



Install Cisco WAE Live

This section contains the following topics:

- [Verify WAE Live Image, on page 1](#)
- [Install Cisco WAE Live, on page 2](#)
- [Upgrade from Cisco WAE Live 7.1.x to Cisco WAE Live 7.2.2 , on page 3](#)
- [Migrate WAE 6.4.10+ Live Data to WAE Live 7.1.x, on page 3](#)
- [Cisco WAE Live Data Store, on page 7](#)
- [Install the Cisco WAE Live License, on page 13](#)

Verify WAE Live Image

Step 1 Download the Cisco WAE Live 7.2.2 software package from [Cisco Download Software](#) site.

Step 2 The certificate and digital signature are both embedded in the downloaded file -
WAE-Live-7.2.2-Linux_x86-64.signed.bin.

Step 3 Run the self-extracting signed binary. This extracts the Release Binary and validates using the signature file.

Verification of signed image

```
[admin@wae-vm-21 workspace.signed]$ ./WAE-Live-7.2.2-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-Live-7.2.2-Linux_x86-64.bin using WAE-CCO_RELEASE.cer
```

Step 4 The generated WAE-Live-7.2.2-Linux_x86-64.bin is the Linux installer for WAE.

Install Cisco WAE Live

Before you begin

- Cisco WAE Live cannot be installed on the same machine where the Cisco WAE 7.2.2 server software is installed.
- Confirm that the Cisco WAE Live server requirements are met (see [WAE Live Requirements](#)).
- Do not install Cisco WAE Live as a root user.
- Confirm that you have a Cisco WAE 7.2.2 Live license on the server.
- Make sure Java 11 is installed on the system and `JAVA_HOME` environment variable is pointing to `jdk-11.0`.
- WAE Live is installed in `$CARIDEN_ROOT/software/live`. For example: `/opt/wae/software/live` or `/opt/cariden/software/live`.
- If you plan to migrate Cisco WAE Live 6.4.9 or older data, first upgrade to Cisco WAE Live 6.4.10. Then, enter the same installation directory that was used in Cisco WAE Live 6.4.x when prompted to install Cisco WAE Live 7.2.2. For example, if `$CARIDEN_ROOT` is defined as `/opt/cariden` in Cisco WAE Live 6.4.x, then confirm that `$CARIDEN_ROOT` in Cisco WAE 7.2.2 is also defined as `/opt/cariden`.

Step 1 Navigate to and download the Cisco WAE Live package from the [Cisco Download Software](#) site.

Step 2 Log in to the server, copy the Cisco WAE Live package `<WAE-Live-7.2.2-Linux_x86-64.bin>` to a local directory, and start a bash shell.

Step 3 Install the Cisco WAE Live package.

```
# bash <WAE-Live-7.2.2-Linux_x86-64.bin>
```

Step 4 If prompted, install the required software packages using the `yum` command.

Step 5 Follow the installation prompts.

Step 6 After installation, set environment variables and source `~/.profile` to get the necessary settings.

```
# source ~/.profile
```

Step 7 Install Cisco WAE Live data store. For more information, see [Install WAE Live Data Store, on page 7](#).

Step 8 Start Cisco WAE Live services.

```
# wae-live-start
```

Note The data store must be configured before starting Cisco WAE Live.

Step 9 Start one of the supported browsers and enter `https://server-ip:8443`, where `server-ip` is the IP address of the server on which you have WAE Live installed. The default password for the `admin` user is "admin". The default password for the `user` user is "user". You will be prompted to change the default login credentials upon first login.

Upgrade from Cisco WAE Live 7.1.x to Cisco WAE Live 7.2.2

Before you begin

You must have Cisco WAE 7.1 or later installed to perform this upgrade. For Cisco WAE 6.4.x installations, see [Migrate WAE 6.4.10+ Live Data to WAE Live 7.1.x, on page 3](#).

Step 1 Stop the web server and mld.

```
# wae-live-stop
```

Step 2 Install Cisco WAE Live 7.2.2. For more information, see [Install Cisco WAE Live, on page 2](#).

Step 3 Stop mld if it is running.

```
# mld -action stop
```

Step 4 Execute the upgrade.

```
# mld -action upgrade
```

Step 5 Start the web server and mld.

```
# wae-live-start
```

Migrate WAE 6.4.10+ Live Data to WAE Live 7.1.x

On Live 7.1, install Live software to the same location as in live 6.4.10.

Before you begin

- **You can only migrate data from WAE 6.4.10 or later to WAE 7.1.x.** If you have an earlier WAE 6.x release installed, you must upgrade to at least WAE 6.4.10 before proceeding with the WAE 7.1.x upgrade.
- WAE Live 7.1.x and data store must be installed on a different machine than WAE 6.4.x. For installation steps, see [Install Cisco WAE Live, on page 2](#). In addition, the WAE Live 7.1.x installation directory and data store (mld) options must use the same directory path and mld options that was used for the WAE 6.4.x installation. For example, if WAE 6.4.10 was installed on `/opt/cariden`, then you must also install WAE Live 7.1.x in `/opt/cariden` in another server. mld parameters, such as CPUs, memory, storage, and so forth, must also have the same values. To view existing mld parameters, you can look in the `config.xml` file.
- The WAE Live 7.1.x data store must be installed before doing this procedure. For data store installation instructions, see [Install WAE Live Data Store, on page 7](#).
- You must continue to use the same WAE 6.4.x user ID (UID) and group ID (GID) after upgrading to WAE 7.1.x.

Step 1 Install WAE Live 7.1 software to the same location as WAE Live 6.4.10.

If in WAE Live 6.4.10, `CARIDEN_ROOT = /opt/cariden`, install WAE Live 7.1 to `/opt/cariden`.

Make sure the license for Live 7.1 is setup.

Step 2 On WAE Live 7.1 server, install `mld` with the same parameters as in WAE Live 6.4.10.

Example:

parameters

```
-cpus
-mem
-storage
-mldata
-datastore
-backup
```

Step 3 From the WAE Live 7.1.x server, stop the web server.

```
embedded_web_server -action stop
```

Step 4 From the WAE Live 6.4.x Live server, do the following:

a) Stop the web server.

```
service wae-web-server stop
```

b) Back up the WAE Live data store. For example:

```
ml_backup -L 0
```

Step 5 From the WAE Live 7.1.x server:

a) Back up the WAE Live data store. For example:

```
ml_backup -L 0
```

b) Edit parameters in `$CARIDEN_ROOT/software/mld/current/scripts/sqlhosts.ml`.

Example:

On the WAE Live 6.4.x server, `sqlhosts.ml` has the following:

```
ml_remote onsoctcp 172.131.130.112 9089
mltcp     onsoctcp 127.0.0.1    9088
ml        onipcshm 127.0.0.1    dummy
```

On the WAE Live 7.1.x server, change the `sqlhosts.ml` file to the following:

```
ml_remote onsoctcp <Live71_mld_IP_address> <Live71_port>
mltcp     onsoctcp 127.0.0.1    9088
ml        onipcshm 127.0.0.1    dummy
```

Step 6 Confirm that the data store directory (attribute in `config.xml`) is the same. If there are missing files on the WAE 7.1.x server, then create zero size files with the same name using the `touch` command and change the file permission to 600 for the newly created files.

Example:

On the WAE Live 6.4.10 server:

```
[cariden@wod1114 archives]$ cd $CARIDEN_ROOT/software/mld/current/data/
```

```
[cariden@wodl114 data]$ ls -la
total 63591328
drwxr-xr-x  2 cariden caridenstaff    4096 Dec  5 12:55 .
drwxr-xr-x 10 cariden caridenstaff    4096 Dec  5 12:35 ..
-rw-----  1 cariden caridenstaff 2147483648 Dec  5 13:01 catdbs001
. . . . .
-rw-----  1 cariden caridenstaff 4294967296 Dec  5 14:31 sbospace000
-rw-----  1 cariden caridenstaff 2147483648 Dec  5 14:54 tempdbs000
-rw-----  1 cariden caridenstaff 2147483648 Dec  5 14:54 tempdbs001
-rw-----  1 cariden caridenstaff 4294967296 Dec  5 14:54 tsdbs000
-rw-----  1 cariden caridenstaff 4294967296 Dec  5 14:54 tsdbs001
-rw-----  1 cariden caridenstaff 4294967296 Dec  5 14:31 tsdbs002000
-rw-----  1 cariden caridenstaff 4294967296 Dec  5 14:31 tsdbs002001
```

Example:

On the WAE Live 7.1.x server, the missing files are `tsdbs002000` and `tsdbs002001`:

```
$CARIDEN_ROOT/software/mld/current/data
[cariden@wodl113 data]$ ls -la
total 46814024
drwxr-xr-x  2 cariden caridenstaff    4096 Dec  5 01:56 .
drwxr-x--- 10 cariden caridenstaff    143 Dec  5 01:44 ..
-rw-----  1 cariden caridenstaff 2147483648 Dec  5 22:52 catdbs001
. . . . .
-rw-----  1 cariden caridenstaff 4294967296 Dec  5 22:50 sbospace000
-rw-----  1 cariden caridenstaff 2147483648 Dec  5 22:52 tempdbs000
-rw-----  1 cariden caridenstaff 2147483648 Dec  5 22:52 tempdbs001
-rw-----  1 cariden caridenstaff 4294967296 Dec  5 22:52 tsdbs000
-rw-----  1 cariden caridenstaff 4294967296 Dec  5 22:52 tsdbs001
```

You would then create zero size files so that WAE Live 7.1.x has the same contents as WAE Live 6.4.10.

```
touch tsdbs002000
touch tsdbs002001
chmod go-r tsdbs002000
chmod go-r tsdbs002001
```

Step 7

Copy the WAE Live 6.4.x data store backup file to the WAE Live 7.1.x server.

Example:

On WAE Live 6.4.x

```
scp $CARIDEN_ROOT/software/mld/current/backups/fullbackups/wodl114_1_L0
user@live71:$CARIDEN_ROOT/software/mld/current/backups/fullbackups/
```

Step 8 Rename the copied WAE 6.4.x data store backup file to the WAE 7.1.x backup file.

Example:

If WAE Live 7.1.x backup file is named `wodl113_1_L0`, then

```
mv $CARIDEN_ROOT/software/mld/current/backups/fullbackups/wodl114_1_L0
$CARIDEN_ROOT/software/mld/current/backups/fullbackups/wodl113_1_L0
```

Step 9 Stop WAE 7.1.x mld and restore the data store backup.

```
mld -action stop
ml_restore -directory $CARIDEN_ROOT/software/mld/current/backups/fullbackups
```

Step 10 Run a sanity check. This process may take awhile.

```
mld -sanity all
```

Step 11 Restart mld.

```
mld -action restart
```

Step 12 From the WAE Live 6.4.x server, do the following:

a) Check the `config.xml` file to see if the following attributes are set to specific directories. If not, it is specified under the `MLData` attribute and the default path is `$CARIDEN_ROOT/data/mldata/`:

- AppData
- Backup
- Map.ArchivePath
- ReportData

If these attributes are set, copy the data from the respective directory to the same directory in the WAE Live 7.1.x server.

b) If the preceding attributes are not set, then use the `tar` command to pack all the respective directories and copy `mldata.tar` to the same directory on the WAE Live 7.1.x server.

Example:

```
tar -cvf mldata.tar appdata/ archives/ customdata/ jobs/ plans/ reports/
```

Copy `mldata.tar` to the WAE Live 7.1.x server:

```
scp mldata.tar cariden@wodl113:$CARIDEN_ROOT/data/mldata/
```

On the WAE Live 7.1.x server, navigate to where the `MLdata` property values are located. For example:

```
cd $CARIDEN_ROOT/data/mldata/
tar -xvf mldata.tar
```

Step 13 From the WAE Live 6.4.x server, copy the following contents from `$CARIDEN_ROOT/etc` to the same path in WAE Live 7.1.x:

- a) `$CARIDEN_ROOT/etc/config/config.xml`
- b) `$CARIDEN_ROOT/etc/matelive`
- c) `$CARIDEN_ROOT/etc/user_manager`

Example:

```
# tar -cvf etc.tar config/ matelive/ user_manager/
config/
config/config.xml
config/config.xml.bak
matelive/
user_manager/
user_manager/auth.db.properties
user_manager/auth.db.script

# scp etc.tar <WAE_64x_host>:$CARIDEN_ROOT/etc/.
```

From WAE Live 7.1.x server, copy the `$CARIDEN_ROOT/etc` directory.

```
# cd $CARIDEN_ROOT/etc
# tar -xvf etc.tar
```

Step 14 Start the WAE Live 7.1.x web server and data store:

```
wae-live-start
```

Cisco WAE Live Data Store

This section describes how to install, upgrade, back up, and restore a Cisco WAE Live data store. It also describes how to purge data using the `ml_purge` tool.

If the defaults were used during installation, `$CARIDEN_HOME` is the same as `/opt/cariden/software/live/current`.

Install WAE Live Data Store

The following procedure describes how to install the Cisco WAE Live Data Store using `mld_tool`. The `mld` tool installs both the `mld` server and an empty data store directory.

Before you begin

- For better performance, create a separate ext2 partition for the directory that is specified with the `-datastore` option.
- Understand what type of production environment you want to create.

**Note**

- After the data store is created, it is difficult to modify any of the installation options (including the user name).
- A 'demo' data store is just for pilot purpose. If you start with 'demo', then you must recreate the data store when it is time to move to production and the data in 'demo' data store will be lost.

- The `-demo` or `-storage`, `-cpu` and `-memory` options are required. For more information on the mld command and options, see [mld Options, on page 8](#).

Step 1 If WAE Live is running, stop the web server:

```
# wae-live-stop
```

Step 2 Enter appropriate mld command to install the data store. For mld commands and options see [mld Options, on page 8](#).

Example 1: To be prompted through installation and obtain sizing recommendations:

```
# mld -installchk
```

Example 2: To install mld with a demo data store size:

```
# mld -action install -demo true
```

Example 3: To install a small mld server into `$CARIDEN_ROOT/data/matelive`, reserve 2 CPUs, reserve 542 GB of disk storage and allocate 2.2 GB (2200 MB) of memory:

```
# mld -action install -mldata $CARIDEN_ROOT/data/matelive -cpus 2 -storage 1:1:540 -memory 200:55:2000
```

Step 3 Start mld and the web server:

```
# wae-live-start
```

mld Options

Option	Description	Default
<code>-version</code>	Displays the data store version.	

Option	Description	Default
-action	<p><code>install</code> —Installs a new mld server and data store, and start the mld server.</p> <p><code>upgrade</code> —Updates an existing mld server and start the mld server.</p> <p><code>start</code> —Alternative way to start the mld server.</p> <p><code>stop</code> —Alternative way to stop the mld server.</p> <p><code>status</code> —Alternative way to show the status of the mld server.</p> <p><code>restart</code> —Alternative way to stop and then restart the mld server.</p>	<p>Default installation directory</p> <p><code>\$(CARIDEN_ROOT)/software/mld/current</code></p>
-installchk	Prompts you through installation and gives sizing recommendations.	
<p>Use only with -action install</p> <p>(If an option is not given, the installation performs the same tasks as <code>-installchk .</code>)</p>		
-demo true	<p>Installs a demo data store.</p> <p>Note If both <code>-demo</code> and <code>-storage</code> options are used, <code>-demo</code> takes precedence.</p>	
-storage <n:n:n>	<p>Allocates the disk and memory based on the anticipated data store size, where <n:n:n> is data:indices:timeseries in GB. For details and recommended values, use <code>-installchk</code> and <code>-verbose</code> options.</p> <p>Note If the data store is larger than the demo size, this option is required when using <code>-action install</code>.</p>	
-memory <n:n:n>	Allocates the requested memory of the data store, where <n:n:n> is data:indices:timeseries in MB. For details and recommended values, use <code>-installchk</code> and <code>-verbose</code> options.	
-mldata <directory>	Specifies directory where all application data is stored. This directory includes the data store, report output, and other application data.	<code>\$(CARIDEN_ROOT)/data/mldata</code>
-datastore <directory>	<p>Specifies directory where the data store is initialized.</p> <p>Once set, this directory cannot be changed. You can, however, use symbolic links.</p>	<code>\$(CARIDEN_ROOT)/data/mldata/datastore</code>

Option	Description	Default
<code>-cpus <#></code>	Reserves the number of CPUs for the data store and the mld server.	Half of the total CPUs
Use only with -action install or -action upgrade		
<code>-mld <directory></code>	Specifies directory where the mld server is installed. Once set, this directory cannot be changed. You can, however, use symbolic links.	<code>\$CARIDEN_ROOT/software/mld/current</code>
<code>-backup <directory></code>	Specifies directory for saving data store backups.	<code>\$CARIDEN_ROOT/data/mldata/backup</code>

Back Up the Data Store

Cisco WAE Live backs up the time-series derived data from plan files. It does not back up transaction logs or other WAE Live data, such as application data and report data.

The required amount of space for backups depend on the installation size and how long a system has been running.

Best Practices

- Perform the backup to a different disk drive, or copy the backup to a different physical device after you finish the backup.
- Perform backups outside of peak traffic hours.
- Set up a backup directory that is on a different physical disk when you first install the mld server and data store. Doing so sets the default backup directory for all backups.

```
mld -action install -backup <backup_directory>
```

- The backup process makes a copy of the data store, but it does not back up other Cisco WAE Live data, such as application data and report data. Therefore, with some regularity, copy this other data to a safe location, such as to a different physical disk.
- Perform a full backup at least weekly or monthly, with numerous incremental backups in between them.
- Rather than running manual backups, call `m1_backup` from a cron job.
- Perform only 1 backup at a time so that their schedules do not overlap. Running simultaneous backups are not supported. Ensure that there is at least 1 hour between each backup. After it completes, verify that the backup was completed within the hour.

Backup Steps



Caution

If you delete the previous mld installation directory, you may delete all the data. To check the current location, enter the following command: `mld -diag -c | egrep ROOTPATH`

The `ml_backup` tool enables you to perform multiple levels of backups to save disk space. An OS file system backup cannot be used to restore the data store. Use the `ml_backup` tool to perform a complete backup to use for data store restoration.

You can execute `ml_backup` to run a manual backup at any time. However, the first time you use backup levels, you must perform backups in this sequence.



Note Keep both the data store and the web server running.

Sequence	Enter	Description
1	<code>ml_backup</code> or <code>ml_backup -L 0</code>	Level 0—Back up everything.
2	<code>ml_backup -L 1</code>	Level 1—Back up everything since the most recent Level 0 backup was performed.
3	<code>ml_backup -L 2</code>	Level 2—Back up everything since the most recent Level 1 backup was performed.



Note For larger systems that frequently run plan file processes, less incremental Level 1 and Level 2 backups are available in between Level 0 backups. The following error appears when a Level 1 or Level 2 backup is not available:

```
Archive failed - The existing level-0 backup for DBspace rootdbs is too old to allow any incremental backup.
```

When this error appears, run a Level 0 backup.

To run a backup using all defaults, enter `ml_backup`. The tool uses the default backup directory, and creates a full backup.

- To override the default backup directory, use the `-directory` option. The default backup directory is `$CARIDEN_ROOT/data/mldata/backup`.
- To set a different backup level, use the `-L` option.

The following example sets the backup directory to `$CARIDEN_ROOT/data/waelive/backups` and backs up only data that is new since the last level 0 backup was run. This assumes that you ran `ml_backup` one time using the default level of 0.

```
ml_backup -directory /data/waelive/backups -L 1
```

Restore the Data Store

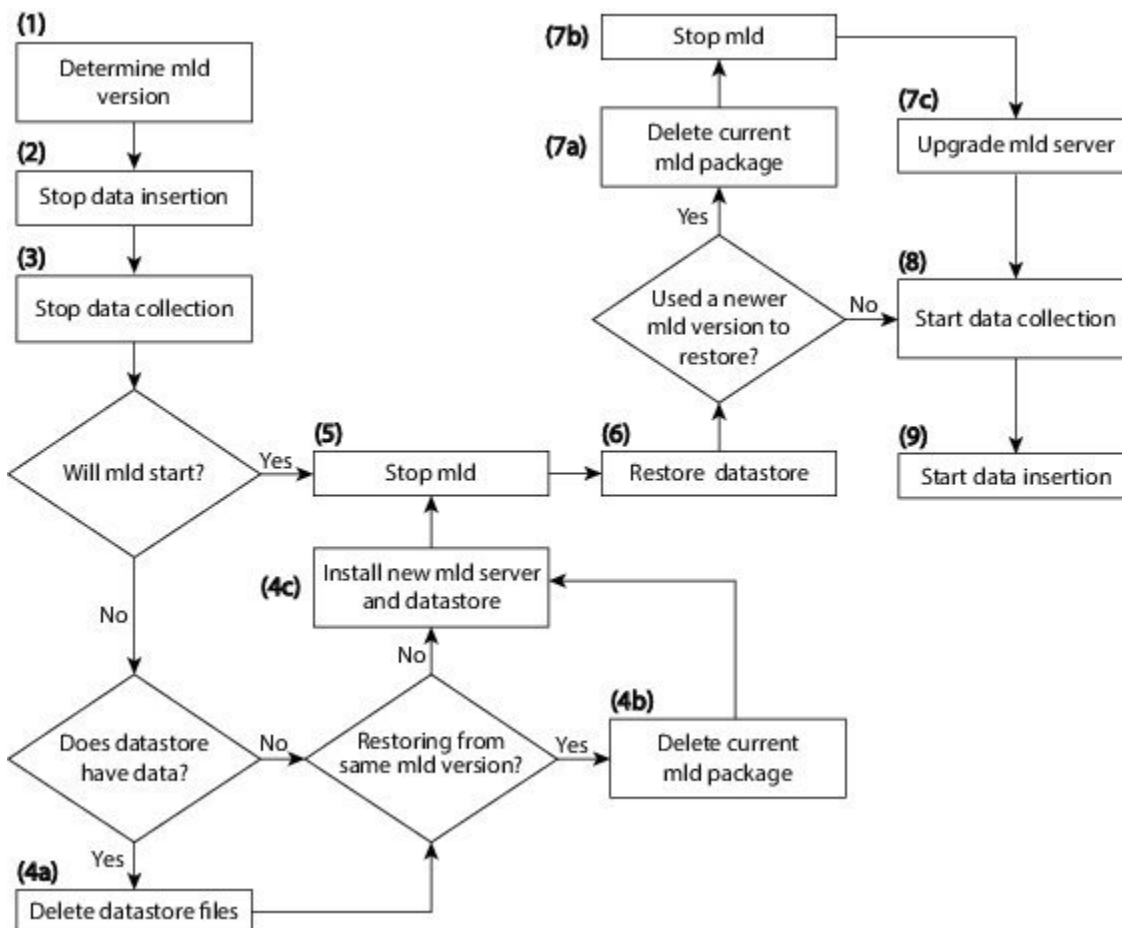
Note the following before attempting to restore the data store:

- To restore a data store, you must have a backup of it. For information about backing up the data store, see the [Backing Up the Data Store](#) section.

- Ensure you have a proper disk and disk space. For example, if your data was corrupted, you would need a new disk. If the restoration is due to a space issue, then add more space to the existing disk.
- If you have a single device configuration, the collection of data will be interrupted during the restoration of a WAE Live data store.
- If the backup data store resides on a different device, confirm that the following prerequisites are met:
 - The username and user ID (uid) of both devices must be the same.
 - The backup data store name uses a hostname as a portion of its name. This hostname portion of the backup data store name must be changed to be the same as the hostname on the device to which it is being restored.

Example: The backup data store name is akdobi.acme.com_1_L0. The hostname on the device on which the data store is being restored is akgudei.acme.com. In this case, change the backup data store name to akgudei.acme.com_1_L0.

Figure 1: Data Store Restoration Workflow



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Delete Data from the Data Store

The `ml_purge` tool removes all data prior to the specified timestamp.

Before you begin

Before running `ml_purge`, confirm that there are no insertions running (`ml_insert_ctl -status`). Insertions might fail due to locks created by `ml_purge` while it is in operation. You might need to pause the scheduler to prevent scheduled insertions (`ml_insert_ctl -disable-scheduler`).

To run `ml_purge`:

```
# ml_purge <timestamp>
```

where `<timestamp>` is in the following UTC format: `year-month-day T hour:minutes`. For example:

```
# ml_purge 2017-01-31T00:00
```

Install the Cisco WAE Live License

Cisco WAE Live supports Cisco Smart Licensing and traditional licensing. Use one of the following procedures based on the license type.

Install Traditional License

Before you begin

Confirm you have the Cisco WAE Live license on your server.

Step 1 If Cisco WAE Live is not running, start it.

```
# embedded_web_server -action start
```

Step 2 Start the Cisco WAE Live UI in a supported browser: `https://<server_IP>:8443`. The default username is "admin" and the password is "admin".

Step 3 Choose **System > Licenses**.

Step 4 Click **Upload Traditional License**.

Step 5 Click **Select Licenses**.

Step 6 Browse to the location or enter the name of the license file (.lic extension), and click **Open**.

Step 7 Click **Upload License**.

Step 8 Restart Cisco WAE Live.

```
# embedded_web_server -action restart
```

Install Smart License

Before you begin

Confirm you have the Cisco smart license on WAE server.

Step 1 If Cisco WAE Live is not running, start it.

```
# embedded_web_server -action start
```

Step 2 Start the Cisco WAE Live UI in a supported browser: `https://<server_IP>:8443`. The default username is "admin" and the password is "admin".

Step 3 Choose **System > Licenses**.

Step 4 Click **Enable Smart Software Licensing**.

Step 5 Provide WAE Server Name or IP address, Port, Username and Password, and click **Enable**.

Step 6 Restart Cisco WAE Live.

```
# embedded_web_server -action restart
```

What to do next

You can begin using Cisco WAE Live and collect plan files. To collect plan files from Cisco WAE 7.2.x, go to **Settings > Data Source** and click the 7.2 Remote Archive option. Enter the appropriate Cisco WAE 7.2.x network and server details. For information about using Cisco WAE Live, see the [Cisco WAE Live User Guide](#).