

# **GENESYS**

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# Workforce Management Administrator's Guide

Installing WFM Web

# Installing WFM Web

Before you install Workforce Management Web, you must consider ensure the prerequisites, and some web tools and applications are installed and configured on the WFM Web host computer. Use the Task Summary in this section to ensure you have adequately prepared the WFM host and your installation goes smoothly.

For information and procedures describing how to uninstall WFM Web, see Uninstalling Workforce Management.

### Task summary: Preparing and installing the WFM Web host

| Task   | Description and procedures  |
|--|---|
| Ensure the prerequisites are installed.  | Framework 7.6 or higher and Java SDK are required.  To learn which version of Java is required, consult the WFM section at the end of the table "Product Prerequisites" in the  |
| Install and configure Jakarta Tomcat.  | For installation and configuration instructions specific to Genesys Workforce Management, see   |
|  | Configuring Tomcat for WFM Web.   |
| Install the WFM Web application.   | See Choosing the Platform for WFM Web.  |
| Install a supported browser on each workstation that will access WFM Web.                        | For WFM Web for Supervisors, the browser installation must include the appropriate Java plugin. If this plug-in was not installed with the browser, download the plug-in from java.sun.com.  To learn which version of Java is required, consult the WFM section at the end of the table "Product Prerequisites" in the Genesys Supported Operating Environment Reference Manual.  Important to Note—If the computers that will be accessing WFM Web for Supervisors have pop-up blockers installed, they must be configured to allow popups from the WFM Web URL. Otherwise, pop-up blockers prevent WFM Web for Supervisors from opening.  The version of Java that you install must include the latest time zones update (TZ/Olson database). See java.sun.com for details and use the Java version that is specified there. |
| Ensure your browser and TCP/IP settings are configured to run WFM Web for Supervisors correctly. | See Browser Security Considerations and TCP/IP Connection Settings  |
| Verify that your window resolution has been set to display WFM Web correctly.                    | WFM Web is optimized for a window resolution of at least $1024 \times 768$ . At lower resolutions, some elements (such as table headers) might not display correctly.   |
| (Optional) Set up WFM Web as Report server.  | See Recommendations for WFM Web as a Report   |

| Task | Description and procedures |
|------|----------------------------|
|      | Server.                    |

# Browser security considerations

WFM Web uses technical approaches that might be affected by web browser security settings, such as:

- WFM Web uses signed Java applets on Supervisors' workstations.
- WFM Web uses Java applets on Supervisors' workstations that are run by Sun's Java Plug-in. On Windows operating systems, the Java Plug-in is running as ActiveX, which means that supervisors must have rights to run ActiveX controls.
- WFM Web uses non-encrypted form data in the login page for all users.
- WFM Web relies on active scripting for all users.
- When running WFM Web in an AIX or Solaris operating system environment, if the X Server software is not installed, reports might not be generated or might be generated incorrectly. In the case of WFM Web, X Server provides fonts and related functionality.

# TCP/IP connection settings

In environments with higher loads (more than 100 total supervisors or 50+ supervisors running agent real-time adherence views) you might need to change the default TCP settings on computers running the WFM servers: WFM Web, WFM Data Aggregator, and WFM Server. You can determine whether you need to adjust your settings by monitoring the number of TCP sockets in the TIMED\_WAIT mode. If the number exceeds 2000 on one computer or if WFM Web with servers start to report TCP socket errors, modify the settings to make TCP release port resources faster.

# Tip

Genesys has identified this issue on Windows-based machines. Similar changes are probably required for other operating systems. However, Genesys has not determined recommended adjustments to other operating systems.

To resolve this issue, you must make changes to the HKEY\_LOCAL\_MACHINE\SYSTEM\
CurrentControlSet\Services\Tcpip\Parameters\ section in the registry of the host computers.

You can find a reference for this registry modification in the Microsoft TCP/IP Implementation Details document for the appropriate operating system at <a href="https://www.microsoft.com">www.microsoft.com</a>.

Genesys recommends these values:

- Increase the **MaxFreeTcbs** configuration option value from 2000 to 9000.
- Increase the MaxFreeTWTcbs option value from 1000 to 8000.
- Increase the MaxHashTableSize option value from 512 to 2048.
- Increase the MaxUserPort option from value 5000 to 65534.
- Reduce the **TcpTimedWaitDelay** option value from 240 to 60.

# Configuring Tomcat for WFM Web

After installing WFM Web, use Tomcat Manager to deploy it or manually copy the .war file (by default, located in the WFM8\Web directory) to the Tomcat webapps directory.

#### Tip

When using Tomcat Manager to deploy WFM Web, you might need to increase the file size limit in the Manager's settings if the wfm.war file that is produced by the installer is too large to deploy with the default settings.

Tomcat is available for download at jakarta.apache.org. There is no charge for this program.

For basic installation and configuration instructions, see the Tomcat documentation, available at the same website as the program.

## Warning

Genesys developed and tested supported servlet containers using the default settings as configured for each particular servlet runner during installation time. Any changes to default settings are described in this document. If you use custom settings for servlet containers and experience issues while configuring and/or running WFM Web, Genesys recommends that you evaluate the impact of those custom settings. You might need to re-adjust them to ensure they do not interfere with the operation of WFM Web.

The following sections describe specific configurations that enable Tomcat to support WFM Web:

#### Set environment variables

When configuring Tomcat, add the variables JAVA\_HOME and CATALINA\_HOME to the Windows **Start** > **Settings** >; **Control Panel** > **System** > **Environment** > **System Variables** list. Enter the full path to each home directory for the values for theses variables. CATALINA HOME is the folder in which

Tomcat is installed.

#### JVM command-line settings

Tomcat's default settings are not suitable for production sites that experience moderate or heavy load. To support Web Services, you must enter the settings in the Table: Tomcat JVM Settings for the Java Virtual Machine (JVM) that runs Tomcat.

You can enter Tomcat settings in different ways, depending on your Tomcat version and configuration. Refer to your Tomcat documentation for details.

### **Table: Tomcat JVM settings**

| JVM Setting  | Purpose   |
|--|---|
| -Xms256m   | Instructs JVM to initially allocate 256 MB of memory for its own needs.   |
| -Xm×nm   | Determines the maximum amount of memory the JVM can allocate for its own needs. For example, -Xmx256m would allocate a maximum of 256 MB.   |
|  | If you are experiencing OutOfMemory exceptions with Tomcat, increase this setting's n parameter to provide Tomcat more memory. Make sure that enough physical memory is available to support the parameter that you choose. |
| -XX:MaxPermSize =256m                                    | Sets the size of the Permanent Generation, so Tomcat can run properly. 256 is the (mandatory) minimum value. This option is required only for environments in which Tomcat is configured to use versions prior to JDK 8.    |
| add-modules=java.se.ee                                   | Starts the WFM Web application when using Java 9+.  |
| add-opens=java.base/java.util=ALL-UNNAMED                | Opens access to the modules required to run WFM when using Java 9+.   |
| add-opens=java.base/<br>java.util.concurrent=ALL-UNNAMED | Opens access to the modules required to run WFM when using Java $9+$ .  |

WFM 8.5 requires settings changes to the Apache Tomcat Properties dialog, accessible by opening the file C:\Apache\Tomcat7.0\bin\tomcat7w.exe (the location on your computer might be different). Select the Java tab. See Table: Minimum Tomcat Java Settings.

#### **Table: Minimum Tomcat Java settings**

| Item                | Recommended setting |
|---------------------|---------------------|
| Initial memory pool | 1024                |
| Maximum memory pool | 4096                |

## End of support for Java Plug-Ins in browsers

Browsers no longer support Java plug-ins, starting with Java 9. As a workaround, WFM Web enables users to run Java views in browsers by generating and downloading the wfm.jnlp file, which launches automatically. It then starts as a standalone Java Webstart application, containing Javabased Web for Supervisor views. In some cases, you might have to save the wfm.jnlp file to your hard drive and start it as you would any other application.

You must enable the **RUN\_JAVA\_STANDALONE** option in WFM Web and be aware of some limitations when using a standalone Java Webstart application. For more information about using Java Webstart, see Changing WFM Web Application Settings and Limitations When Using Browsers That Do Not Support Java Plugs-Ins in the *Workforce Management Web for Supervisors Help*.

# Choosing the platform for WFM Web

Install WFM Web on either a Windows or a Unix-based platform:

- To install on Windows platforms, see Installing WFM Web (Windows).
- To install on Unix-based platforms, see Installing WFM Web (Unix).

#### Recommendations for WFM Web as a Reports server

Workforce Management no longer uses the WFM Reports server component found in previous WFM versions to generate reports. Instead, Workforce Management uses the WFM Web component to generate reports.

In addition to functioning as a Reports server, by default, WFM Web 8.1 continues to perform all its usual WFM Web functions.

Report generation requires the same, and sometimes more hardware requirements than other WFM Web functions, Genesys recommends that medium or large sites (as described in the *Genesys Hardware Sizing Guide*) install a separate WFM Web Server to function as a Reports server. If you are upgrading, use the same hardware previously used for the 7.2 WFM Reports component to set up 8.1 WFM Web as the Reports server.

To install WFM Web as the reports, see Installing WFM Web as Reports server.

# Procedures

Use the procedures below to install WFM Web.

#### Installing WFM Web (Windows)

**Purpose:** To install WFM Web on the Windows platform.

#### **Start Procedure**

- 1. On your Workforce Management release disk, navigate to the windows subdirectory in the solution specific\WFMWeb directory.
- 2. Double-click Setup.exe.

The WFM Web Installation Wizard opens.

- 3. Click **Next** to begin using the Wizard.
- 4. Enter your Configuration Server host name, port number, user name, and password, and then, click **Next**.

A list of WFM Web Application objects displays.

- 5. Select the correct **Application** object and then click **Next**. **The properties for each WFM Web Application object display in the Application Properties list when that Application is selected.**
- 6. Specify the destination directory into which you want to install WFM Web. Then, click Next.
- 7. In the **Ready to Install** window, click **Install**. **A progress bar shows the setup status.**
- 8. Click **Finish** to close the Installation Wizard.
- 9. Locate the WFM .war file in the directory where it was installed and move it to the directory for the web server you are using.

For example, if you are using Tomcat, deploy the .war file in the webapps directory.

#### **End Procedure**

#### Installing WFM Web (Unix)

**Purpose:** To install WFM on the Unix platform.

**Prerequisites**: The library **libnsl.so.1** should be installed on your system before starting the procedure.

#### **Start Procedure**

1. On your Workforce Management release disk, navigate to the appropriate subdirectory in the solution\_specific\WFMWeb directory.

Your choice of subdirectory depends on the platform on which you are installing WFM Web. The choices are AIX and Solaris.

- 2. Launch install.sh.
- 3. Enter this information for your Configuration Server: host name, port number, user name, and password.
- 4. Enter the name of your **WFM Web Application** object.
- 5. Specify the destination directory into which you want WFM Web installed.
- 6. Click Finish to close the Installation Wizard.

7. Locate the WFM .war file in the directory where it was installed and move it to the directory for the web server you are using.

For example, if you are using Tomcat, deploy the .war file in the webapps directory.

#### **End Procedure**

Installing WFM Web as a Reports server

**Purpose:** To install and configure a separate instance of WFM Web as the Reports server.

#### **Start Procedure**

- 1. Install WFM Web using the steps, as described in Installing WFM Web (Windows) or Installing WFM Web (Unix).
- In the Genesys Administrator, in the WFM Web Application properties, set the value for option [Reports] ServerURL, by entering the complete URL that was used to installed WFM Web. For example: http://<host>:<port>/<appname> In this example:
  - <host> and <port> refer to where the servlet container (the one that will function as the report server) for WFM Web is running.
  - <appname> is the name that is used while WFM Web is being deployed.

You will use this URL to login to the WFM Web Server that will function as the Reports server.

- 3. In the **Connections** tab of the **WFM Web Application** that will perform all the usual WFM Web functions except report generating, include the **Application** name of the **WFM Web Application** that will function as the Reports server.
- 4. In the Connections tab of the WFM Daemon Application include the Application name of the WFM Web Application that will function as the Reports server. Completing this step ensures the WFM Report Scheduler works.

#### **End Procedure**