necessary, ask your system administrator to grant the file access rights for the Web Viewer application.

External Security Service Provider is not available.

External Security Service Provider is not available

Reason:

The External Security EXIT service cannot be initiated for the first end user authentication with CA OM Web Viewer configured for External Security EXIT.

Action:

Check that the security EXIT jar file and associated files are located in the following configuration folder:

%CAOMWV12_HOME%/config/external_ExtSec_lib

If these files are not in the configuration folder, the administrator has to run the configuration tool at the system level or at the application level for a specific CA OM Web Viewer instance. If the EXIT jar file exists, check that SecurityEXITSPI.jar is in the same folder as the EXIT jar.

External Security Service is not configured.

External Security Service is not configured.

Reason:

The CA OM Web Viewer instance is not configured to use External Security EXIT for user authentication.

Action:

The administrator has to run the configuration tool at the system level or at the application level for a specific CA OM Web Viewer instance to enable the External Security EXIT service for user authentication process.

No user roles for External Security are available.

No user roles for External Security are available. Contact your System Administrator.

Reason:

CA OM Web Viewer cannot find user roles that are defined for users authenticated through the External Security EXIT.

Action:

The administrator has to log in to CA OM Web Viewer as a System Administrator to create roles with a role profile named EXIT before any EXIT calls for the user authentication.

Security Exit is not implemented properly. It returned invalid data or threw an exception.

Security Exit is not implemented properly. It returned invalid data or threw an exception. Contact your System Administrator.

Reason:

CA OM Web Viewer catches an exception error that is thrown from the External Security EXIT, or the date that is returned from the EXIT is invalid.

Action:

The administrator or EXIT developer has to check that their implementation of the security EXIT catches all exceptions, including RuntimeException and subclasses of RuntimeException. Also, ensure that the EXIT does not return invalid data such as null points for UserContext or RepositoryContext. If there is any code defect, the administrator has to provide a code fix and create a new EXIT jar file. Then, copy the new EXIT jar file to the system level external configuration folder:

%CAOMWV12_HOME%/config/external_ExtSec_lib

The administrator can run the configuration tool at the system level or at the application level for a specific CA OM Web Viewer instance to update the EXIT jar.

UI Messages for User Errors

OM Web Viewer includes a set of error messages that are caused by user errors. Messages are displayed in the Web Viewer Login page.

Messages

The session is already active. Please use a new web session for a new login.

The session is already active. Please use a new web session for a new login.

Reason:

The CA OM Web Viewer does not allow users to have more than one login instance using the same session for security risk concerns. If a user closes the browser tab without logging out from Web Viewer and logs back in from a new tab within the same browser window, this error message is displayed in the Web Viewer login page.

Action:

The user has to create a new web session by using File/New session menu command in Internet Explorer or using New Private Browsing Window in Firefox to open the Web Viewer login page for a new login.

Appendix B: Uninstalling CA Output Management Web Viewer

You can manually uninstall CA OM Web Viewer.

Follow these steps:

1. Find the uninstaller.
   - Windows: Find the uninstaller shortcut in the programs menu.
   - Other operating systems: Under the *uninstaller* folder in your install directory, find a program called *uninstaller* or *uninstaller.jar* and run it; for example, type *./uninstaller* or *java -jar ./uninstaller.jar* under this folder.

     The command java -jar requires that java is included in your PATH. Alternately, you must include the full path to the java executable in the command.
2. Run the uninstaller and follow the instructions.

Appendix C: Upgrading from a Previous Release

CA OM Web Viewer Version r12.1 has two upgrade paths depending upon the currently installed release.

This section contains the following topics:

Upgrading from 11.0 or 11.5 to 12.1

CA OM Web Viewer Version r12.1 does not support a direct upgrade from release 11.x. However, most of the configurations that were done can be migrated, using the *Web Viewer 11.5 Database Export* tool in the current version. The tool processes select configuration settings from an r11.0 or r11.5 database. The tool exports the settings to (three) XML files that can be then uploaded into the Version r12.1 administration database through the import feature in Version r12.1.

Important! The CA OM Web Viewer Version r12.1 installation does not replace, or otherwise impact, an existing r11.5 product installation. This includes the database upgrade procedure. The database upgrade does not alter the existing r11.5 database, but, only exports (copies) the r11.5 administrative configuration to a format that can then be imported into the Version r12.1 database.

Supported Configuration Settings

The following *definitions* can be migrated from the r11.0 or r11.5 database to r12.1:

- Folder definitions for the DRAS folder are migrated as Repository Objects.
  - The Repository Object name is set to the Folder name.
  - Local and Document Server folders support is dropped for r12.1 and are not migrated.
- Generic users with folder set definitions are combined and migrated as Role Objects.
  - The Role Object name is set to the (generic) user name.
  - Additionally, Role Objects are derived for defined (non-generic) Users. The Role Object name is set to a value like DerivedRole_00000001.

- Defined (non-generic users that are defined through the AdmTool) and Personal User accounts are migrated as User Objects.
  - The User Object name is set to the user name.
  - Defined users are assigned to the Role Object derived from the user definition.
  - Personal user accounts are assigned to the Role Object based on its generic user definition.
  - Temporary users (users who log in using generic credentials) are not migrated.

Export the Database

Important! The CA OM Web Viewer r11.5 Database Export can be run from a computer which has access to the Microsoft SQL Server system that holds the r11.0 or r11.5 database. You do not require access to the computer where r12.1 is installed (the copy/move of the resulting XML files are beyond the scope of this application). You can use the export tool on any platform of the CA OM Web Viewer install if a JDBC driver URL is provided.

You can export the database any time after installing and deploying CA OM Web Viewer r12.1, but, before the repositories, roles, and users are exported.

Export Using the Console

The Web Viewer r11.5 Database export tool is located under the *util* directory, after installing CA OM Web Viewer.

Note: If you chose to install the embedded Apache Tomcat you must start the embedded Apache Tomcat at least once, before you can start the migration tool.

You can now start the application through the console and export the required database.

Follow these steps:

1. To begin the export process, execute the following command:

   DVWEB_MigrationTool_Console_mode

   The introduction to the application displays.
2. Review the displayed instructions.
   a. Use the command back to modify a previous step.
   b. Use the command quit to end the export, at any time.
3. Press Enter to continue.

Enter the Microsoft SQL Server Information

The CA OM Web Viewer r11.5 (or older) database resides on a Microsoft SQL Server. Enter the Microsoft SQL Server information to connect to this database.

Follow these steps:

1. Provide the required Microsoft SQL Server information.

   SQL Node Name

   Defines the name of the computer where the Microsoft SQL Server, that contains the r11.0 or r11.5 database, resides.

   (Optional) SQL Instance Name

   Defines the Microsoft SQL Server instance name, if you are not using the default instance.

   Note: Press Enter if you have no instance.

   SQL Port

   Defines the Microsoft SQL Server port. Press Enter to accept the default. If you are not using the default port (likely if using a named instance), enter the port number.

   Default: 1433

   SQL UserID

   Defines the Microsoft SQL Server user ID.

   SQL Password

   Defines the Microsoft SQL Server password.

   The SQL information is validated and the CA OM Web Viewer databases are detected. If the information is incorrect, you are prompted to start again.

Select the Database

You can select the required Microsoft SQL Server database from the list of displayed databases, by its number, and then press Enter.

Example

```
Select the SQL Database by number:

    1    dvweb_r11    11.5
```

If the database you want to export is not displayed, you can exit through the *quit* command or change Microsoft SQL Server information through the *back* command.

Specify the Output Folder

You can specify the output folder directory to receive the XML files (exported settings).

If the specified folder does not exist or you do not have sufficient write permissions, you are prompted to specify another folder.

Note: The output files on the USS platform are written in EBCDIC encoding. Convert these files to ACSII before you use the files. Use the ftp command from the windows command line, and download the file in ASCII mode. This download converts the EBCDIC files to ASCII automatically.

Enter the CCI Server Information

The export tool has to resolve mainframe repository information which entails a DRAS Discovery. This can be bypassed for the following:

If the Common Communications Interface (CCI) Server is not accessible, enter *yes*.

Important! If you select this option, the repository type value is incorrect for any non-CA View repository. You can review and correct the values, after import into r12.1, through repository administration.

If all repositories are defined as CA View, you can select (yes) Bypass DRAS Discovery for a quicker export.

Follow these steps:

1. Complete the following information:

   Bypass DRAS discovery

   Defines whether to perform DRAS Discovery.

   Default: no

   CCI (Common Communications Interface) Server

   Defines the CCI Server (mainframe name or IP address).

   CCI (Common Communications Interface) Port

   Defines the CCI Server Port number.

   Default: 1202

Review the Options and Complete the Export

Review the entered information and your options through the selection summary and make any required changes.

Example

SQL Node Name

sqlserver.ca.com

Port

1433

SQL UserID

userid

SQL Password

password

Database Name

dvweb_r11

Output Directory

d:\temp

CCI (Common Communications Interface) Server

xyz77.ca.com

CCI (Common Communications Interface) Port

1202

Press Enter to export the database.

When the export is complete, the file names and folder are listed in the results.

Example

```
DRAS Discovery

Connecting to the source database...
0% done

Creating Repository records...
5% done

Creating Role records...
20% done

Creating User records...
50% done

Disconnecting from the source database...
70% done

Preparing data for export...
75% done

Export ending...
99% done
Export Complete.  Files...
Repository.xml
Role.xml
User.xml
created in folder
d:\temp.
```

Import the Database

Note: For information about how to use the Admin Import interface, see the *Online Help*.

1. Log in to [set to your product name] r12.1 using an account that has System Admin privileges.
2. Select the Administration tab, sub tab Repositories.

3. Click Import (above the Repository list).

   The Admin Object Import form displays.

   Note: The output files on the USS platform are written in EBCDIC encoding. Convert these files to ACSII before you use the files. Use the ftp command from the windows command line, and download the file in ASCII mode. This download converts the EBCDIC files to ASCII automatically.

4. Select Repository, and then browse and select the Repository.XML file that was created during export.

5. (Optional) Select Role and User, and then browse and select the Role.XML and User.XML files that were created during export.

   Note: If you are doing individual imports, use the following order:

   - Repository
   - Role
   - User

   Otherwise, Repository-to-Role and Role-to-User assignments can be lost.

6. Click Import to perform the import.

   a. If Role.XML was not previously processed, select the sub tab Roles and then repeat steps 3-6 for Roles.

   b. If User.XML was not previously processed, select the sub tab Users and then repeat steps 3-6 for Users.

Additional Tasks

After you import the repositories, roles, and users into Web Viewer Version r12.1, it is important to review the resulting r12.1 objects.

- Review Repository objects

  Important! If the DRAS Discovery was either bypassed during the r11.0 or r11.5 export or the DRAS tasks were inactive or inaccessible, the Repository Type is incorrect for any CA Dispatch or CA Bundl repository. You can correct the Repository Type before users can access.

  - If you plan to use DRAS load balancing, select Alternate Locations for the affected repositories.
  - Review and update, the repository Definition and Properties as needed.
  - Index rules defined in r11.5 are not exported. Rules must be redefined through Properties, Filter under the Index Filter section.

- Review Role objects
  - Nongeneric users defined in r11.0 or r11.5, *derived roles* are exported to Version r12.1. The result Role Object names are set to values like DerivedRole_00000001 (the actual name can be localized). Rename as appropriate.
  - Roles that are created from generic users are named after the generic account. Rename as appropriate.
  - Review and update the role Definition and Properties. In particular, the Role Type, as needed.
- Review User objects
  - Review and update the user information as needed.

Upgrading from 12.0 to 12.1

CA OM Web Viewer 12.1 is compatible with the prior 12.0 release, allowing for all settings (configuration files and database) to be migrated. The migration procedure is a set of steps that consist of backing up certain folders and files then using these when configuring the new release.

Important! If using an external database system, you may choose install and configure OM Web Viewer 12.1 to use the same database system thereby bypassing migration procedures that follow. The database contains the administrative customization (repository, role, and user definitions) and end-user personalization (saved preferences, Web Viewer-managed favorites, etc.). Performing the normal installation configuration tool steps, while referencing the prior release database, will also accomplish the migration. The one exception where migration is necessary is when the internal database option was used - the internal database must be migrated.

Determine your Upgrade Scenario

When upgrading from the 12.0 take the following information into consideration:

- Java web application server used.
  - Stand-alone Apache Tomcat using Web Viewer installer produced WAR files.
  - Apache Tomcat installed by Web Viewer using pre-deployed application files (no WAR).
  - IBM WebSphere using Web Viewer installer produced EAR file.
- Database application used.
  - Internal database option (Apache Derby embedded database). With IBM WebSphere, the database files may be stored either under the WebSphere program folder or under the deployed Web Viewer application folder; the database need not be backed up if under the WebSphere product folder.
  - External Database.

Select the configuration type to be used with 12.1 (refer to Choosing a Configuration Type topic in chapter 3 for more information):

- External System Level Configuration (recommended)
- Application Level External Configuration
- Application Level Internal Configuration

Back-up Needed Configuration Settings and Files

Migrating to the new release of Web Viewer consists of backing up (copying) select folders and files from the current release, for use in configuring the new release. This will preserve the prior configuration allowing for the new release to be ready to run with end-users experiencing no loss of customization.

Backup from deployed instance

Perform these steps before un-deploying the prior release from your Java web server.

1. Locate the deployed application folder.

   Apache Tomcat

   a. Locate the Tomcat webapps folder. For example, (stand-alone Tomcat) C:\Program Files\apache-tomcat-7.0.42\webapps\ or (Tomcat include with 12.0) C:\Program Files\CA\CA_OM_Web_Viewer\apache-tomcat-6.0.32\webapps

   b. Locate the Web Viewer application instance under the webapps folder. By default, folder CAOMWebViewer12.

   IBM Web Server

   a. Locate the WebSphere InstalledApps NodeCell folder. For example, C:\Program Files\IBM\WebSphere\AppServer\profiles\AppSrv01\installedApps\MachinenameNode01Cell

   b. Locate the Web Viewer application instance under the NodeCell folder. By default, folder CAOMWebViewer12_ear.ear\CAOMWebViewer12.war

2. Under the application instance folder, locate the config folder.
3. Back-up this folder (config) to a location outside of C:\Program Files. These are the primary Web Viewer configuration files.
4. Optional: If using DB2 as the database server, backup the DB2 license file. These steps may be skipped if the DB2 license file is saved elsewhere.

   a. Under the application instance folder, locate the WEB-INF\lib folder.

   b. In the WEB-INF\lib folder, locate your DB2 license file. For example, db2jcc_license_cisuz.jar

   c. Backup this file to a location outside of C:\Program Files.

5. Optional: If using external "local JDBC driver" as the database server, backup the JDBC driver file. These steps may be skipped if the JDBC driver file is saved elsewhere.

   a. Under the application instance folder, locate the WEB-INF\lib folder.

   b. In the WEB-INF\lib folder, locate your JDBC driver file. For example, mysql-connector-java-5.1.26-bin.jar (for MySQL).

   c. Backup this file to a location outside of C:\Program Files.

6. Optional: If using the internal database option (Apache Derby embedded database), back-up the database folder and files. These steps may be skipped if using the external database option.

   Apache Tomcat

a. Stop the Java web server. The database files may be in use at the time of the backup step, potentially resulting in a corrupt backup.

b. Locate the Tomcat webapps folder. For example, (stand-alone Tomcat) C:\Program Files\apache-tomcat-7.0.42\webapps\ or (Tomcat include with 12.0) C:\Program Files\CA\CA_OM_Web_Viewer\apache-tomcat-6.0.32\webapps

c. Locate the Web Viewer application instance under the webapps folder. By default, folder CAOMWebViewer12.

d. Under the application instance folder, locate the database\AdminDB folder.

e. Back-up this folder (AdminDB). These are DerbyDB database files - the Web Viewer administration and end-user settings.

IBM Web Server

a. These steps are not required if the database files are stored under the WebSphere program folder. Only needed if the files are under the deployed Web Viewer application folder.

b. Stop the Java web server. The database files may be in use at the time of the backup step, potentially resulting in a corrupt backup.

c. Locate the WebSphere InstalledApps NodeCell folder. For example, C:\Program Files\IBM\WebSphere\AppServer\profiles\AppSrv01\installedApps\MachinenameNode01Cell

d. Locate the Web Viewer application instance under the NodeCell folder. By default, folder CAOMWebViewer12_ear.ear\CAOMWebViewer12.war

e. Under the application instance folder, locate the database\AdminDB folder.

f. Back-up this folder (AdminDB). These are DerbyDB database files - the Web Viewer administration and end-user settings.

Backup from a WAR file

Perform these steps before un-installing the prior release. If using the internal database option (Apache Derby embedded database), the database backup steps must be performed before un-deploying the prior release from your Java web server.

1. Locate the WAR file with the current settings. By default, C:\Program Files\CA\CA_OM_Web_Viewer\deployable\CAOMWebViewer12.war
2. Extract the config folder & files from the WAR file using a ZIP-compatible utility.

   Example (using the JAR command from the Java JDK):

   jar -xvf CAOMWebViewer12.war config/
3. Backup this folder (config). These are the primary Web Viewer configuration files.
4. Optional: If using DB2 as the database server, backup the DB2 license file. These steps may be skipped if the DB2 license file is saved elsewhere.
   a. Determine the name of the DB2 license file. For example, db2jcc_license_cisuz.jar
   b. Extract the DB2 license file from the WAR file using a ZIP-compatible utility.

      Example (using the JAR command from the Java JDK):

      jar -xvf CAOMWebViewer12.war WEB-INF/lib/db2jcc_license_cisuz.jar
   c. Backup this file.
5. Optional: If using external "local JDBC driver" as the database server, backup the JDBC driver file. These steps may be skipped if the JDBC driver file is saved elsewhere.
   a. Determine the name of the local JDBC driver. For example, mysql-connector-java-5.1.26-bin.jar (for MySQL).
   b. Extract the local JDBC driver file from the WAR file using a ZIP-compatible utility.

      Example (using the JAR command from the Java JDK):

      jar -xvf CAOMWebViewer12.war
      WEB-INF/lib/mysql-connector-java-5.1.26-bin.jar
   c. Backup this file.
6. Optional: If using the internal database option (Apache Derby embedded database), back-up the database folder and files. These steps may be skipped if using the external database option.

   Apache Tomcat

   a. Stop the Java web server. The database files may be in use at the time of the backup step, potentially resulting in a corrupt backup.

b. Locate the Tomcat webapps folder. For example, (stand-alone Tomcat) C:\Program Files\apache-tomcat-7.0.42\webapps\ or (Tomcat include with 12.0) C:\Program Files\CA\CA_OM_Web_Viewer\apache-tomcat-6.0.32\webapps

c. Locate the Web Viewer application instance under the webapps folder. By default, folder CAOMWebViewer12.

d. Under the application instance folder, locate the database\AdminDB folder.

e. Back-up this folder (AdminDB). These are DerbyDB database files - the Web Viewer administration and end-user settings.

Backup from EAR file

Perform these steps before un-installing the prior release. If using the internal database option (Apache Derby embedded database), the database backup steps must be performed before un-deploying the prior release from your Java web server.

1. Locate the EAR file with the current settings. By default, C:\Program Files\CA\CA_OM_Web_Viewer\deployable\CAOMWebViewer12.ear
2. Extract the WAR file from EAR file using a ZIP-compatible utility.

   Example (using the JAR command from the Java JDK):

   jar -xvf CAOMWebViewer12.ear CAOMWebViewer12.war
3. From the WAR file that resulted in the prior step, extract the config folder & files from the WAR file.

   Example (using the JAR command from the Java JDK):

   jar -xvf CAOMWebViewer12.war config/
4. Backup this folder (config). These are the primary Web Viewer configuration files.
5. Optional: If using DB2 as the database server, backup the DB2 license file. These steps may be skipped if the DB2 license file is saved elsewhere.
   a. Determine the name of the DB2 license file. For example, db2jcc_license_cisuz.jar
   b. Extract the DB2 license file from the WAR file using a ZIP-compatible utility.

      Example (using the JAR command from the Java JDK):

      jar -xvf CAOMWebViewer12.war WEB-INF/lib/db2jcc_license_cisuz.jar
   c. Backup this file.
6. Optional: If using external "local JDBC driver" as the database server, backup the JDBC driver file. These steps may be skipped if the JDBC driver file is saved elsewhere.
   a. Determine the name of the local JDBC driver. For example, mysql-connector-java-5.1.26-bin.jar (for MySQL).
   b. Extract the local JDBC driver file from the WAR file using a ZIP-compatible utility.

      Example (using the JAR command from the Java JDK):

      jar -xvf CAOMWebViewer12.war
      WEB-INF/lib/mysql-connector-java-5.1.26-bin.jar
   c. Backup this file.
7. Optional: If using the internal database option (Apache Derby embedded database), back-up the database folder and files. These steps may be skipped if using the external database option.

   IBM WebSphere

a. Stop the Java web server. The database files may be in use at the time of the backup step, potentially resulting in a corrupt backup.

b. Locate the WebSphere InstalledApps NodeCell folder. For example, C:\Program Files\IBM\WebSphere\AppServer\profiles\AppSrv01\installedApps\MachinenameNode01Cell

c. Locate the Web Viewer application instance under the NodeCell folder. By default, folder CAOMWebViewer12_ear.ear\CAOMWebViewer12.war.

d. Under the application instance folder, locate the database\AdminDB folder.

e. Back-up this folder (AdminDB). These are DerbyDB database files - the Web Viewer administration and end-user settings.

Upgrade Configuration Settings and Files

Once the new release of Web Viewer is installed, the files backed up from the prior release can be migrated, minimizing the amount of further customization.

Upgrade using External System Level Configuration (Recommended)

Perform these steps after installing Web Viewer 12.1, but before performing configuration.

Important! If configuration of the new system has been done, this procedure replaces any settings already defined.

1. Locate the Web Viewer home folder (CAOMWV12_HOME). For example, C:\Program Files\CA\CA_OM_Web_Viewer
2. Locate the config folder.
3. Replace the contents of the 12.1 config folder with the backup files from the 12.0 config folder.
4. Optional: If using DB2 as the database server, use the backup DB2 license file.
    a. Under the 12.1 config folder, create a sub-folder named external_JDBC_lib (if the folder does not already exist).
    b. Copy the backup DB2 license file to the 12.1 config/external_JDBC_lib folder.
5. Optional: If using external "local JDBC driver" as the database server, use the backup JDBC driver file.
    a. Under the 12.1 config folder, create a sub-folder named external_JDBC_lib (if the folder does not already exist).
    b. Copy the backup JDBC driver file to the 12.1 config/external_JDBC_lib folder.
6. Optional: If using the internal database option (Apache Derby embedded database), use the backup database files.
    a. Under the 12.1 home folder (CAOMWV12_HOME), create a sub-folder named database (if the folder does not already exist).
    b. Copy the backup AdminDB folder into the database folder.
7. Run the OM Web Viewer configuration tool selecting Configuration Type 1 System Level External Configuration and then choose All Settings. Review all settings to ensure they are accurate. For the Database Settings for an external database, be sure to reselect your database (not the No Change selection) and then review each value.

Upgrade using Application Level External Configuration

Perform these steps after installing Web Viewer 12.1, but before performing configuration.

Important! If configuration of the new system has been done, this procedure replaces any settings already defined.

1. Determine the application context name. For example, CAOMWebViewer12_US. This value should match the name intended for the application-specific WAR or EAR file.
2. Locate the folder to store the application settings. By default, this would be the Web Viewer home folder (CAOMWV12_HOME). For example, C:\Program Files\CA\CA_OM_Web_Viewer
3. Create a sub-folder named after the application context name.
4. Copy the 12.0 config folder under the application-specific folder.
5. Optional: If using DB2 as the database server, use the backup DB2 license file.
   - Under the application-specific config folder (i.e. ./CAOMWebViewer12_US/config), create a sub-folder named external_JDBC_lib (if the folder does not already exist).
   - Copy the backup DB2 license file to the 12.1 config/external_JDBC_lib folder.
6. Optional: If using external "local JDBC driver" as the database server, use the backup JDBC driver file.
   - Under the application-specific config folder (i.e. /CAOMWebViewer12_US/config), create a sub-folder named external_JDBC_lib (if the folder does not already exist).
   - Copy the backup JDBC driver file to the 12.1 config/external_JDBC_lib folder.
7. Optional: If using the internal database option (Apache Derby embedded database), use the backup database files.
   - Under the application-specific (i.e. /CAOMWebViewer12_US), create a sub-folder named database (if the folder does not already exist).
   - Copy the backup AdminDB folder into the database folder.
8. Run the OM Web Viewer configuration tool selecting Configuration Type 2 Application Level External Configuration, select the WAR/EAR file, and then choose All Settings. Review all settings to ensure they are accurate. For the Database Settings for an external database, be sure to reselect your database (not the No Change selection) and then review each value.
9. Repeat all steps if setting up additional application instances.

Upgrade using Application Level Internal Configuration

Perform these steps after installing Web Viewer 12.1, but before performing configuration.

Important! If configuration of the new system has been done, this procedure replaces any settings already defined.

1. Locate the WAR or EAR file to be deployed. By default, C:\Program Files\CA\CA_OM_Web_Viewer\deployable file CAOMWebViewer12.war or CAOMWebViewer12.ear
2. If using the EAR file, extract the WAR file from EAR file using a ZIP-compatible utility.

   Example (using the JAR command from the Java JDK):

   jar -xvf CAOMWebViewer12.ear CAOMWebViewer12.war
3. In the same folder that contains the WAR file to receive the internal configuration, create the following folder structure:

   \<folder containing the WAR file>

   \config

   \WEB-INF

   \lib
4. Copy the files from the backup 12.0 config folder to the new config folder.
5. Optional: If using DB2 as the database server, use the backup DB2 license file.
   a. Copy the backup DB2 license file to the new WEB-INF\lib folder.
6. Optional: If using external "local JDBC driver" as the database server, use the backup JDBC driver file.
   a. Copy the backup JDBC driver file to the new WEB-INF\lib folder.
7. Add the config and WEB-INF\lib folders to the WAR maintaining the folder structure using a ZIP-compatible utility.

   Example (using the JAR command from the Java JDK):

   jar -uvf CAOMWebViewer12.war config/

   jar -uvf CAOMWebViewer12.war WEB-INF/
8. If using the EAR file, refresh the WAR file in the EAR file using a ZIP-compatible utility.

   Example (using the JAR command from the Java JDK):

   jar -uvf CAOMWebViewer12.ear CAOMWebViewer12.war

9. Run the OM Web Viewer configuration tool selecting Configuration Type 3 Internal Configuration, select the WAR/EAR file, and then choose All Settings. Review all settings to ensure they are accurate. For the Database Settings for an external database, be sure to reselect your database (not the No Change selection) and then review each value.

10. Optional: If using the internal database option (Apache Derby embedded database), use the backup database files. The internal database files should be migrated after Web Viewer has been deployed to the Java web server.

    Apache Tomcat

    a. After deploying the WAR file and ensuring the files have been deployed, stop the web server.

    b. Locate the deployed application folder.

    c. Locate the Tomcat webapps folder. For example, (stand-alone Tomcat) C:\Program Files\apache-tomcat-7.0.42\webapps\ or (Tomcat included with 12.0) C:\Program Files\CA\CA_OM_Web_Viewer\apache-tomcat-7.0.42\webapps

    d. Locate the Web Viewer application instance under the webapps folder. By default, folder CAOMWebViewer12.

    e. Under the application instance folder, locate the database\AdminDB folder. If this folder does not exist, create it.

    f. Copy the backup AdminDB files to the new AdminDB folders.

    IBM WebSphere

    a. These steps are not required if the database files are stored under the WebSphere program folder. Only needed if the files are under the deployed Web Viewer application folder.

    b. After deploying the EAR file and ensuring the files have been deployed, stop the web server.

    c. Locate the WebSphere InstalledApps NodeCell folder. For example, C:\Program Files\IBM\WebSphere\AppServer\profiles\AppSrv01\installedApps\MachinenameNode01Cell

    d. Locate the Web Viewer application instance under the NodeCell folder. By default, folder CAOMWebViewer12_ear.ear\CAOMWebViewer12.war

    e. Under the application instance folder, locate the database\AdminDB folder. If this folder does not exist, create it.

    f. Copy the backup AdminDB files to the new AdminDB folders.

Appendix D: Applying Maintenance Updates to CA OM Web Viewer

You can use the Update Installer to apply maintenance updates (for example, fixes) to CA OM Web Viewer 12.1.

Prerequisites

Meet these prerequisites:

- Do not run the update installer unless CA OM Web Viewer Version r12.1 is already installed on your system.
- Back up your current CA OM Web Viewer according to your application server environment before you run the update installer.
- The update installer replaces the <install_folder>\sampleExits folder. We recommend that you develop EXITs by using a copy of this folder *outside* the CA OM Web Viewer install location.

  Important! If you have done EXIT development in-place, back up this folder to avoid losing your custom EXIT source.

Run the CA Output Management Web Viewer Update Installer

To apply maintenance for CA Output Management Web Viewer, run the Update Installer.

Follow these steps:

1. Start the Apache Tomcat server, if you have not started it previously.
2. Stop the Apache Tomcat server.
3. Run the jar file that starts the Update Installer. For example, enter the following command:

   java -jar CA_OM_WEBVIEWER_12_1_Updt.jar

   The command java -jar requires that your Windows PATH statement includes the Java executable. If necessary, include the full path to the Java executable in the command.
4. Complete the steps for your operating system. The CA OM Web Viewer Update Installer automatically runs in the appropriate mode for your operating system:
   - GUI Mode (see page 170)—for Windows only
   - Console Mode (see page 173)—for all supported operating systems except Windows
5. Restart Tomcat.

Update Using the GUI Mode

Follow the steps in this section to install using the GUI mode.

Step 1. Introduction

Follow these steps:

1. Select a locale from the Choose Locale drop-down menu, and click OK.
2. Review the Introduction panel for information about the Update Installer and click Next.

Step 2. Select an Update Target

According to the deployment method of your existing version of CA OM Web Viewer, do one of the following:

- If the current CA OM Web Viewer is deployed on the embedded Apache Tomcat web server, do the following:
  - Click "Update Web Viewer running on an Apache Tomcat server"
  - Select the CA OM Web Viewer unzipped web application folder. This is the CA OM Web Viewer folder in the webapps directory of your Apache Tomcat.

    For example:

    "C:\Program Files\CA\CA_OM_Web_Viewer\apache-tomcat-7.0.42\webapps\CAOMWebViewer12"
- If you have a CA OM Web Viewer EAR file:
  - Select "Update a Web Viewer EAR file"
  - Specify the path of your EAR file CAOMWebViewer12.ear.

  Note: You will need to re-deploy the EAR file after the update.

  Important! For users of an embedded database, redeployment may overwrite your database. The embedded database should not be used for production.
- If you produced CA OM Web Viewer WAR files in your previous installation:
  - Select "Update Web Viewer WAR files"
  - Specify the paths of your WAR files, including CAOMWebViewer12.war and the supplementary WAR file castylesr5.1.3.war.

  Note: You will need to re-deploy these WAR files after the update.

  Important! For users of an embedded database, redeployment may overwrite your database. The embedded database should not be used for production.

Step 3. Backup the Original CA OM Web Viewer

The update installer backs up your original CA OM Web Viewer as a pair of WAR files (CAOMWebViewer12.war and the supplementary WAR file castylesr5.1.3.war).

Perform one of the following actions:

- Select a folder to store the backup files.
- Select "No backup."

Notes:

- The backup step is recommended.
- Verify that you have write permission to the backup folder. The update installer verifies whether this folder exists. If this folder does not exist, it is created after installation starts.

Step 4. Additional Copy of the Updated CA OM Web Viewer

The update installer generates an additional copy of the updated CA OM Web Viewer in a pair of WAR files (CAOMWebViewer12.war and the supplementary WAR file castylesr5.1.3.war) into a folder specified in this panel.

The additional copy is a backup of the updated CA OM Web Viewer and can be useful if the target being updated is locked by some other process.

Note: Verify that you have write permission to the folder. The update installer also checks to see if this folder exists. If this folder does not exist, it is created after installation starts.

Step 5. Complete the Installation

To complete the product installation, review the pre-installation settings and finish the installation.

Follow these steps:

1. Review the settings that the Pre-Installation Summary displays:

   Product Name

   CA Output Management Web Viewer r12.1

   Target to Apply the Updates

   C:\Program Files\CA\CA_OM_Web_Viewer\apache-tomcat-7.0.42\webapps\CAOMWebViewer12

   Backup Folder

   C:\Program Files\CA\CA_OM_Web_Viewer\backups

   Additional Output Folder

   C:\Program Files\CA\CA_OM_Web_Viewer\backups

2. Click Install.
3. Review the Install Complete information and click Done.
4. Click Done.

Update Using the Console Mode

The steps in this section explain how to install CA Output Management Web Viewer using the Console mode.

Step 1. Introduction and License Agreements

Follow these steps:

1. Choose a locale and press Enter to continue.
2. Review the introduction and press Enter to continue.
3. Review the License Agreements.
4. Enter Y to accept the license agreement.

Step 2. Select an Update Target

According to the deployment method of your previous version of CA OM Web Viewer, select one option from the list:

```
================================================================================
=====

Select an Update Target

----------------------

Enter requested information


  1- Update Web Viewer running on an Apache Tomcat server

  2- Update a Web Viewer EAR file

  3- Update Web Viewer WAR files


ENTER THE NUMBER OF THE DESIRED CHOICE:
```

Be aware of the following:

- If the current CA OM Web Viewer is deployed on an Apache Tomcat web server do the following:
  - Select "Update Web Viewer running on an Apache Tomcat server"
  - Enter the home folder of the Apache Tomcat server.

    This folder should contain a "bin" sub-folder and a "webapps" sub-folder; for example: "/usr/local/CA_OM_Web_Viewer/apache-tomcat-x.x.xx"

  ```
  ================================================================================

  Update Web Viewer running on an Apache Tomcat server

  ------------------------------------------------

  Enter the home folder of the Apache Tomcat server (DEFAULT: ):
  ```

- If you have a CA OM Web Viewer EAR file:
  - Select "Update a Web Viewer EAR file"
  - Specify the path of your EAR file CAOMWebViewer12.ear.

  ```
  ================================================================================

  Update a Web Viewer EAR file

  ---------------------------

  Enter the full path of the Web Viewer EAR file (DEFAULT: ):
  ```

You must re-deploy the EAR file after the update.

- If you produced CA OM Web Viewer WAR files in your previous installation:
  - Select "Update Web Viewer WAR files"
  - Specify the paths of your WAR files, including CAOMWebViewer12.war and the supplementary WAR file castylesr5.1.3.war.

```
================================================================================
Update Web Viewer WAR files

------------------------
Enter the full path of the Web Viewer WAR file (DEFAULT: ):
Enter the full path of the CA Styles WAR file (DEFAULT: ):
```

You must re-deploy these WAR files after the update.

Step 3. Backup the Original CA OM Web Viewer

The update installer backs up your original CA OM Web Viewer as a pair of WAR files (CAOMWebViewer12.war and the supplementary WAR file castylesr5.1.3.war).

Do one of following:

a. Select - Backup the original CA OM Web Viewer (Recommended)
   - Select a backup location.

b. Select No Backup

Notes:

- The backup step is recommended. If you do not need a backup by the update installer, select "No backup."
- Make sure you have write permission to the backup folder. The update installer will also check whether this folder exists. If this folder does not exist, it will be created after installation starts.

Step 4. Additional Copy of the Updated CA OM Web Viewer

The update installer generates an additional copy of the updated CA OM Web Viewer in a pair of WAR files (CAOMWebViewer12.war and the supplementary WAR file castylesr5.1.3.war) which is placed into the folder specified in this step.

The additional copy is a backup of the updated CA OM Web Viewer and might be useful in case the target being updated is locked by some other process.

Note: Be sure you have write permission to the folder. The update installer also checks to see if this folder exists. If this folder does not exist, it is created after installation starts.

Step 5. Complete the Installation

Follow these steps to complete the installation:

1. Review the settings displayed in the Pre-Installation Summary and Press Enter to continue.
2. Review the Install Complete information.
3. Press Enter to install.

Viewing the Update Install Installation Tracing and Log

This section provides you with instructions of how to review the logs that are produced by the updater installer of CA OM Web Viewer.

Note: When the update installation summary starts with Warning or Non-Fatal Failure the information about the error is logged in the installation logs.

Log Locations

There are three primary logs that are produced by CA OM Web Viewer update installation.

- Primary Update Install Log
- Update Install Standard Out
- Update Install Standard Error

Primary Install Log - CA_Output_Management_Web_Viewer_r12.1_Install_<date_time>.log.

Install Standard Out - CA_OM_WV_updater_standard_out.log.

Install Standard Error - CA_OM_WV_updater_standard_error.log.

Primary Install Log

The main install log is placed in:

$USER_INSTALL_DIR$/uninstaller/Logs

Note: If there is a failure early in the installation, or you cancel the installation then the log file may be placed in your Home folder in USS/Unix/Linux or on the Desktop on Windows.

The filename for the primary install log is:

CA_Output_Management_Web_Viewer_r12.1_Install_<date_time>.log

Install Standard Out

The install standard out is written to:

$TEMP$/CA_OM_WV_updater_standard_out.log

Note: The user temp folder can be found on the Windows by typing echo %TEMP% in the command prompt. The system temp folder on USS/Unix/Linux systems is often /tmp. For more information, on alternate USS/Unix/Linux system temp folder locations, see the OS documentation.

Install Standard Error

The installation standard error is written to:

$TEMP$/CA_OM_WV_updater_standard_error.log

Note: The user temp folder can be found on Windows by typing echo %TEMP% in the command prompt. The system temp folder on USS/Unix/Linux systems is often /tmp. For more information on alternate USS/Unix/Linux system temp folder locations, see the OS documentation.

Appendix E: Updating Apache Tomcat Server Installed with CA OM Web Viewer

CA provides a Tomcat Updater for CA OM Web Viewer to update the embedded Apache Tomcat server that is installed with the application.

This section contains the following topics:

Prerequisites

This section contains information about the prerequisites that must be in place to run the Tomcat update installer.

JVM (Java Virtual Machine) Version

You can run Tomcat Update Installer on Java Runtime Environment 1.6 or higher.

Update an Existing CA OM Web Viewer r12.1 or Later

The Tomcat Updater for CA OM Web Viewer is intended to update the Apache Tomcat software that was installed along with CA OM Web Viewer (at product installation, Install Set Full was selected).

Note:

- Do not run the Tomcat Updater for CA OM Web Viewer unless CA OM Web Viewer Version r12.1 with Apache Tomcat is already installed on your system.
- We strongly recommend that you back up your current CA OM Web Viewer according to your application server environment before you run the Tomcat Updater for CA OM Web Viewer.

Run the Tomcat Updater for CA OM Web Viewer

Update the Apache Tomcat server shipped with CA OM Web Viewer.

Follow these steps:

1. Obtain the CA OM Web Viewer APAR that contains the Apache Tomcat update. Refer to the included SpecialInstructions.txt for instructions on locating the installer file. Copy or transfer (binary) the file to the system where Web Viewer is installed.
2. It is recommended that you stop the Apache Tomcat web server prior to running the update.
3. Start the update installer as follows:

   Windows

   - Run CA_OM_WEBVIEWER_12_1_Tomcat.exe

   Linux/UNIX

   - Set the current folder to the one containing the update installer.
   - Launch the update installer with Java:

     java -jar CA_OM_WEBVIEWER_12_1_Tomcat.jar

Update Installation Modes

The Tomcat Update Installer for CA OM Web Viewer automatically runs in the appropriate mode for your operating system:

- GUI mode--for Windows only
- Console mode—for all supported operating systems except Windows

Update Using the GUI Mode

This section explains how to update using the GUI mode.

Follow these steps:

1. Review the Introduction panel for information about the Tomcat Updater for CA OM Web Viewer.
2. Click Next to continue.
3. Specify the folder where CA OM Web Viewer is installed. This folder is the parent of the apache-tomcat-n.n.n folder.
4. Click Install to begin the update.
5. Review the Install Complete panel for messages.
6. Click Done.

Update Using the Console Mode

The steps in this section explain how to install CA OM Web Viewer using the Console mode.

Follow these steps:

1. Review the Introduction panel for information about the Tomcat Updater for CA OM Web Viewer.
2. Press <ENTER> to continue.
3. Specify the absolute path where CA OM Web Viewer is installed. This is the parent of the apache-tomcat-n.n.n folder.
4. Press <ENTER>.
5. Verify the install folder is correct.
6. If correct, type Y.
7. Press <ENTER> to begin the update.
8. Review the Install Complete panel for messages.
9. Click Done.

Post-Install Actions

Tomcat Updater for CA OM Web Viewer places a newer build of Apache Tomcat under the CA OM Web Viewer installation folder. It will not replace the existing Apache Tomcat files (assuming APAR is not re-installed). The update does copy your WAR files and deployed applications from the older Tomcat to the new Tomcat. It also copies your primary web server port number.

Important! The update installer only preserves the Apache Tomcat connector port number customization. If any additional Apache Tomcat customization had been performed, these must be done again for the new Tomcat.

1. Review the prior Tomcat's /conf folder for customization.

   If any files have been customized, make the same changes to the new Tomcat's /conf folder.

   Note: Copy/replace of the /conf files is not recommended UNLESS you can confirm the older Tomcat's /conf files are compatible with the newer Tomcat.

2. Review your Apache Tomcat start-up procedures.

   - For Windows, the Tomcat update installer for Windows (EXE) will update the Windows Service to reference the new Tomcat location. Review this service to ensure proper update. Optionally set the service's start-up type to automatic.
   - If Tomcat was started on Windows via BAT files, review, update and use the BAT files under the (newer) Tomcat's /bin folder. The program group short-cuts were updated to reference the new BAT files.
   - For USS, if Tomcat was started via a mainframe started task (PROC), update your procedure JCL to reference the new Tomcat location.
   - For all other platforms where Tomcat is started via SH files, review, update and use the SH files under the (newer) Tomcat's /bin folder.

3. (Optional) Once you are satisfied with the updated Apache Tomcat server, ensuring all configuration settings were migrated and web applications deployed, you can delete the old Apache Tomcat folder.

Viewing the Update Install Installation Tracing and Log

This section provides you with instructions of how to review the logs that are produced by the Tomcat Updater for CA OM Web Viewer.

Note: When the update installation summary starts with Warning or Non-Fatal Failure the information about the error is logged in the installation logs.

Log Locations

There are three primary logs that are produced Tomcat Updater for CA OM Web Viewer.

- Primary Update Install Log
- Update Install Standard Out
- Update Install Standard Error

Primary Install Log - CA_Output_Management_Web_Viewer_r12.1_Install_<date_time>.log.

Install Standard Out - CA_OM_WV_updater_standard_out.log.

Install Standard Error - CA_OM_WV_updater_standard_error.log.

Primary Install Log

The main install log is placed in:

$USER_INSTALL_DIR$/uninstaller/Logs

Note: If there is a failure early in the installation, or you cancel the installation then the log file may be placed in your Home folder in USS/Unix/Linux or on the Desktop on Windows.

The filename for the primary install log is:

CA_Output_Management_Web_Viewer_r12.1_Install_<date_time>.log

Install Standard Out

The install standard out is written to:

$TEMP$/CA_OM_WV_updater_standard_out.log

Note: The user temp folder can be found on the Windows by typing echo %TEMP% in the command prompt. The system temp folder on USS/Unix/Linux systems is often /tmp. For more information, on alternate USS/Unix/Linux system temp folder locations, see the OS documentation.

Install Standard Error

The installation standard error is written to:

$TEMP$/CA_OM_WV_updater_standard_error.log

Note: The user temp folder can be found on Windows by typing echo %TEMP% in the command prompt. The system temp folder on USS/Unix/Linux systems is often /tmp. For more information on alternate USS/Unix/Linux system temp folder locations, see the OS documentation.

Appendix F: Sample JCL for Running a Bundled Tomcat Server as a Mainframe Started Task

If you are using the bundled Apache Tomcat server in the USS environment, be aware that the Apache Tomcat server can be alternatively run as a mainframe started task.

This appendix presents three examples that show the JCL that is required to load an Apache Tomcat server using JZOS.

Note: For the program JVMLDM##, ## is a number that corresponds to the version of your Java JZOS batch launcher load module.

The JCL examples are TOMCAT01, JZVM01, and PARM01.

- JZVM01 defines a procedure to execute JVMLDM60.
- TOMCAT01 loads this procedure in JZVM01 to start up Tomcat using the parameters that are defined in PARM01.
- PARM01 defines the required parameters.

Follow these steps:

1. Be sure to make all the necessary adjustments according to your environment.
2. To start the Apache Tomcat server, submit the JCL TOMCAT01.

This section contains the following topics:

JCL Examples (see page 186)

JCL Examples

In the examples that follow, the JCL members are located in the data set USSUTIL.JCL.

USSUTIL.JCL(TOMCAT01)

```
//[-----JOBCARD-----]
//*
//JZVMLIB  JCLLIB ORDER=USSUTIL.JCL
//TOMCAT01 EXEC PROC=JZVM01,VERSION='60',
// JAVACLS='org.apache.catalina.startup.Bootstrap',
// ARGS='start',LEPARM='TERMTHDACT(UADUMP)'
//STDENV   DD DISP=SHR,DSN=CHEPO03.USSUTIL.JCL(PARM01)
```

- Be sure to include a job card.
- Change “USSUTIL.JCL” to the name of the data set where these JCL items are located.
- “60” is the number that corresponds to your Java program version.

In this example, we use Java 6.0; execute the program JVMLDM60 to load the Apache Tomcat server.

USSUTIL.JCL(JZVM01)

```
//JZVM01   PROC JAVACLS=,  < Fully Qfied Java class..RQD
//   ARGS=,              < Args to Java class
//   VERSION='60',       < Version of JZOSVM module
//   LOGLVL='+I',        < Debug LVL: +I(info) +T(trc)
//   REGSIZE='0M',       < EXECUTION REGION SIZE
//   LEPARM=''
//JAVAJVM  EXEC PGM=JVMLDM&VERSION,REGION=&REGSIZE,
//   PARM='&LEPARM/&LOGLVL &JAVACLS &ARGS'
//SYSPRINT DD SYSOUT=*    < System stdout
//SYSOUT   DD SYSOUT=*    < System stderr
//STDMSG   DD SYSOUT=*    < Rerouted stderr
//STDOUT   DD SYSOUT=*    < Java System.out
//STDERR   DD SYSOUT=*    < Java System.err
//CEEDUMP  DD SYSOUT=*
//SYSUDUMP DD SYSOUT=4
//ABNLIGNR DD DUMMY
//CADVSTOP DD DUMMY       < Turn off CA-SYMDUMP processing
// PEND
```

USSUTIL.JCL(PARM01BK)

```
# This is a shell script which configures
# any environment variables for the Java JVM.
# Variables must be exported to be seen by the launcher.
export JAVA_HOME=/sys/java31bt/v6r0m1/usr/lpp/java/J6.0.1
TOMCAT_HOME=/CA_OM_Web_Viewer/apache-tomcat-7.0.42
```

```
LIBPATH=/lib:/usr/lib:"${JAVA_HOME}"/bin

LIBPATH="$LIBPATH":"${JAVA_HOME}"/bin/classic

LIBPATH="$LIBPATH":"${TOMCAT_HOME}"/lib

export LIBPATH="$LIBPATH":


CLASSPATH="${JAVA_HOME}/lib/tools.jar"

CLASSPATH="$CLASSPATH":"${TOMCAT_HOME}/bin/tomcat-juli.jar"

CLASSPATH="$CLASSPATH":"${TOMCAT_HOME}/bin/bootstrap.jar"

CLASSPATH="$CLASSPATH":"${TOMCAT_HOME}"/lib

export CLASSPATH="$CLASSPATH":


# Configure JVM options

IJO="-Xms256m -Xmx1024m"

IJO="$IJO -Dibm.serversocket.recover=true"

IJO="$IJO -Dsun.lang.ClassLoader.allowArraySyntax=true"

IJO="$IJO -Dfile.encoding=ISO8859-1"

IJO="$IJO -Dcatalina.base=${TOMCAT_HOME}"

IJO="$IJO -Dcatalina.home=${TOMCAT_HOME}"

IJO="$IJO -Djava.io.tmpdir=${TOMCAT_HOME}/temp"

IJO="$IJO -Dactivate.saf.manager=false"

export IBM_JAVA_OPTIONS="$IJO "
```

export JAVA_DUMP_HEAP=false

export JAVA_PROPAGATE=NO

export IBM_JAVA_ZOS_TDUMP=NO

Conditional:

IF External Configuration was selected for the 12.1 installation, add:

# New environment setting added for CA Output Management Web Viewer r12.1
CAOMWV12_HOME=<webviewer home path>

export CAOMWV12_HOME

Be aware of the following items:

- Modify "/sys/java31bt/v6r0m1/usr/lpp/java/J6.0.1" to point to the directory where your JZOS is installed.
- "CA_OM_Web_Viewer/apache-tomcat-7.0.42" is the directory where the Apache Tomcat server is installed.
- "1024m" is the maximum memory usage that is allowed for the Apache Tomcat server.

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