



## CHAPTER 4

# Cisco User Connect Licensing

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Cisco User Connect Licensing (UCL) is a user-based licensing model where the number of users and phones that are added to the Cisco Unified Communications Manager Business Edition 3000 system get tracked and licensed for use.


This section covers the following topics:

- [Checklist for Licensing Before You Add a Phone to the System, page 4-2](#)
- [Understanding How Licensing Works, page 4-2](#)
- [Understanding The License Types, page 4-4](#)
- [Understanding How Borrowing and Loaning of Licenses Works, page 4-5](#)
- [Interactions and Restrictions, page 4-6](#)
- [Working with Licenses, page 4-7](#)
  - [Obtaining Licenses, page 4-7](#)
  - [Installing a License File, page 4-8](#)
  - [Viewing the Number of Licenses That Are Used and Available, page 4-9](#)
  - [Backing Up and Restoring License Files, page 4-10](#)
  - [Deleting License Files, page 4-10](#)
  - [Understanding the Error Messages for Licensing, page 4-10](#)
- [Related Topics, page 4-11](#)

# Checklist for Licensing Before You Add a Phone to the System

Table 4-1 describes steps for licensing that you complete before you add a phone to the system.

**Table 4-1 Checklist for Licensing Before You Add a Phone**

Configuration Steps		Related Procedures and Topics
<b>Step 1</b>	Review the documentation on licensing.	<a href="#">Cisco User Connect Licensing, page 4-1</a>
<b>Step 2</b>	With a new installation, Cisco Unified Communications Manager Business Edition 3000 automatically ships with 5 enhanced and 5 voicemail starter licenses on the server. Your system automatically runs with these licenses; you do not need to upload these licenses in the Cisco Unified Communications Manager Business Edition 3000 First Time Setup Wizard or in the Cisco Unified Communications Manager Business Edition 3000 Administrative Interface for your system to work.	<ul style="list-style-type: none"> <li>• <a href="#">Understanding The License Types, page 4-4</a></li> <li>• <a href="#">Understanding How Borrowing and Loaning of Licenses Works, page 4-5</a></li> </ul>
<b>Step 3</b>	Determine whether you need additional licenses. Determine if your users and phones are considered basic, enhanced, essential, and so on.	<ul style="list-style-type: none"> <li>• <a href="#">Understanding The License Types, page 4-4</a></li> <li>• <a href="#">Understanding How Borrowing and Loaning of Licenses Works, page 4-5</a></li> <li>• <a href="#">Viewing Status for Licensing, page 4-9</a></li> </ul>
<b>Step 4</b>	If necessary, obtain additional licenses.	<a href="#">Obtaining Licenses, page 4-7</a>
<b>Step 5</b>	<p>Install the additional licenses that you purchased. You can install the licenses in the Cisco Unified Communications Manager Business Edition 3000 First Time Setup Wizard when you first set up your system, or you can install the licenses in the Cisco Unified Communications Manager Business Edition 3000 Administrative Interface(<b>Maintenance &gt; Manage License</b>).</p> <p>After you install one permanent license of any type, Cisco Unified Communications Manager Business Edition 3000 invalidates all starter licenses that are on the server.</p> <div>  <p><b>Caution</b> Before you add a phone, access the Manage License page to make sure that you have installed enough licenses. You cannot add the phone if there are not enough licenses of a license type that the system will use.</p> </div>	<ul style="list-style-type: none"> <li>• <a href="#">Installing a License File, page 4-8</a></li> <li>• <a href="#">Understanding The License Types, page 4-4</a></li> <li>• <a href="#">Understanding How Borrowing and Loaning of Licenses Works, page 4-5</a></li> </ul>

## Understanding How Licensing Works

Cisco User Connect Licensing (UCL) is a user-based licensing model where the number of users and phones that are added to the Cisco Unified Communications Manager Business Edition 3000 system get tracked and licensed for use. For each license type, which are described in the [“Understanding The License Types” section on page 4-4](#), Cisco Unified Communications Manager Business Edition 3000 dynamically and automatically manages your licenses for you; the Manage License page in the Cisco

Unified Communications Manager Business Edition 3000 First Time Setup Wizard and the Cisco Unified Communications Manager Business Edition 3000 Administrative Interface can indicate the following information about your licenses:

- How many licenses are used of each license type
- How many licenses are available for use—Available indicates that the license is installed but not used yet.
- Whether you need to consider installing additional licenses
- Whether you are using starter licenses

Your Cisco Unified Communications Manager Business Edition 3000 server comes automatically installed with 5 starter enhanced licenses and 5 starter voicemail licenses. (A starter license is installed on the Cisco Unified Communications Manager Business Edition 3000 server by default.) Starter licenses do not expire. After you install one permanent license of any license type, Cisco Unified Communications Manager Business Edition 3000 invalidates all starter licenses on the server, although the phones and features continues to work as expected for existing users, even when starter licenses are invalid. If the starter licenses are invalid and you have not installed permanent licenses yet, you cannot perform the following tasks:

- Assign a usage profile where Reach Me Anywhere, Cisco Extension Mobility, or voicemail are enabled to a user.
  - Enable those features in usage profiles where they are currently disabled.
  - Add more phones to the system.
- Whether you have oversubscribed a license type; that is, all licenses for a particular license type have been used, and you cannot borrow from another license type because the license type does not have any licenses to loan (or loaning and borrowing is not supported amongst the types). If oversubscription occurs, you cannot perform the following tasks:

- Assign a usage profile where Reach Me Anywhere, Cisco Extension Mobility, or voicemail are enabled to a user.
- Enable those features in usage profiles where they are currently disabled.
- Add more phones to the system.

The following events may trigger Cisco Unified Communications Manager Business Edition 3000 to dynamically manage the licenses; that is, licenses may move from available to used or vice versa (from used to available).

- You add a user extension or department extension as line 1 on the phone.
- You disassociate the user from the phone.
- You delete the phone.
- You enable or disable Reach Me Anywhere in the usage profile of the user.
- You enable or disable voicemail in the usage profile of the user.
- You enable or disable Cisco Extension Mobility for the user in the usage profile.
- You assign more phones to the user.
- You install more licenses.
- Starter licenses or licenses that are used with same server recovery are marked as invalid by Cisco Unified Communications Manager Business Edition 3000.

**For More Information**

- [Understanding The License Types, page 4-4](#)
- [Understanding How Borrowing and Loaning of Licenses Works, page 4-5](#)

## Understanding The License Types

Cisco Unified Communications Manager Business Edition 3000 manages the license types that are described in [Table 4-2](#). Each license file for each type is associated with the MAC address of the Cisco Unified Communications Manager Business Edition 3000 server.

A primary phone for a user is the highest licensed phone that is associated with the user.



**Tip**

For information on borrowing and loaning of licenses, see the [“Understanding How Borrowing and Loaning of Licenses Works”](#) section on page 4-5.

**Table 4-2**      *License Types*

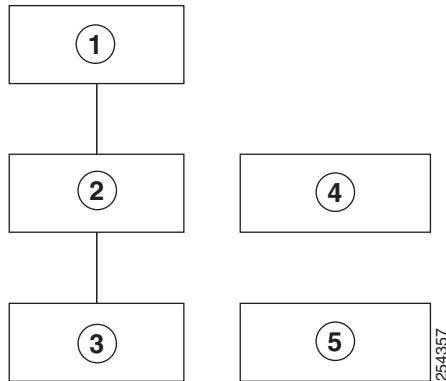
License Type	Descriptions
Enhanced	<p>This license type covers a user and the user’s primary phone when the system classifies the primary phone as enhanced.</p> <ul style="list-style-type: none"> <li>• The Cisco Unified IP Phone 6941 and Cisco Unified IP Phone 6961 use an enhanced license if these phones are not set up as public space phones or adjunct phones.</li> <li>• The Cisco IP Communicator or Cisco Unified Client Services Framework use this license type if it is the primary phone for the user.</li> <li>• The Cisco Unified IP Phone 7937 uses this license type if it is the primary phone for the user.</li> </ul> <p>The enhanced license type allows a regular user (non-department user) to use voicemail, Reach Me Anywhere, and Cisco Extension Mobility if the features are enabled in the usage profile and supported on the phone model.</p> <p>Your Cisco Unified Communications Manager Business Edition 3000 server comes automatically installed with 5 starter enhanced licenses. After you install one permanent license of any type, Cisco Unified Communications Manager Business Edition 3000 invalidates all starter licenses on the server, although the phone and features continues to work as expected for existing users, even when starter licenses are invalid. If the starter licenses are invalid and you have not installed permanent licenses yet, you cannot assign a usage profile where the features are enabled to a user. In addition, you cannot enable the features in usage profiles where they are currently disabled. Finally, you cannot add more phones to the system.</p>
Basic	<p>This license type covers a user and the user’s primary phone when the system characterizes the primary phone as basic. The Cisco Unified IP Phone 6921 and Cisco Unified IP Phone 6911 use this license type if the basic license is available and if the phone is not set up as an adjunct phone.</p> <p>This basic license type allows a regular user (non-department user) to use voicemail, Reach Me Anywhere, and Cisco Extension Mobility if the features are enabled in the usage profile and supported on the phone model.</p>

**Table 4-2**      **License Types (continued)**

License Type	Descriptions
Essential	<p>This license type supports a user and the user's phone when the system characterizes the phone as essential. The Cisco Unified IP Phone 6901 and Cisco VG224 Analog Voice Gateway fall into this category; for example, each analog port on a Cisco VG224 Analog Voice Gateway consumes a unit in the license file.</p> <p>Primary phones are not related to the analog/application only license type; that is, each phone that is classified by the system as analog or application only uses one license from this license type.</p> <p>This license type allows a regular user (non-department user) to use Cisco Extension Mobility on Cisco Extension Mobility-enabled phones if the feature is enabled in the usage profile and supported on the phone.</p>
Adjunct	<p>Adjunct licenses are used for a secondary phone; that is, the user has a primary phone assigned to him, and the user needs an additional phone. Adjunct licenses apply to phones that are characterized by the system as of equal or lesser value than the primary phone. For example, if the user has a Cisco Unified IP Phone 6961 and a Cisco IP Communicator and both types of license are available (enhanced and adjunct), the Cisco Unified IP Phone 6961 gets classified as enhanced, and a license unit from the enhanced license file gets used if it is available. The Cisco IP Communicator gets classified as adjunct, and a license unit from the adjunct license type gets used if it is available.</p> <p>The adjunct license must be available for the adjunct phone to get added to the system.</p>
Voicemail	<p>This license type allows a regular user (non-department user) to use voicemail and voicemail related features. A separate voicemail license is required for each regular user (non-department user). For example, if you have 150 users that require voicemail, you need 150 voicemail licenses. You enable voicemail in the usage profile; after you assign the usage profile to the user, a voicemail license gets used.</p> <p>Your Cisco Unified Communications Manager Business Edition 3000 server comes automatically installed with 5 starter voicemail licenses. After you install one permanent license of any license type, Cisco Unified Communications Manager Business Edition 3000 invalidates all starter licenses on the server, although voicemail continues to work as expected for existing users, even when starter licenses are invalid. If the starter licenses are invalid and you have not installed permanent licenses yet, you cannot assign a usage profile where voicemail is enabled to a user. In addition, you cannot enable voicemail in usage profiles where it is currently disabled.</p>

## Understanding How Borrowing and Loaning of Licenses Works

Your system automatically comes installed with a certain number of enhanced licenses, which may be borrowed by some other license types if the system determines that a particular license type needs additional licenses. Borrowing and loaning of licenses occurs without administrative interaction; the system does it automatically and dynamically without your assistance. Borrowing and loaning of licenses offers you flexibility with your system. In some cases, if a particular type of license is not available, then the license type that is not available can borrow from another license type that is available, as shown in [Figure 4-1](#) and described in [Table 4-3](#).

**Figure 4-1** *How Borrowing and Loaning Works***Table 4-3** *How Borrowing and Loaning of Licenses Works*

Number from <a href="#">Figure 4-1</a>	License Type	Which license type gets used by the system when borrowing and loaning occurs?
1	Enhanced	Enhanced licenses cannot borrow from other license types. If enhanced licenses are available, the system can loan enhanced licenses, as described in <a href="#">Table 4-3</a> .
2	Basic	If you do not have a basic license that is available, an enhanced license gets used by the system if an enhanced license is available.
3	Essential	If you do not have an essential license that is available, a basic license gets used by the system if the basic license is available. If a basic license is not available, the system uses an enhanced license if it is available.
4	Adjunct	Adjunct licenses cannot borrow or loan licenses. If you do not have an adjunct license available, you cannot add a secondary phone to a user that already has a primary phone assigned.
5	Voicemail	Voicemail licenses cannot borrow or loan licenses. If you do not have a voicemail license available, you cannot perform the following tasks: <ul style="list-style-type: none"> <li>Assign a usage profile where voicemail is enabled to a user.</li> <li>Enable voicemail in usage profiles where it is currently disabled.</li> </ul>

## Interactions and Restrictions

The following interactions and restrictions exist for licensing:

- Cisco strongly recommends that you obtain the license by using Microsoft Outlook as your email client. Using other email clients to obtain the license file may cause additional characters to display in the license file.

- The system uploads the license file only if the version that is specified in the license file is greater than or equal to the call-processing software version that is running on the server. If the version check fails, obtain a new license file with the correct version. The system bases the version check only on major releases.
- The format of the license file that you receive specifies Volaris<timestamp>.lic. If you retain the .lic extension, you can rename the license file. You cannot use the license if you edit the contents of the file in any way.
- You cannot delete a license file from the server.

## Working with Licenses

This section contains information on the following topics:

- [Obtaining Licenses, page 4-7](#)
- [Installing a License File, page 4-8](#)
- [Viewing Contents of the License File, page 4-8](#)
- [Viewing Status for Licensing, page 4-9](#)
- [Viewing the Number of Licenses That Are Used and Available, page 4-9](#)
- [Backing Up and Restoring License Files, page 4-10](#)
- [Deleting License Files, page 4-10](#)
- [Understanding the Error Messages for Licensing, page 4-10](#)

## Obtaining Licenses

Cisco User Connect licensing enforces the licenses for Cisco Unified Communications Manager Business Edition 3000 users and phones. The Cisco Unified Communications Manager Business Edition 3000 system automatically comes with a certain number of licenses. If you need additional licenses for your system, use this section for information on obtaining license files.

### Procedure

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- Step 1** Enter the Product Authorization Key (PAK) that you received with your software or phone order in the License Registration web tool at <http://www.cisco.com/go/license>.
- Step 2** Click **Submit**.
- Step 3** Follow the system prompts. You must enter the MAC address of the Ethernet 0 NIC of the Cisco Unified Communications Manager Business Edition 3000 server. You must enter a valid e-mail address as well as the number of servers (1) and licenses that you need.



### Tip

If you need assistance with identifying the MAC address, select the Network page in the Cisco Unified Communications Manager Business Edition 3000 First Time Setup Wizard or Cisco Unified Communications Manager Business Edition 3000 Administrative Interface. The MAC address displays as a read-only field on the Network page.

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The system sends the license file(s) to you through email by using the email ID that you provided. The format of a license file specifies Volaris<timestamp>.lic. If you retain the .lic extension, you can rename the license file. You cannot use the license if you edit the contents of the file in any way.

- Step 4** You must install the license file to the server with the matching MAC address that you provided in [Step 3](#).

## Installing a License File

Use the following procedure to install a license file to the server with the matching MAC address that is provided when a license file is requested. The server where the licenses are installed takes on tracks the number of licenses that are provisioned, borrowed, loaned, and so on.



### Tip

You can only install one license file at a time. Before you perform this procedure, make sure that the license is on your PC desktop or a USB key. For more information, see the [“Interactions and Restrictions” section on page 4-6](#).

### Procedure

- Step 1** Perform one of the following tasks:
- If you are setting up your system for the first time in the Cisco Unified Communications Manager Business Edition 3000 First Time Setup Wizard, you can install a license file after you select your locale and change the username and password for the administrator.
  - If you have completed the Cisco Unified Communications Manager Business Edition 3000 Administrative Interface, you must install licenses through the Cisco Unified Communications Manager Business Edition 3000 Administrative Interface. To access the License page, select **Maintenance > Manage License**.
  - In the License page, click **Install Licenses**.
- Step 2** You can either install the license from your PC desktop, or copy the license from the USB key that is inserted into the USB port on the Cisco Unified Communications Manager Business Edition 3000 server. Browse to the location of the license file; then, click **OK**.
- Step 3** To determine whether the license file installed on the server, click the License File tab, which displays all licenses that you install on the server. (Starter licenses do not display under the License File tab.)

## Viewing Contents of the License File

[Example 4-1](#) describes the properties of the license files. The format of the license file that you receive specifies Volaris<timestamp>.lic. If you retain the .lic extension, you can rename the license file. You cannot use the license if you edit the contents of the file in any way.

The License File tab displays all licenses that you install on the server. Click **View** to view the contents of the license file.



**Example 4-1 Permanent Adjunct License (Sample License File)**

```
INCREMENT ADJUNCT cisco 8.0 permanent uncounted \

VENDOR_STRING=<Count>100</Count><OrigMacId>00237D920FC0</OrigMacId><LicFileVersion>1.0</LicFileVersion> \
  HOSTID=000e7feeebbd\
  NOTICE="<LicFileID>20100601114553335</LicFileID><LicLineID>1</LicLineID> \
    <PAK></PAK>" SIGN="168A 33D1 DC30 06D0 97EE 105D B91E DCD2 \
    2D4A 6C78 BB0D DC79 7502 6BFC 093B 0FF2 74AE 0321 848A 38C6 \
    4DAE 57B1 6734 9536 4BA7 209A E7EE BC93 600F C0F5"
```

The preceding license file includes the following information:

- No expiration date for this license exists as indicated by the keyword *permanent*. *Permanent* indicates that the license file is not temporary. A temporary license would have a date here instead.
- This license file provides 100 license units.
- The Original Mac Id specifies the Mac ID for which the license file was first issued.
- Host ID specifies the MAC ID of the server. This would differ from the OrigMacID only if a rehost procedure was done for the license file.
- The Cisco specific fieldLicFileID identifies this license file.
- SIGN represents the signature that FlexLM generates, and the FlexLM validation package uses it in Cisco Unified Communications Manager to detect whether license file tampering occurred.
- Multiple increment lines may display in the license file, even for the same feature. Ensure that none of the INCREMENT lines is identical, and ensure that each of them is signed independently.

## Viewing Status for Licensing

On the Manage License page, you can view the general status for licensing; for example, in the upper, left corner of the page, the status may display as *Licensing is out of compliance*, which indicates that you need to purchase and install additional licenses.

The Manage License page can also indicate if you are using starter licenses.

## Viewing the Number of Licenses That Are Used and Available

Use the license unit report to display the total license capacity and the number of licenses in use. Use the following procedure to generate a report for the number of licenses that are available.

### Procedure

- 
- |               |  |
|---------------|--|
| <b>Step 1</b> | In the Cisco Unified Communications Manager Business Edition 3000 Administrative Interface, select <b>Maintenance &gt; Manage Licenses</b> . |
| <b>Step 2</b> | See the bar chart to view the number of used and available licenses.   |
-

## Backing Up and Restoring License Files

Because the license files exist in the database, these files are automatically backed up when you run a backup in the Cisco Unified Communications Manager Business Edition 3000 Administrative Interface (**Maintenance > Backup**). If you have a valid backup tar file and you restore your data to the same server, the license files automatically get restored to the server (**Maintenance > Restore**). When you replace a server and restore the data to the server, as described in the [“Replacing the Cisco Unified Communications Manager Business Edition 3000 Server” section on page 48-84](#), Cisco Unified Communications Manager Business Edition 3000 classifies the licenses as unusable because the licenses are for the other server. After you restore the data on the replaced server, you have 30 days to install the new licenses on the replaced server. (Your phones work as expected during the 30-day grace period.)

## Deleting License Files

Because licenses are specifically for the Cisco Unified Communications Manager Business Edition 3000 server, you cannot delete a license file that is installed on a Cisco Unified Communications Manager Business Edition 3000 server.

## Understanding the Error Messages for Licensing

[Table 4-4](#) describes error messages that may display when you perform licensing-related tasks in the Cisco Unified Communications Manager Business Edition 3000 GUIs. Recommended actions also display in [Table 4-4](#).

**Table 4-4**      *Error Messages for Licensing*

Error Message	Recommended Action
Upload a valid *.lic file.	Verify that the name of the license file uses the .lic extension. Verify that the contents of the file have not been modified.
A license file with the same name exists.	The system does not allow you to install license files that use the same name, and the system has identified that the license is already installed. Install a different license file, if necessary.
The system detected that you have oversubscribed licenses for <type of licenses>. Install additional licenses.	Determine how many licenses you need to install; then, obtain and install the licenses.

**Table 4-4**      **Error Messages for Licensing (continued)**

Error Message	Recommended Action
The file installation failed for <name of file>.	<p>One of the following issues occurred:</p> <ul style="list-style-type: none"> <li>• The license file does not use the .lic extension.</li> <li>• The contents of the license file has been modified.</li> <li>• If you are using a USB key, the USB key cannot be read.</li> <li>• The license type is not valid.</li> <li>• The license version and the Cisco Unified Communications Manager Business Edition 3000 software version do not match.</li> <li>• The MAC address that is listed in the license file does not match the MAC address of the server.</li> <li>• The license file is expired or was issued for a later date.</li> <li>• You tried to install on an invalid server.</li> <li>• The host ID in the license file does not match the server where you are installing the license file.</li> </ul>
The license file is empty.	Verify the contents of the license file to ensure that the file has not been modified.

## Related Topics

- [Checklist for Licensing Before You Add a Phone to the System, page 4-2](#)
- [Understanding How Licensing Works, page 4-2](#)
- [Understanding The License Types, page 4-4](#)
- [Understanding How Borrowing and Loaning of Licenses Works, page 4-5](#)
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