Cisco WAE Design 7.6.0 GUI Installation Guide

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WAE Design GUI Installation

This section contains the following topics:

Overview

This section provides instructions for installing the WAE Design GUI. You additionally need to install the WAE Design license and if applicable, install the floating license server.

The installation process does not explain how to install any drivers or require any changes to the operating system. You can download and install the files to any folder or directory.

Prerequisites

The following are WAE design GUI installation prerequisites:

- A license is required for all features except for the example plan files. If you have questions about obtaining a license, contact your support representative or system administrator.

- Meet the necessary system requirements and package dependencies. For a list of these, see the "Installation Requirements" chapter in the *Cisco WAE Installation Guide*.

- If you are using the WAE Design GUI and the Parse Configs tool (File > Get Plan from > Configs), Java environment variables must be configured correctly, and JAVA_HOME or JRE_HOME must point to a valid JDK/JRE-11 installation.

  For example:

  - Linux—Enter the following command:

```
admin@system1 ~ # export JRE_HOME=<JDK/JRE_installation_path>
```

Linux Installation

Before you begin

Create an installation directory /opt/cariden or /opt/wae that has **wae** privileges.

Step 1   Download the digitally signed Cisco WAE Design software package from the Cisco download site.

Step 2   Verify and extract the digitally signed binary to a location of your choice. See Verification of Digitally Signed Images, on page 2.

Step 3   Enter the following command:

```
./WAE-Design-k9-7.6.0-Linux-x86_64.bin
```

Step 4   Choose the installation directory that you created at the beginning.

Step 5   Install and verify the license. See License Installation, on page 5.

Verification of Digitally Signed Images

The Cisco WAE Design software is digitally signed. This is to ensure that the WAE Design software running on your systems is secure and has not been tampered with, and that the software originated from a trusted source.

Verify Signed Images for Linux

Step 1   For Linux, the certificates and digital signatures are embedded in the downloaded files - `WAE-Design-k9-7.6.0-Linux-x86_64.signed.bin`.

Step 2   Run the self-extracting signed binary. This extracts the Release Binary and validates using the signature file.

Verification in Linux

```
[admin@wae-vm-21 workspace.signed]$ ./WAE-Design-k9-7.6.0-Linux-x86_64.signed.bin
Unpacking...
Verifying signature...
Downloading CA certificate from http://www.cisco.com/security/pki/certs/crcam2.cer ...
Successfully downloaded and verified crcam2.cer.
Downloading SubCA certificate from http://www.cisco.com/security/pki/certs/innerspace.cer ...
Successfully downloaded and verified innerspace.cer.
Successfully verified root, subca and end-entity certificate chain.
Successfully fetched a public key from WAE-CCO_RELEASE.cer.
Successfully verified the signature of WAE-Design-k9-7.6.0-Linux-x86_64.bin using WAE-CCO_RELEASE.cer
```

Step 3   The generated `WAE-Design-k9-7.6.0-Linux-x86_64.bin` is the Linux installer for WAE.

Run the Linux installer once more to extract the Linux binary.

Start WAE Design

To start WAE Design from the directory in which the WAE Design software is installed:

Step 1   Double-click the **wae_design** executable.

Step 2   From the CLI, enter:

```
./wae_design
```

(Optional) You can associate the plan file using the .pln format with the **wae_design** executable. Double-clicking a .pln file opens the plan in a new instance of the GUI.

License Installation

This section contains the following topics:

WAE Design Dedicated and Floating Licenses

A license is required for all features except for sample plan files used in the WAE Design application. If you have questions about obtaining a license, contact your Cisco support representative or system administrator.

Dedicated Licenses	Checked Out Floating Licenses	Borrowed Floating
• Each license is unique to a specific device. • Always available (until expiration). • No network connectivity is required. • Must be downloaded to an accessible device.	The FlexNet Publisher license server must be set up (usually by a system administrator). For information on setting up this license server, see the "WAE Design Floating License Server" chapter.	
	• A single license is shared among users who have permission from the license server. • You must have connectivity to the license server. • There are a maximum number of licenses, and you cannot check out one if they are all in use. • You must either download the floating license to an accessible device, or know the hostname and MAC address of the license server. To connect to a different port, you need to know the license server's port number. • Regardless of the method used, you must install the license one time. Thereafter, it is automatically checked out from the server when starting the GUI or any CLI tool. When the GUI is closed or the tool stops, the license is checked in to the license server for use by others.	• Users borrow licenses that are stored on the license server for a user-specified number of days. Other users cannot use the borrowed license. • You must install the license one time. Thereafter, it is available for borrowing. • After borrowing the license file once, it is available until you return it or until the number of days for which it is borrowed expires. If you do not return it, the license expires. • Connectivity to the license server is required to borrow a license, but is not required when using a borrowed license. You must also have connectivity if returning a borrowed license prior to its expiration date. • You cannot borrow a license if a dedicated license is already installed.

Cisco Smart Licensing

Cisco offers Smart Licensing, which enables you to monitor Cisco WAE software licenses and endpoint license consumption easily and efficiently through a simple registration and license consumption reporting process instead of having to install node-locked license files. Details of all Cisco products and licenses that you have purchased are maintained in a centralized database called the Cisco Smart Software Manager (CSSM). For more information, refer to the Cisco Smart Licensing Overview on Cisco.com. To enable Smart Licensing in WAE Design, you must install the WAE server with the Smart Licensing feature enabled. Follow the steps outlined in the "Cisco Smart Licensing" section in the *Cisco WAE Server Installation Guide*.

Install a License from WAE Design

To use the WAE Design GUI, you need either a dedicated license or a floating license. *Regardless of the license type or method of installation, you need only install it one time*. If it is a floating license, thereafter when you start WAE Design, the floating license is available to check out or borrow.

To verify a license and its features, choose **File > License > Check**.

Install a License

Before you begin:

- Confirm that you have the license on an accessible device.

- For floating licenses, the FlexNet Publisher license server must be set up (usually by a system administrator).

Step 1   From the WAE Design, choose **File > License > Install**.

Step 2   Do one of the following:

    a. If you are installting a dedicated license, choose **From license file**. Click **Browse** to navigate to the location or enter the name of the license file (.lic extension).

    b. If you are installing a floating license from the license server (that is, you do not have the license file), choose **Specify license server**. Enter both the hostname and the MAC address of the license server. The MAC address must be a 12-digit hexadecimal number without any colon (:) separators.

        If the port is not specified, ports 27000-27009 are scanned to find the license server port and connect to it. Optionally, you can enter the license server's TCP port number using a range of 1024 to 65535. The default license server port is 27000.

        If the MAC address of the license server is entered incorrectly, the WAE Design Client prompts an error stating: **Incorrect number of licensed nodes for feature MD_ArchiveUI.**. Enter the correct the MAC address of the license server to resolve the issue.

    c. If you are installing a smart license, choose **Use smart license.**. Enter the host on which WAE server is installed, port on which the WAE server listens for netconf messages, and WAE server login credentials (Username and Password).

Step 3   Click **OK** to confirm the license installation.

Note   Once license is installed, restart the WAE Design client to pickup the installed license.

Borrow and Return a Floating License

If you have installed a floating license, you can borrow a license from the server for up to 30 days. The license is automatically returned to the license server at 11:59 p.m. on the last day (based on the local time on the floating license server).

You must have connectivity to the floating license server to borrow a license or to return it prior to the specified date. Connectivity is not required, however, during the period of time for which you are borrowing the license.

The number of remaining available days for the license is listed under **File > License > Borrow**. To determine the exact date on which the license will expire, choose **File > License > Check**.

Borrow a Floating License

To borrow a floating license:

Step 1   In WAE Design, choose **File > License > Borrow**.

Step 2   Enter the number of days you want to borrow the license (integer from 1 to 30), and click **OK**.

Return a Floating License

To return a floating license:

Step 1   In WAE Design, choose **File > License > Return.**

Step 2   Enter the number of days you want to borrow the license (integer from 1 to 30), and click **OK**.

Install a License from the CLI

You can use the CLI to install licenses for all products. For each license you are installing, run the license_install tool. When prompted, enter the number associated with the directory in which you want to install the license.

By default, when using license_install -file, the tool merges the features granted by the new license with those in an existing license.

Install a Dedicated License

If you are installing a dedicated license, pass the name of the license file (.lic extension). By default, the tool merges the features granted by the new license with those in an existing license.

```
license_install -file <path>/<filename>.lic
```

When prompted, enter the number associated with the directory in which you want to install the license.

By default, when using license_install -file, the tool merges the features granted by the new license with those in an existing license.

Install a Floating License

If you are installing a floating license from the license server (that is, you do not have the license file), use both the -server-host and -server-mac options. The MAC address must be a 12-digit hexadecimal number without any colon (:) separators.

```
license_install -server-host <license_server_hostname> -server-mac
<license_server_MAC_address>
```

If the -server-port option is not specified, ports 27000-27009 are scanned to find the license server port and connect to it. Optionally, you can enter the license server's TCP port number using a range of 1024 to 65535. The default license server port is 27000. Example:

```
license_install -server-host lic.cisco.com -server-mac 1a2b3c4d5e6f -server-port 27000
```

To borrow a license, use the license_borrow command and specify the number of days (integer from 1 to 30). Example:

```
license_borrow -num-days 23
```

To return a license, use the license_return command. There are no required or optional options.

Verify a License

Run the license_check tool. To see descriptions of the license features, use the -detail option (which defaults to true). Example:

```
license_check -detail
```

To determine the number of days before the license expires and the exact date on which the license expires, use the license_check command.

WAE Design Floating License Server

This section contains the following topics:

About FlexNet Publisher Licenses

The FlexNet Publisher license server must be set up if WAE Design users are to use floating licenses. Using this server, you can control access to the licenses, monitor who has them checked out, and check log activity.

The FlexNet Publisher license server has two interfaces. One is a CLI, which requires that you start an lmgrd daemon so all users can access the floating licenses. The other is a web UI, where you must install and configure an lmadmin tool. Best practice is to use only one or the other interface (CLI or web) to administer the license server.

- For information about FlexNet Publisher and for more details on all FlexNet Publisher CLI commands and GUI, refer to the *FlexNet Publisher License Administration Guide* (`FlexLM_EndUser_LicAdmin.pdf`). This is located in `$CARIDEN_HOME/docs`, which by default is `/opt/cariden/software/mate/current/docs`. This section includes some FlexNet Publisher instructions for both the CLI and GUI that could change without Cisco's knowledge.

- All instructions and examples assume you used `/opt/cariden` as the default installation directory. If you did not, substitute your installation directory for `/opt/cariden`.

- Throughout this section, bin is `/opt/cariden/software/flexlm/current/bin`.

Prerequisites

- You must have the required packages installed. For a list of package dependencies, see the "Installation Requirements" chapter in the Cisco WAE Installation Guide.

• You must have a WAE Design floating license installed on the same device or VM as the FlexNet Publisher floating license server, which means you must have WAE Design installed. Contact your Cisco representative for this license, and see License Installation to install this license.

Pre-Installation

Note   If you are installing the FlexNet Publisher license server on a different Linux device than the one on which a WAE server installation resides, complete Step 1 to Step 3. Otherwise, skip to Step 4. Follow all steps on the device where the FlexNet Publisher license server resides.

Step 1   Log in to the FlexNet Publisher license server as root or as a user with administrative capabilities.

Step 2   Create a lowercase, alphanumeric username where the first letter is an alphabetical character.

```
/usr/sbin/useradd <username>
```

Step 3   Set a password.

```
passwd <username>
```

Step 4   Create an installation directory that has root privileges. The best practice is to use the default installation directory, which is /opt/cariden.

```
cd ~/
mkdir -p /opt/cariden
```

Step 5   Change the owner of the installation directory to the newly created user.

```
chown <username> /opt/cariden
```

Step 6   Verify that there are no local firewalls blocking the services. For a list of ports used, see the "Installation Requirements" chapter in the *Cisco WAE Installation Guide*.

The following example shows how to disable the iptables firewall as root:

```
service iptables save
service iptables stop
sudo chkconfig iptables off
```

Step 7   Check if the redhat-lsb (Linux Standards Base) package is installed. This package is required to run the FlexLM license server.

```
yum list installed | greb redhat-lsb
```

If it is not there, then install it.

```
yum install redhat-lsb
```

Step 8   If you already have a license server installed and running, enter one of the following commands to stop it gracefully:

```
bin/lmdown -c <license_file>
bin/lmdowm -all
```

If the server is distributing borrowed licenses, enter one of the following commands:

```
bin/lmdown -c <license_file> -force
bin/lmdowm -all -force
```

Step 9 Download the License Server Software package from the Cisco WAE Automation software download site. You must download a new license package regardless of whether this is an upgrade or a new installation.

Step 10 The WAE Design license file's SERVER statement must be the same hostname as the output from the hostname CLI command.

    a. Determine the hostname.

```
hostname
```

    b. Edit the /etc/sysconfig/network file to include the hostname returned in the preceding step.

```
HOSTNAME=<hostname>
```

Step 11 Ensure that the /etc/hosts file on the client devices contains the same hostname as identified in Step 4.

Install License Server

Before you begin

Confirm that you have the Cisco WAE License Server installer package (WAE_License_Server-3.0-Linux-x86_64.sh) downloaded from the WAE Automation Software Download site.

Step 1 Upload or copy WAE_License_Server-3.0-Linux-x86_64.sh into the WAE server. Make it an executable file owned by waeuser:

```
chmod 775 WAE_License_Server-3.0-Linux-x86_64.sh
chown wae:wae WAE_License_Server-3.0-Linux-x86_64.sh
```

Step 2 As waeuser, run the installation:

```
# su – wae
sh WAE_License_Server-3.0-Linux-x86_64.sh
```

Start License Server

To start the license server, you must have access to its license file, which is not the same as the WAE license. Download the floating license server file (.lic extension) to a directory of your choice on the device where the license server will be installed. The best practice is to put it in /opt/cariden/etc.

To start the CLI server daemon (lmgrd) and specify the lmgrd log file name and location, enter the following from /opt/cariden/software/flexlm/current/bin:

```
./lmgrd -c <license_filename> -l <log_path_filename>.log
```

Post-Installation

Log Files

By default, the lmadmin logs are in /opt/cariden/software/flexlm/web/logs.

The lmgrd log files are located wherever you specified the <log_path_filename> .log when starting the lmgrd daemon (lmgrd -l <log_path_filename> .log).

Verify Ports

To verify the ports, you can use any of several methods, as follows:

Step 1 Verify the license server daemon port is running. For example, you can telnet to this port to verify that it is running:

```
telnet <license_server_IP_address> <license_server_daemon_port>
```

For example:

```
telnet 127.0.0.1 27000
```

Step 2 Verify the license server is listening to the specified port.

For example:

```
netstat -a | egrep '27000[0-9]'
```

Step 3 View the lmgrd log file, which indicates on which ports the license server and Cisco daemons are listening.

For example:

```
13:00:14 (lmgrd) lmgrd tcp-port 27001
13:00:14 (lmgrd) cisco using TCP-port 42207
```

Distribute Information to Clients

Either distribute the same floating .lic file that you installed to all WAE Design users who need it, or give them both the MAC address and hostname for the license server. Having users install licenses via the MAC address and port is the recommended practice since it eases administration.

After end users install the floating license once, the license is automatically validated from the server each time the user opens the WAE Design GUI or runs the CLI tools.

Licenses Configuration in crontab

Licenses enablement is also included as part of crontab for waeuser:

```
$ crontab -l
```

License files are located inside the /opt/wae/.cariden/etc/ directory and cover up to all devices:

```
$ ll /opt/wae/.cariden/etc/
$ lmstat
```

Licenses Configuration in crontab