

# Wind River® Product Installation and Licensing

ADMINISTRATOR'S GUIDE

2.4

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Administrator's Guide  
2.4*

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# 1

## Overview

This document guides you through the process of installing Wind River products and managing your licenses for those products.

This guide is designed for system and license administrators, or for users who fill those roles in their organization. It outlines advanced configuration tasks for managing product licenses and installations for a workgroup. For a guide designed for developers, see the *Wind River Product Installation and Licensing Developer's Guide*.

The tasks described in this guide include:

- Obtaining a license file for a license server.
- Obtaining a license file for a developer workstation.
- Installing Wind River products on a single developer's workstation, a group of workstations, or a shared file server.
- Installing patches, service packs, and BSPs.
- Removing Wind River products.
- Installing and configuring a license server.
- Reporting license usage.
- Setting up license borrowing.
- Using an options file to control workgroup members' access to products.
- Using a single license server for multiple Wind River products.

### **Additional Documentation**

In addition to in this guide, see the *License Administrator Install Guide* and *Developer Install Guide* for more information on product installation and licensing. These at-a-glance guides are included in hard copy in your product shipment.

Once you have installed your Wind River products, consult the getting started guide, release notes, and other documentation for your product. These are available on the software DVD and on the Web at

[www.windriver.com/support](http://www.windriver.com/support)



# 2

## *License Management and Installation Workflow*

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### 2.1 How Licensing Works

Many Wind River products are license-managed. This means that your organization buys a *license* that allows your developers to run a certain number of copies (also known as *seats*) of a Wind River product simultaneously.

When a developer launches a license-managed product, the product requests a license. If the computer is configured to use a *node-locked* license, the license request and allocation all transparently happen on the local computer (node). If the computer is configured to use *floating* or *named-user* licenses, the product requests a license, and that request is transmitted (through a TCP/IP network) to a license server. If that license server has available seats for the requesting product, it allocates a seat for the requesting node, and sends it to the node over the network.

The license server runs as a daemon process on the network, listening for license requests from development workstations. This means that a workstation configured for a floating or named-user license must be connected to the network in order to retrieve a license. Licenses can be *borrowed* so that the product can be used while the workstation is disconnected from the network.

For information on license servers, see [8. Installing and Configuring a License Server](#). For instructions on license borrowing, see [10. Configuring Borrowing of Wind River Product Licenses](#).

## 2.1.1 Types of Workstation License

There are three different types of workstation license:

### Node-locked License

Node-locked licenses are best for products installed on a single development workstation. The products are not shared over the network, but they can be used by anyone with physical access to the workstation. The products can function when the workstation is disconnected from the network.



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**NOTE:** You do not have to report node-locked license usage to Wind River.

---

### Floating License

Floating licenses allow you to share a pool of license seats among a group of users. For example, suppose 30 developers use Wind River Workbench, but only ten copies of Workbench are running at any given time. In this scenario, you only require ten floating license seats of Workbench. When all ten seats are allocated, no other instances of Workbench can start.<sup>1</sup>

Your organization buys a specific number of seats for each product, and when they are all in use, no other developers can use that product until someone else finishes. The development workstation must be connected to the network to request a license from the license server.



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**NOTE:** You do not have to report floating license usage to Wind River.

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### Named-User License

Named-user licenses are development seats that are licensed to a specific user. The software seat (including development tools, OS, and middleware) can be used only by the designated user from one computer at a time.

This kind of license cannot “float” among different users, and cannot “straddle” computers. That is, it does not allow a single user to run the software on different computers simultaneously.

For example, in the **foo\_NU** workgroup there are two named-user license seats. The designated users of these seats are **userA** and **userB**. **userA** can run Wind River Workbench on an office PC, then move to a lab workstation and run Workbench again. However, in doing this, **userA** is occupying both named-user licenses. Therefore, when **userB** tries to run Wind River Workbench, requiring a third seat, his license request is denied, and he cannot use the product.<sup>1</sup>

To avoid license conflicts such as this, the license administrator can configure the options file to restrict license usage by user, group, or product. For details on configuring the options file, see [11. Controlling Access to Products Using the Options File](#).

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1. Under certain conditions, Workbench can be used without consuming a license seat. For details, see the *Wind River Workbench User's Guide*.

With named-user licenses, the license server generates a usage report, which you send to Wind River each quarter. Wind River then reviews the usage reports for adherence to your license agreement.



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**NOTE:** You must report named-user license usage to Wind River on a quarterly basis. For more information, see [9. License Usage Reporting](#)

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## 2.2 Installation and Licensing Tasks for License Servers

Before you can get a license server up and running, you must complete several tasks, described briefly in this section. For more details, see the sections referenced in each topic.

**Step 1: Obtain a server license.**

Log in to the Wind River licensing Web site, add a license server to your account, and download a server license. For detailed instructions on this step, see [3. Obtaining Server License Files](#).

**Step 2: Install the license server software.**

Once you have a server license in hand, you must install and configure a license server on the license server computer, copy the license to the correct location, and start up the license server. For details, see [8. Installing and Configuring a License Server](#).

**Step 3: Configure usage reporting tools.**

If your organization has purchased any named-user (NU) licenses, you must report the usage levels of license-managed products to Wind River each quarter. For instructions on how to configure your license server for license reporting, see [8. Installing and Configuring a License Server](#). For information on how to report license usage, see [9. License Usage Reporting](#).

**Step 4: Set up borrowing of license files.**

If your developers will use license-managed products while travelling or otherwise disconnected from the network, you must configure their computers to borrow a license for a set period of time. For details about borrowing, see [10. Configuring Borrowing of Wind River Product Licenses](#).

**Step 5: Manage license files and provision licenses.**

If your organization has purchased any named-user (NU) licenses, you can control users' access to these products by writing an options file. For more information on using an options file, see [11. Controlling Access to Products Using the Options File](#).

If your organization uses more than one license-managed Wind River product, or FLEXlm-managed products from other vendors, you may find it convenient to merge the server licenses so that one license server can assign licenses for all products. For more information about how to merge license files, see [12. Setting Up a Single License Server for Multiple Products](#).

**Step 6: Uninstall a license server.**

You may discover that you must uninstall a license server from its host computer, for example if the computer is being decommissioned and you want to move the license server to a new system. For instructions on how to uninstall a license server, see [Uninstalling a License Server](#), p.59.

## 2.3 Installation and Licensing Tasks for Workstations

Once your license server is set up, you must complete several tasks to allow developers to use Wind River license-managed products.

**Step 1: Generate product activation files.**

Your organization may have purchased any of the three license types (or some combination thereof), and you generate product activation files differently depending on the type of license you have. Instructions for obtaining workstation licenses are located in [4. Obtaining Workstation Licenses](#).

**Step 2: Install Wind River products on development workstations.**

Your developers can wait for you to give them a product activation file before installing, or they can install and register for a temporary license. For instructions on the various methods of installation, see [5. Installing Wind River Products](#).

**Step 3: Activate workstation licenses.**

If your developers installed their license-managed products using a temporary license (also known as *temporary activation*), you or they must permanently activate those products. For more information about the ways to activate a workstation license, see [7. Permanently Activating a Temporary License](#).

**Step 4: Rehost product seats on a different development workstation or license server.**

After you remove a product from a workstation, you can reassign its license to another workstation (for a node-locked license) or back to the pool of seats to be allocated by a license server (for floating and named-user licenses). For details about rehosting and obtaining new licenses, see [Rehost](#), p.12.

# 3

## Obtaining Server License Files

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### 3.1 Before You Begin

Before starting, locate the *License Administrator Essentials* sheet that came in your Wind River product box. It contains a code you will need in order to create and manage licenses on the Wind River licensing Web site.

### 3.2 What Is a License Server?

A *license server* is an application made up of two processes: a FLEXlm-based license manager daemon and a vendor-specific daemon. The license server runs on a computer that is accessible to your developers over a network (ideally on the same subnet as the development workstations), and it grants them permission to run specific Wind River products.

This granting of permission is based on the contents of the server's *license file*, which describes how many seats of each product can be used simultaneously.

#### 3.2.1 Do You Need to Install a License Server?

Whether or not you must install a license server depends on the type of license(s) your organization purchased for its Wind River products.

- If your organization purchased *floating* or *named-user* licenses, you *must* set up a license server to allocate those licenses to your developers.

- If your organization has purchased only *node-locked* licenses, you do not need to set up a license server. However, you *must* obtain node-locked license files for each development workstation. Skip the remainder of this section and go on to [4. Obtaining Workstation Licenses](#).

### 3.3 Obtaining Server License Files

Complete the following steps to obtain a license file for the computer that will act as your license server.

1. Log in to the Wind River licensing Web site and create your account.
2. Activate your license.
3. Add your license server as a new host.
4. Activate your products and get a license file for your license server.

These tasks are described in greater detail in the following sections.

#### Step 1: Log in to the Wind River licensing Web site and create your account.

1. Locate your *License Administrator Essentials* sheet, as in [Figure 3-1](#). You will need information from it to complete this task.

Figure 3-1 Sample License Administrator Essentials Sheet



2. Go to <http://www.windriver.com/licensing>.
3. Check the list of products that can be activated from this site to be sure your product appears here. If it appears in the list, click **Login**.



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**NOTE:** Some older products cannot be activated from the licensing Web site; to activate those products, see the installation information that was included with the products. If you do not have access to installation instructions for an older product, contact Wind River Customer Support or e-mail to [license@windriver.com](mailto:license@windriver.com).

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4. Log in to the site:
  - If you already have a Wind River **User ID** and **Password** (for example because you previously logged in to this site or the Wind River support site), type them and click **Login**.or
  - If you are not yet a registered user on any Wind River site, click **Register for a User ID and Password**. Type your user profile information, including your license number from the *License Administrator Essentials* sheet. Type a password, confirm it, then click **Submit**.

**Step 2: Activate your license.**

1. Click **Activate your products** to open the **Add Licenses** screen. Type in your **License Number** and **License Administrator Token** from the *License Administrator Essentials* sheet.  
  
If you expect to eventually manage several licenses, also type in a label (for example, **VxWorks GPP 3.4** or **Alameda Campus**) to make it easier to identify this particular license in the future.
2. Click **Submit**. On the **Add Licenses Confirmation** screen, check to be sure all the information is correct.

Your license has now been added to your account. If you order additional Wind River products in the future, click **Manage Licenses** and then click **Add New License** to add the new products to your account.

**Step 3: Add your license server as a new host.**

Once your license has been activated, use the **Manage Hosts** screen to add information about the computer that will act as your license server. If you have any license server hosts already defined, they appear on this screen.

1. To add a host, click **Add New Host**.
2. On the **Create Host** screen, enter the host computer's name, host ID, and other requested information.



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**NOTE:** For descriptions of the fields, including instructions for finding your host ID, click **More information**.

---

3. When you have filled in all required fields, click **Create**.  
Your new host appears on the **Create Host Confirmation** screen.

**Step 4: Activate your products and obtain a license file for your license server.**

1. After you have added a license server host to your account, click **Manage Licenses** to activate the products you have purchased.
2. From the drop-down list next to the license on the **Manage Licenses** screen, select **Activate Products**.

From this screen you can activate all or some of your available seats for a particular product. For information on the other actions available on the **Manage Licenses** screen, see [3.4 License Maintenance and Management Tasks](#), p.11.

3. To activate a product, select the check box next to the product code and click **Next**.
4. In the **Quantity** field, type the number of seats to allocate.



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**NOTE:** If you are activating a node-locked license, you can choose **0** or **1** from the drop-down list.

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5. From the **Host Label** drop-down list, select the computer to which these seats should be assigned. If you defined only one host, that appears by default.
  - If you defined more than one host and you want to distribute the available seats between them, assign some seats to the first computer, then click **Add Row** and assign others to another computer.
  - If you want to add another license server host computer to your account now, click **Create New Host**.



---

**NOTE:** Server licenses are cumulatively generated, which means that as you assign new products to this host, the license file will include the previous products along with the new ones.

---

To get a license file that lists only the new product you are assigning in this session, select **Do not generate cumulative licenses**.

---

6. When you have finished assigning seats, click **Next**.
7. On the **Verify/Generate** screen, confirm that you have allocated the correct number of seats to the correct computer(s), then click **Next**.
8. On the **Download/E-mail Licenses** screen, enter an e-mail address for the person who should receive the summary of allocations.
9. Click **Download** if you want to download the server license file now. If you would prefer to have it e-mailed to you or to someone else, fill in the form and click **Send**.



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**NOTE:** You can both download the license file and receive it in e-mail.

---

If you chose to send licenses by e-mail, the **E-mail Licenses Confirmation** screen displays to whom they were sent.

Once you have the server license file (**WRSLicense.lic**), see [8. Installing and Configuring a License Server](#) for instructions on how to use it.

## 3.4 License Maintenance and Management Tasks

The following additional actions are available from the drop-down list next to each license on the **Manage Licenses** screen.

- **Installation Keys**

This screen shows the installation keys associated with the products covered by this license. You can use these installation keys to install license-managed products on the appropriate workstations.

- **View Products**

Use this screen to see information such as how many seats of a particular product were purchased under a license, the support status of that product, and the expiration date of the license.

- **View Temporary Activations by Users**

This screen shows which developers (if any) have installed a license-managed product and requested temporary activation. For instructions on how to permanently activate these products, see [7. Permanently Activating a Temporary License](#).



---

**NOTE:** This option is available only if one or more of your developers has requested a temporary license to activate a license-managed product.

---

- **License Info**

Use this screen to view contact information for the person responsible for this license. This information is only available if it was entered when the license was activated.

### Single License Server

#### Merging License Files for Wind River Products

Wind River recommends that whenever possible, you put each Wind River license file on a separate license server. This is the simplest approach because you eliminate the need to merge license files, or to control access to products by specifying user inclusions and exclusions. In this case, the only action you must perform is to install the product on a development computer or a file server, then point to the license server from the development computer's license file.

However, if you must use one license server to distribute licenses for more than one Wind River product, you can merge the license information into one file. For instructions on how to do this, see [12.3 Merging License Server Files](#), p.89.

### Multiple License Servers

If you have more than one license server defined, the following actions are available on the **Manage Licenses** screen.

- **License Files by Host**

Click the appropriate host name to view the active seats assigned to that host for a particular license and product.

You can also download the server license file associated with that host.



---

**NOTE:** This option is available only if you have more than one license server defined.

---

▪ **Rehost**

Use this screen to remove seats of a product from the pool allocated by a particular license server and assign them to a different license server.

- a. From the **Select server for rehost** drop-down list, select the license server from which you want to remove product seats, then click **Rehost**.
- b. From the **Rehost** screen, select the reason for rehosting from the drop-down list, then type the number of seats you want to reallocate in the **Rehost Qty** field for each product and type of license. Click **Next**.
- c. Click **Return the seats to pool** if you do not want to reassign them now, or type the number of seats and select the host to which you want to assign the product seats.

To allocate seats between more than one server, select a server in the drop-down list and assign the correct number of seats, then click **Add Row** to select another existing server or **Create New Host** to define a new server and assign an appropriate number of seats.

- d. On the **Rehost Verification** screen, make sure that product seats are now assigned to the correct license server. Read the text on the screen, select **I agree with the Software License Agreement**, and then click **Next**.
- e. The **Confirmation** screen displays the completed reallocation.



---

**NOTE:** The rehost option is available only if you have more than one license server defined.

---

# 4

## *Obtaining Workstation Licenses*

[4.1 Obtaining a Node-Locked License File](#) 13

[4.2 Obtaining a Floating or Named-User License File](#) 16

### 4.1 Obtaining a Node-Locked License File

Node-locked licenses are for products that are installed on a single development workstation, and not shared over a network. (See [2.1.1 Types of Workstation License](#), p.4, for descriptions of all license types.)

Complete the following steps to obtain a node-locked license file for a development computer.

1. Log in to the Wind River licensing Web site and create your account.
2. Activate your license.
3. Add your development computer as a new host.
4. Activate your products and get a license file for the development computer.

These tasks are described in greater detail in the following sections.

**Step 1: Log in to the Wind River licensing Web site and create your account.**

1. Locate your *License Administrator Essentials* sheet, as in [Figure 4-1](#). You will need information from it to complete this task.

Figure 4-1 Sample License Administrator Essentials Sheet



2. Go to <http://www.windriver.com/licensing>.
3. Check the list of products that can be activated from this site to be sure your product appears here. If it appears in the list, click **Login**.



**NOTE:** Some older products cannot be activated from the licensing Web site; to activate those products, see the installation information that was included with the products. If you do not have access to installation instructions for an older product, contact Wind River Customer Support or e-mail to [license@windriver.com](mailto:license@windriver.com).

4. Log in to the site:
  - If you already have a Wind River **User ID** and **Password** (for example because you previously logged in to this site or the Wind River support site), type them and click **Login**.or
  - If you are not yet a registered user on any Wind River site, click **Register for a User ID and Password**. Type your user profile information, including your license number from the *License Administrator Essentials* or the *Developer Essentials* sheet. Type a password, confirm it, then click **Submit**.



---

**NOTE:** If you do not have your *Essentials* sheets, but do have an existing Wind River Workbench installation of version 3.3 or higher, you can find your license number by launching Workbench and selecting **Help > About Wind River Workbench**.

---

**Step 2: Activate your license.**

1. Click **Activate your products** to open the **Add Licenses** screen. Type in your **License Number** and **License Administrator Token** from the *License Administrator Essentials* sheet.

If you expect to eventually manage several product licenses, also type in a label (for example, **VxWorks GPP 3.4** or **Alameda Campus**) to make it easier to identify this particular license in the future.

2. Click **Submit**. On the **Add Licenses Confirmation** screen, check to be sure all the information you typed in is correct.

Your license has now been added to your account. If you order additional Wind River products in the future, click **Manage Licenses** and then click **Add New License** to add the new products to your account.

**Step 3: Add your development computer as a new host.**

Once your license has been activated, use the **Manage Hosts** screen to add information about the development computer. If you have any hosts already defined, they appear on this screen.

1. To add a host, click **Add New Host**.
2. On the **Create Host** screen, enter the host computer's name, host ID, and other requested information.



---

**NOTE:** For descriptions of the fields, including instructions for finding your host ID, click **More information**.

---

3. When you have filled in all required fields, click **Create**. Your new host appears on the **Create Host Confirmation** screen.

**Step 4: Activate your products and obtain a license file for the development computer.**

1. After you have added the development computer to your account, click **Manage Licenses** to activate the products you have purchased.
2. From the drop-down list next to the license on the **Manage Licenses** screen, select **Activate Products**.
3. Select the product you want to allocate to this development computer (look for **NL** in the **License Type** column). Click **Next**.
4. From the **Host Label** drop-down list, select this development computer, then click **Next**.
5. Confirm that you selected the correct host, then click **Next**.
6. Click **Download** to download the license file immediately, or enter an e-mail address if you want the license file to be sent to the person responsible for this host computer. If you entered an e-mail address, click **Send**.



---

**NOTE:** You can both download the license file and receive it in e-mail.

If you download the file, you must be sure to preserve the **.lic** ending on the license file or the file will not work properly. On Windows systems, you can do this by selecting **All Files** rather than **Text Document** from the **Save as type** drop-down list.

---

7. If you chose to send licenses by e-mail, the **E-mail Licenses Confirmation** screen displays to whom they were sent.

Once you have the node-locked license file, see [5. Installing Wind River Products](#), for instructions on how to use it.

## 4.2 Obtaining a Floating or Named-User License File

### Floating Licenses

Floating licenses allow you to share a pool of license seats among users. Any user can take a license, up to the number of seats licensed. With floating licenses, you must set up a license server, and the development workstations must be connected to it over the network.

### Named-User Licenses

Named-user licenses are assigned to a specific user. The license administrator controls license access by configuring an options file. With named-user licenses, you must set up a license server, and the development workstations must be connected to it over the network. Node-locked licenses are for products that are installed on a single development workstation, and not shared over a network.

See [2.1.1 Types of Workstation License](#), p.4, for descriptions of all license types.

### Preliminary Tasks

Before obtaining a *floating* or *named-user* license, you should have completed these tasks:

1. Create an account on the Wind River licensing Web site and get a license file for your license server computer, as described in [3. Obtaining Server License Files](#).
2. Install and configure the license server, as described in [8. Installing and Configuring a License Server](#).
3. For named-user licenses, configure your license server for license usage reporting, as described in [9. License Usage Reporting](#).

## Obtaining a License File

Obtaining a floating or named-user license consists of two tasks: allocating the appropriate product seat(s) to a specific license server, and creating a license file for the development computer by extracting information from the server's license file.

**Step 1: Log in to the Wind River licensing Web site.**

Go to <http://www.windriver.com/licensing> and log in as described in [Step 1](#) under [4.1 Obtaining a Node-Locked License File](#), p.13.

**Step 2: Assign floating or named-user seats to a license server**

1. Click the **Manage Licenses** tab, and from the drop-down list next to the appropriate license, select **Activate Products**.
2. Select the product for which you want to get a license (look for **FL** or **NU**<sup>1</sup> in the **License Type** column), then click **Next**.
3. Type the number of seats you want to allocate, select the license server to which you want to allocate them, and click **Next**.
4. Verify the number and type of seats that are assigned to the listed license server, then click **Next**.
5. Click **Download** to download the new server license file immediately, or enter an e-mail address if you want the license file to be sent to the person responsible for this computer. If you entered an e-mail address, click **Send**.



---

**NOTE:** You must be sure to preserve the **.lic** ending on the license file or the file will not work properly. On Windows systems, you can do this by selecting **All Files** rather than **Text Document** from the **Save as type** drop-down list.

---

6. Replace the existing license server file with this new file, which contains the newly allocated seat(s) along with any previously assigned seats.

**Step 3: Create a product activation file from a server license file.**

There are two types of product activation file: **install.txt** and **WRSLicense.lic**. Both are created by extracting information from the server license file, and both permanently activate products so that developers can begin using them.

1. In your server license file, near the bottom, you will see lines similar to the following:

```
# Begin: client license -----
# For developer(s) using LAC: ##### send the contents between
# Begin: install.txt and End: install.txt below.
# In case of a new install ask the developer to paste this content into
# an install.txt file and run setup using this file.
# In case of an existing install requiring a permanent activation, ask
# the developer to paste this content into
# <InstallDir>/license/WRSLicense.lic file.

# Begin: install.txt
# Serial Number: #####
# Uncomment the next 2 lines before use.
# SERVER servername hostID portnumber
# USE_SERVER
```

---

1. In older licenses, NU (named user) may appear as UU (unique user).

```
##-% Keys  
##-#CDR-firstProductInformation  
##-#CDR-secondProductInformation  
##-#CDR-thirdProductInformation  
# End: install.txt  
  
# End: client license -----
```

2. Copy the lines that appear in bold above, and paste them into a text file named **install.txt** or **WRSLicense.lic**:

- Create an **install.txt** file if the license-managed products have not yet been installed.

or

- Create a **WRSLicense.lic** file and copy it into the *installDir/license* directory of an already-installed product.



---

**NOTE:** The lines are not bold in the server license file itself.

---



---

**NOTE:** On Linux and Solaris hosts, ensure that the license file is in a usable format. You may need to perform a **dos2unix** conversion.

---

3. Uncomment these two lines:

```
# SERVER servername hostID portnumber  
# USE_SERVER
```

4. Save the file, then use it or distribute it to your developers.

For more information about installing products on development computers, see [5. Installing Wind River Products](#).

For more information about permanently activating products, see [7. Permanently Activating a Temporary License](#).

# 5

## *Installing Wind River Products*

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### 5.1 Before You Begin

#### 5.1.1 Choose Your Installation Method

As administrator, you have several options in deciding how to deploy Wind River products in your organization. You can choose from the methods described below.

**Method 1: An administrator installs the products on each workstation.**

With this method, you install Wind River products for your workgroup members on their individual workstations.

This option is useful if

- You want to limit the possibility of installation errors and user errors.
- You have a relatively small workgroup.
- Some of your workgroup members require a different installation than others (such as different product features or a node-locked license).

For detailed instructions on this method, see [5.2 Method 1: An Administrator Installs the Products on Each Workstation](#), p.22.

**Method 2: An administrator installs the products on each workstation through a command-line sequence.**

With this method, you install Wind River products on each workstation silently, through a pre-defined command-line sequence.

This option is useful if

- You want to limit the possibility of installation errors and user errors.
- You want to achieve identical installations across the workgroup.

For detailed instructions on this method, see [5.3 Method 2: An Administrator Installs the Products on Workstations Through a Command-Line Sequence](#), p.23.

**Method 3: Developers install the products on their workstations.**

With this method, you must distribute the installation media (or images) to your workgroup, and provide them with instructions and the product activation file.

This option is useful if some of your workgroup members require a different installation than others (such as different product features, a different installation directory, or a node-locked license).

For detailed instructions on this method, see [5.4 Method 3: Developers Install the Products on Their Workstations](#), p.23.

**Method 4: An administrator installs the products on a shared file server.**

With this method, you make the Wind River products available to your workgroup by installing them on a file server. Developers will then run the products remotely from their workstations.

This option is useful if you have

- a fast network
- limited disk space on individual workstations
- a large workgroup

Also, having only one installation can save you time with maintenance, such as installing patches.



**NOTE:** This method works best when your server hardware and network environment can provide speedy performance.

---

For detailed instructions on this method, see [5.5 Method 4: An Administrator Installs the Products on a Shared File Server](#), p.25.

## 5.1.2 Gather Materials and Resources

Once you have chosen your installation method, make sure you have the following required materials and resources:

- Your product box, which includes:
  - installation media (discs or image files).
  - the *Developer Essentials* sheet
- Several gigabytes (GB) of disk space on your development workstation for standard installations.

The amount of disk space required varies for each product. The installer reports the product's disk space needs as well as how much space is available.

- Write permissions to your installation directory.
- Administrator or power user privileges (Windows hosts).
- For installation on Linux and Solaris hosts, it is recommended that you install from an account other than **root**.
- For typical installations, either:
  - A product activation file to permanently activate your products during installation (see 4. *Obtaining Workstation Licenses*).or
  - A license authorization code (LAC) and Internet access to temporarily activate your products.



---

**NOTE:** You can install Wind River products before or after generating a product activation file. Your developers can wait for you to give them a product activation file before installing, or they can install using installation keys from the *Developer Essentials* sheet and receive a temporary license.

---

- For non-typical installations, installation keys (printed on your *Developer Essentials* sheet).

## 5.1.3 Prepare the Computer

### Close Wind River Programs

Before installing new products, you must exit any Wind River programs or tools that may be running, including the Wind River registry. If the installer is blocked by a process, it displays an error, showing the process ID.

### Locked and Modified Files

If the installer encounters a locked file (such as if an external editor has locked a source file that must be updated), it saves it as *fileName.new* in the same directory as the original.

If the installer encounters any user modifications to files it needs to update, it creates a *fileName.wrsav* file in the same directory as the original.

If any problems were found with the **.new** files, these issues are logged in the *installDir/setup.log* file; user modifications are listed in *installDir/modifiedfiles.log*.

## 5.2 Method 1: An Administrator Installs the Products on Each Workstation

In this method, you install the software for your workgroup members on their individual workstations.

### Step 1: Generate a product activation file or files.

Follow the instructions in [4. Obtaining Workstation Licenses](#) to create a product activation file or files for your workgroup (usually called **install.txt** and located in the product's installation directory):

- For workgroup members who will use floating (FL) or named-user (NU) licenses, you can use the same product activation file.
- For workgroup members who require node-locked licenses, you *must* either:
  - Create a unique product activation file for each node (workstation).
  - or
  - Install on a developer's workstation with a temporary license, then provide him or her with a unique license file later. (For details, see [7. Permanently Activating a Temporary License](#).)

### Step 2: Install the products on each workstation.

- For GUI installation, see [5.6 Using the Installer Program](#), p.26.
- For installation from the command line, see [A. Command-Line Installation](#).



---

**NOTE:** For best performance and to achieve uniformity across installations, make sure that all content you want to install is located locally.

---

## 5.3 Method 2: An Administrator Installs the Products on Workstations Through a Command-Line Sequence

In this method, you install the software on each workstation silently, using a command-line sequence. This method is similar to [5.2 Method 1: An Administrator Installs the Products on Each Workstation](#), p.22, except that it results in identical installations on all workstations.

### Step 1: Generate a product activation file or files.

Follow the instructions in [4. Obtaining Workstation Licenses](#) to create a product activation file or files for your workgroup (usually called `install.txt` and located in the product's installation directory):

- For workgroup members who will use floating (FL) or named-user (NU) licenses, you can use the same product activation file.
- For workgroup members who require node-locked licenses, you *must* either:
  - Create a unique product activation file for each node (workstation).
  - or
  - Install on a developer's workstation with a temporary license, then provide him or her with a unique license file later. (For details, see [7. Permanently Activating a Temporary License](#).)

### Step 2: Install the products on each workstation.

Determine the options and arguments you want to specify in the command-line sequence. See [A. Command-Line Installation](#) for the complete list of options.

Then, on each development computer, run the same command sequence to install the products.

## 5.4 Method 3: Developers Install the Products on Their Workstations

In this method, users install the software on their own workstations individually.

### Step 1: Generate a product activation file or files for your workgroup.

Follow the instructions in [4. Obtaining Workstation Licenses](#) to create a product activation file or files for your workgroup (usually called `install.txt` and located in the product's installation directory):

- For workgroup members who will use floating (FL) or named-user (NU) licenses, you can distribute the same product activation file to all users.
- For workgroup members who require node-locked licenses, you *must* either:
  - Create a unique product activation file for each node (workstation).
  - or

- Instruct workgroup members to install with a temporary license, then provide him or her with a unique license file later. (For details, see [7. Permanently Activating a Temporary License](#).)

**Step 2: Make the installation media accessible to workgroup members.**

You can do this by either

- Uploading the media images to a shared network directory.  
or
- Creating enough physical media to distribute to workgroup members.



---

**CAUTION:** If your workgroup members will install the product from a shared network directory, ensure that the directory name and path do not include any of the following characters:

[space character] ! # % < > ?

Note in particular that space characters (such as in the directory name **Documents and Settings**) are not permitted. If there is a space character anywhere in the absolute path, some elements of the installed products will not be available.

---



---

**NOTE:** Installing a Wind River product from a shared network directory is slower than from a local directory or physical media. Performance can vary greatly, depending on several factors, including file system performance. For convenience, the installer displays your copy speed during the installation process.

---

**Step 3: Distribute materials to the developers.**

Provide workgroup members with

- the product activation file<sup>1</sup>
- the installation media or a pointer to the uploaded images
- installation instructions:
  - For GUI installation, the instructions in [5.6 Using the Installer Program](#), p.26.  
or
  - For command-line installation, the instructions in [A. Command-Line Installation](#), or a specific command sequence that you have determined.

---

1. As mentioned above, if you have workgroup members who require node-locked installations, you can instruct them to follow the **Temporary activation** option, then provide them with license files later. For details, see [7. Permanently Activating a Temporary License](#).

## 5.5 Method 4: An Administrator Installs the Products on a Shared File Server

This method involves installing a Wind River product on a file server for remote (client-side) execution. In this scenario, you will install the product on a file server, and members of your workgroup will run the software from their own workstations.



---

**NOTE:** Shared installations in which the software is being run on the server, but viewed remotely (such as VNC or remote desktop), are not currently supported.

---

### 5.5.1 Network and File System Considerations

If you are planning to install on a file server, consider that performance can vary greatly when running applications from a file-server-mounted drive. At a minimum, you should have a 100 Mbit network, and a high-performance file server.

#### Installing for Multiple Host OS Platforms

The installer program detects the operating system type (Linux, Solaris, or Windows) of the host you install products onto. By default, it installs only that version of the product. For example, if you insert the DVD for the Wind River VxWorks Platforms product into a Solaris host computer, the Solaris version of that product will be installed.

However, if your development environment includes more than one host OS platform, you can perform a multi-OS installation with either of the following approaches:

- Use the installer in command-line mode, and specifying the **-hosts** option. For details, see [A. Command-Line Installation](#).
- Download the content before installing it. See [5.8.2 Cross-Host Installation](#), p.32, for more information.

With either of these approaches, note the following limitations:

#### Recommended

If you need to support Windows and UNIX-like hosts (Linux or Solaris) from the same installation, the best performance is achieved when you install the product on a Linux or Solaris file server and export the installation to Windows users as an NFS mount.

#### Not Recommended

For performance reasons, Wind River does *not* recommend the following for shared installations that serve both Windows and UNIX clients:

- Installing on a Windows server.
- Installing on a UNIX/Linux server and exporting the installation to Windows clients with SAMBA (SMB). Good results are more likely through NFS.

## 5.5.2 Installing a Product for Shared Use

### Step 1: Generate a product activation file.

A shared file server installation requires that your users have floating or named-user licenses. You *cannot* use a node-locked license with a shared installation.

When you generate your product activation file, it will contain information about which license server will allocate licenses to the users of this installation.

### Step 2: Install the product.

To install a Wind River product on your file server, follow the instructions for either GUI or command-line installation:

- For GUI installation, see [5.6 Using the Installer Program](#), p.26. When you are prompted to choose temporary or permanent activation, choose the **Permanent activation** option and provide the product activation file you generated in [Step 1](#).
- For installation from the command line, see [A. Command-Line Installation](#).

### Step 3: Verify the installation.

Inspect the file *installDir/setup.log* and verify that it does not contain any errors.

Also, you can run the following from the command line:

```
cd installDir  
wrenv -o validate
```

If your installation was successful the command-line sequence above returns **okay**.

If your installation has errors, contact Wind River Customer Support and provide the following files:

- *installDir/setup.log*
- *installDir/maintenance/wrInstaller/\$host/configuration/\*.log*.

### Step 4: Notify your workgroup of the location of the product installation.

Installation is complete, and the products are ready for use.

## 5.6 Using the Installer Program

To install a Wind River product on your development workstation, complete the following steps.

### Step 1: Launch the installer.

Launch the installer in one of the following ways:

- Put the disc into your drive.

If your product includes more than one disc, begin with the disc labeled **Install First**.

- Navigate to the product image, and run
  - **setup.exe** on Windows
  - **setup\_linux** on Linux
  - **setup\_solaris** on a Solaris system



---

**CAUTION:** When you are prompted to choose an installation directory, ensure that the directory name and path you choose do not include any of the following characters:

[space character] ! # % < > ?

Note in particular that space characters (such as in the directory name **Documents and Settings**) are not permitted. If there is a space character anywhere in the absolute path, some elements of the installed products will not be available.



---

**NOTE:** If you are installing a product suite that includes more than one product (such as a Wind River Platform), be sure to choose the same installation directory for all products.

---

Read each installer screen and provide the requested information, then click **Next**.



---

**NOTE:** If you encounter problems during the installation process, click the **Help** button in the installer program. The installer's Help system offers screen-by-screen instructions in greater detail than what is described here.

---

**Step 2: Configure online update settings.**

On the **Online Update Settings** screen, you can choose whether to do the following:

- Look for updates to the installer program itself.
- Look for updates to your Wind River products.
- Test your Internet connection.
- Use a proxy server to connect to the Internet, in order to find installer updates and product updates.

**Installer Updates**

When Wind River makes changes to the installer program, it makes the latest version available to you on an update server. If you select the option to update the installer, and if there is an updated version available, the installer program installs it and restarts itself.

Wind River recommends you update the installer program when possible. If you wish to skip these updates, you can clear this option, but you may encounter installation problems that are resolved in an updated version.



---

**NOTE:** In order for the installer program to update itself, your computer must have access to the Internet. See [Internet Connection](#), p.28.

## Product Updates

Just as with updates to the installer, Wind River makes product updates available on an update server. Updates to products are typically placed in an update repository.

If you select the product-update option, and if an updated version of your product is available, you can install it as part of the current installation process (a later screen in the installer will display product updates to install). Doing so can save you time: rather than installing the older version and then running the installer program again to update your products, you simply install the updated version the first time.

If you do not select this option, you can update your products later, in a separate installation process, using the Product Maintenance Tool. For information on the Maintenance Tool, see [6. Maintaining Your Wind River Product Installation](#).



---

**NOTE:** In order to install product updates, your computer must have access to the Internet. See [Internet Connection](#), p.28.

---

## Internet Connection

Updating the installer and your Wind River products requires a connection to the Internet. You can click the **Test Internet Connection** button to ensure that the computer you're installing on can contact the Wind River cloud.

## Proxy Server

If your computer connects to the Internet through a proxy server, select the **Connect to Internet using proxy server** option. When you select this option, additional fields appear on this screen. Use these fields to enter the type of proxy server (Web proxy or SOCKS proxy), IP address, and port.

If your proxy server is set up to require login information, select **Requires Authentication** and enter your username and password in the additional fields that appear.

If you do not have Internet access, Wind River can make the installer updates and product updates available on physical media. Contact Wind River Customer Support for assistance.

### Step 3: Choose your activation type.

On the **Choose Activation Type** screen, select the type of installation you want:

- **Use your existing product activation (install.txt) file**



---

**NOTE:** This option appears only if you have previously installed Wind River products.

---

If you have previously installed Wind River products, you may already have a product activation file (**install.txt**) that you used for those products. In some cases, you can use the same product activation file for your current installation.

If you received a new product activation file for the products you are currently installing, Wind River recommends you use the most recent file. To do so, select [Permanent activation](#).

- **Temporary activation**

Select this option if you wish to install and use the products right away, but for a limited time (usually 31 days).

To continue using them beyond that period, you must eventually perform a permanent activation. The permanent activation allows you to use the same installation; you will not need to re-install your Wind River products. For details on converting a temporary installation to a permanent one, see [7. Permanently Activating a Temporary License](#).

If you select the **Temporary activation** option, another screen appears where you will enter the license authorization code (LAC) and some other user information. The installer program will then retrieve your temporary license.

Because of this retrieval process, you must have Internet access in order to use this method.

- **Permanent activation**

Select this option if you have a product activation file for this installation.

To use this option, click **Browse** and navigate to the directory location of your product activation file.

You do not need Internet access to install and activate Wind River products using this option.

- **Manually enter all installation keys**

This method is used only in rare cases. If you need to use this option, contact Wind River Customer Support.

**Step 4: Select the target architectures to install.**

If the products you are installing have any architecture-specific content, the **Choose Installation Filters** screen appears. Use this screen to refine your installation by selecting the particular target architectures for which to install.

If you are not sure, you can accept the default setting, which is to install for all architectures. However, clearing unneeded architectures reduces the size of your installation, and can also avoid confusion over extraneous components or files.

If you do not select any target architectures, the installer warns you that only architecture-independent features will be installed.

**Step 5: Select the products to install.**

On the **Select Products** screen, you can

- Choose the specific products to install.
- Review the installation directory and disk space that the products will use.
- Set options for how to start your programs.

**Selecting Products to Install**

The list shows all products and features that your license entitles you to, and according any architecture-specific filters you may have specified.

Review the product list on this screen carefully. If it does not show the products you intend to install, this means that the installer has not detected the new product

activation file. In this case, click **Back** to return to the **Choose Activation Type** screen.

You can expand the nested items in the list, and select just the products and features you want to install.



---

**CAUTION:** Use caution when clearing (de-selecting) features, as failing to install critical features can prevent the products from functioning properly.

---

The icons in the product list are differentiated according to the source and newness of the content:



Content from a Web (http) source.



Content from a local (file) source.



New content to be installed.



Content that is already installed.



Content that is an update to features you already have installed.

### Installation Directory

The products you select on this screen will be installed into the directory named here. This directory path is the one you specified at the very beginning of the installation process.

If you want to change the installation directory, restart the installer and specify the new directory in the first Wind River Installer dialog.

### Disk Space Information

This screen shows the total disk space required for the products and features listed, as well as the amount of disk space available.

In calculating available disk space, the installer also takes into account any quota restrictions in place.

If you do not have sufficient disk space for the installation, the installer shows an error message. In order to continue installing, you must free enough disk space for the installation.

### Start Options

Use these options to set how you will launch your Wind River products once they are installed. You can create a desktop shortcut and specify a Start menu entry.

On UNIX systems, the installer creates Start menu entries and desktop shortcuts according to the free Desktop Entry specification. Desktop managers supporting this mechanism are available for all supported UNIX and Linux systems. If you have configured your system to use a different desktop manager, or only a window manager, these shortcuts and menu entries may not be accessible.

**Step 6: Install.**

After you have accepted the license agreement(s), check over the list of content once more. When you are ready to launch the installation, click **Install**. The last screens offer a summary of your installation and a link to product readme information.

**Step 7: Follow up.**

Now that you have finished the product installation process, take stock of any additional tasks, such as converting a temporary product activation to permanent, or installing a BSP. Some follow-up actions are described in [5.7 Post-Installation Tasks](#), p.31.

## 5.7 Post-Installation Tasks

### Convert Temporary Activations to Permanent.

If you installed using a product activation file, your Wind River products are now installed, activated, and ready for you to begin working with them.

However, if you installed using a license authorization code or installation keys, you may use your products now, but eventually you must permanently activate them to continue working with them. For instructions on how to do this, see [7. Permanently Activating a Temporary License](#).

### Restart Your License Server

If you installed new products (rather than updates to existing installed products), and your organization uses a license server to manage Wind River software licenses, you must restart the license server after product installation, in order for workgroup members to use the new licenses.

### Failed Installation

If you were not able to install, contact Wind River Customer Support and be ready to provide the following files:

- `installDir/setup.log`
- `installDir/maintenance/wrInstaller/hostType/configuration/*.log`.

Additionally, see [13. Troubleshooting](#) for help with some of the more common issues that can arise during installation.

### Adding to Your Installation

For information on installing a service pack, patch, or BSP, see [6. Maintaining Your Wind River Product Installation](#).

## Uninstallation

For instructions on removing Wind River products, see [6.5 Removing Wind River Products](#), p.45.

## Moving an Installation

If you want to produce an identical installation in a different location, Wind River recommends that you simply re-install into the second location.

While it is possible to move, copy, or relocate a Wind River product installation, there are some caveats. Some products may not support moving the original installed location because of host-specific actions performed by post-installation scripts that link your computer to the product.

Specific cases in which moving the installation breaks products or functionality include registering the Wind River Probe to Windows; and copying DLLs into the System folder.

## 5.8 Atypical Installations

This section describes atypical installation scenarios. You may not need the instructions in this section, depending on the products you have already installed, and the specific constraints of your workgroup's environment.

### 5.8.1 Installing Workbench into an Existing Eclipse Environment

Wind River Workbench provides a complete Eclipse framework. You do not need to install Eclipse separately. However, if you have your own customized Eclipse installation, and you prefer to integrate Workbench into it, you must:

1. Install Wind River Workbench (as described in this chapter).
2. Follow the instructions in *Wind River Workbench User's Guide: Using Workbench in an Eclipse Environment* to integrate Wind River Workbench into your existing Eclipse installation.

### 5.8.2 Cross-Host Installation

The Wind River installer does not support installing products on one host type, to be run on a different host type.

### 5.8.3 Incremental Installation

An incremental installation adds to an existing product installation. An incremental installation can be performed in situations such as the following:

- You installed only certain features of a Wind River product (by selecting only certain architectures or features during installation) and now wish to add the excluded features.
- You are installing complementary Wind River products (for example, adding On-Chip Debugging to your existing installation of Wind River Workbench).

When you do an incremental installation, you can again choose target architectures and features. However, you cannot reinstall products and features that are already installed. The installer program offers only those products or features that are not yet present in your installation. If you wish to reinstall, you must first remove the product. For information on removing products, see [6.5 Removing Wind River Products](#), p.45.

### 5.8.4 Revision-Controlled Installation

You can use Wind River products in a source-controlled environment. However, you cannot install the products directly into a source control system or link the installer program to it. You must first perform the installation; *then* apply configuration management.

Typically, organizations that use a CM system with Wind River products first perform the installation, then contribute it to their system as version one. Any product updates subsequently installed then become version two.

There are some caveats to consider if you will use revision control:

- Because of the size of Wind River products, you must be prepared that a source-controlled Wind River software repository will necessarily be quite large.
- With most source control systems, you lose write permissions to the files being managed. In order to update Wind River products, the installation must be writable.

### 5.8.5 Installing Multiple Products

You can install multiple Wind River products on the same host computer. Keep in mind the following supported and unsupported variations:

- **Multi-Product Installation**

Multiple products can co-exist in the same directory, but must have different version numbers. For example, the same location can house a Workbench 3.1, Workbench 3.2, and Workbench 3.3 installation.

During the installation process, you can opt to create Start menu entries. In cases of multiple products and versions, you may want to create Start menu entries with customized names, in order to more easily identify them when you run the programs or perform maintenance on them.

- Windows Hosts

Without customized Start menu entry names, the installer program creates entries such as the following:

**Start > Wind River > Workbench 3.1 > Workbench 3.1**

**Start > Wind River > Workbench 3.2 > Workbench 3.2**

**Start > Wind River > Workbench 3.3 > Workbench 3.3**

**Start > Wind River > Product Maintenance**

**Start > Wind River > Product Maintenance~0**

**Start > Wind River > Product Maintenance~1**

- UNIX Hosts

On UNIX systems, if you do not customize the Start menu entry names, they appear identical:

**Start > Wind River > Product Maintenance**

(points to the Maintenance Tool for the Workbench 3.1 installation)

**Start > Wind River > Product Maintenance**

(points to the Maintenance Tool for the Workbench 3.2 installation)

**Start > Wind River > Product Maintenance**

(points to the Maintenance Tool for the Workbench 3.3 installation)

- **Multiple Installations of the Same Product and Version**

You can install multiple instances of the same product and version number, but you must choose separate installation directories for each instance. For example, if you have an existing installation of Wind River Workbench 3.3 at **C:\WindRiver** and want to install another instance of Workbench 3.3 for a particular task, you would install the second instance into, say, **C:\WindRiver\_task**.

In this case, if you opt during installation to create a Start menu entry, take care to give a descriptive name (such as **Wind River task**) so that when you run products or the Maintenance Tool from the Start menu, you can choose the correct instance.

- **Parallel Installation**

You can run two or more installation processes simultaneously. Each process must be performed by a separate instance of the installer program, and must install into a separate directory.

However, note that because you are likely to face disk I/O and network performance issues with this kind of simultaneous parallel installation, there is little or no benefit to it. The installer performs best when it is allowed to create a single installation at a time.

- **Merging Split Installations**

If you have installed products into separate locations—for example, Wind River Workbench in one location and VxWorks in another—you cannot later combine them. The installer does not support merging installations in this way.

### 5.8.6 Keyboard-Only Installation

You can use the GUI mode of the installer without a mouse. Simply press the **TAB** key to move through the options on a screen; then press **ENTER** to register your selections for that screen.



# 6

## *Maintaining Your Wind River Product Installation*

- 6.1 [The Product Maintenance Tool](#) 37
- 6.2 [Installing Product Updates](#) 39
- 6.3 [Applying Software Patches](#) 40
- 6.4 [Adding Board Support Packages](#) 42
- 6.5 [Removing Wind River Products](#) 45
- 6.6 [Reviewing the Contents and History of Your Installation](#) 47

### 6.1 The Product Maintenance Tool

The Wind River Product Maintenance Tool is provided with products from Wind River Workbench 3.1 forward. It is a special mode of the same installer program you used to install your products in [5. \*Installing Wind River Products\*](#). You can use the Maintenance Tool to do the following:

- Update your installed products.
- Verify and apply patches.
- Install board support packages (BSPs).
- Remove products.
- View your installation history and the current contents of your installation.

#### 6.1.1 Launching the Maintenance Tool

##### **Close Wind River Programs**

Before using the Maintenance Tool, it is recommended that you exit any Wind River programs or tools that may be running, including the Wind River registry. If the Maintenance Tool is blocked by a process, it displays an error, showing the process ID.

### Locked and Modified Files

If the installer encounters a locked file (such as if an external editor has locked a source file that must be updated), it saves it as *fileName.new* in the same directory as the original.

If the installer encounters any user modifications to files it needs to update, it creates a *fileName.wrsav* file in the same directory as the original.

If any problems were found with the **.new** files, these issues are logged in the *installDir/setup.log* file; user modifications are listed in *installDir/modifiedfiles.log*.

### Start the Maintenance Tool

To start the Maintenance Tool, do the following:

#### Windows

- **From the Windows GUI**

Select **Start > All Programs > startMenuEntry > Product Maintenance**.

The *startMenuEntry* name is either **Wind River** or the custom string you gave when you created a Start menu entry during product installation.

Alternatively, navigate to *installDir\maintenance\wrInstaller\hostType* and double-click **wrInstaller.exe**.

- **From the Windows command line**

On Windows, execute the following commands from a command prompt:

```
% cd installDir\maintenance\wrInstaller\hostType
% wrInstaller.exe
```

#### Linux and Solaris

- **From the Linux and Solaris GUI**

Select **Applications** (the main menu on the panel) > *startMenuEntry* > **Product Maintenance**.

The *startMenuEntry* name is either **Wind River** or the custom string you gave when you created a menu entry during product installation.

- **From the Linux and Solaris command line**

On Linux and Solaris, execute the following commands from the command shell:

```
% cd installDir/maintenance/wrInstaller/hostType
% wrInstaller
```

#### Wind River Workbench

You can start the Maintenance Tool from inside Workbench by selecting **Help > Update Wind River Products**. You must close Workbench and any other Wind River applications before installing product updates.

## 6.2 Installing Product Updates

A product update (such as a service pack) adds new features or functionality to a Wind River product that you have already installed. If an update is available for your installed products, you can install it with one of the methods below.

### DVD

If you have received the product update on a disc, launch the installer by putting the disc into your drive, or by navigating to the product image, and running the **setup** program appropriate to your host OS. This is the same installation program you used to install your products in [5. Installing Wind River Products](#).

With this method, you can install an update without Internet access.

### Download

Download the update from the Wind River Online Support site at <http://www.windriver.com/support>. Unzip the zip file into your installation directory (usually **WindRiver**) and run the **setup** program appropriate to your host type.



---

**NOTE:** If your computer does not have access to the Internet, Wind River can make the update available to you on physical media. Contact Wind River Customer Support for assistance.

---

### ESD

Updates to Wind River products are available through electronic software delivery (ESD).



---

**NOTE:** If your computer does not have access to the Internet, Wind River can make the update available to you on physical media. Contact Wind River Customer Support for assistance.

---

To install a product update in this way, do the following:

1. Launch the Maintenance Tool as described in [6.1.1 Launching the Maintenance Tool](#), p.37.
2. On the **Choose Maintenance Task** screen, select **Online Content**.

When Wind River makes updates, such as service packs, for its products, it makes the latest version available to you on an update server. When you select **Online Content**, the installer program searches the specified server for any available updates to the products you have installed.

3. [Optional] Click **Configure** to set how the Maintenance Tool contacts the Internet, and where it looks for updates.

This is appropriate in cases such as these, for example:

- Your organization uses a proxy server to connect to the Internet.
- You have configured a local server for product updates.
- Wind River has directed you to use an alternate location.

For detailed instructions on configuring the Maintenance Tool, see the Help system within the installer program.

4. On the **Choose Maintenance Task** screen, click **Next**. If updates are available, a subsequent screen lets you select the ones you want to install.

You can expand the nested items in the list, and select just the products and features you want to install. The icons in the product list are differentiated according to the source and newness of the content:



Content from a Web (http) source.



Content from a local (file) source.



New content to be installed.



Content that is already installed.



Content that is an update to features you already have installed.

## About Legacy Products

As a general guideline, you should install and maintain a product using the installation tool included with it. Details are listed below.



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**NOTE:** For these guidelines, a *newer installer* is one of release number 2.0 or higher (Wind River Workbench releases 3.1 and higher). An *older product* is one that is built with a pre-2.0 installer.

---

- **Service Packs**

Newer versions of the installer program *cannot* be used to install service packs for older products.

- **Patches**

Newer versions of the installer program *can* be used to install patches for older products, but you must have the 1.4.2 JRE in place.

- **Removing Older Products**

Newer versions of the installer program *can* be used to remove older products.

## 6.3 Applying Software Patches

A software patch typically fixes one feature or adds or replaces a small number of files in your existing installation. To install a patch, first download it, then run the Maintenance Tool to install it.



**CAUTION:** Take care in applying patches. Because patches are likely to overwrite files in your existing product installation, they are not separately removable, and because combinations of different patches are not necessarily verified together, applying patches can break your installation.

Wind River strongly recommends you consider carefully before installing patches. Read the installation instructions for each patch thoroughly. Contact Wind River Customer Support if you are unsure of the stability of a particular combination of patches.

To install a patch, do the following:

1. Log in to the Wind River online support Web site:  
<http://www.windriver.com/support>
2. Select the **Downloads** tab, then use the filter fields to find available patches for your product.
3. Unzip the patch's zip file into your *installDir/updates* directory.
4. Launch the Maintenance Tool as described in [6.1.1 Launching the Maintenance Tool](#), p.37.

Alternatively, you can install a patch in command-line mode. For details, see [A. Command-Line Installation](#).

5. On the **Choose Maintenance Task** screen, select **Patch** and click **Next**.

On a subsequent screen, the installer program displays any patches present in the *installDir/updates* directory. If the *installDir/updates* directory contains patches that you have already installed, these patches are listed, but by default are not selected.

In the patch list, you can perform the following actions:

- Select a patch to install.
- Repair a patch, if it is already installed.

Repairing a patch undoes any changes that might have been made to the patched files.

If there are no patches in the *installDir/updates* directory, you can click **Back** to perform another task in the Maintenance Tool, or **Finish** to close the installer program.



**NOTE:** If you have multiple, parallel Wind River product installations (independent products in separate installation directories), take note of the **Installation Directory** displayed on the **Apply Patches** screen. If it does not show the desired directory, close the Maintenance Tool and restart it. When you start the Maintenance Tool the second time, take care to select the correct installation directory. You may also need to move your patch files if they are not in the **updates** directory of the correct installation.

6. Select the patches you want to install or repair, and click **Install**.

When the installation is complete, click **Finish**.

## Examining the Contents of a Patch

If you want to verify the contents of a patch before applying it—because, say, you are close to the end of development and must be particularly cautious about changing your installation—you can view a list of its contents; or you can extract its contents to a temporary directory. You can then compare the list or the contents with your current installation, to see which files will change if you apply the patch.

To do either of these things, do the following:

1. Launch the Maintenance Tool as described in [6.1.1 Launching the Maintenance Tool](#), p.37.
2. On the **Choose Maintenance Task** screen, select **Patch** and click **Next**.
3. Select the patch or patches that you would like to examine. Right-click and choose one of the options from the context menu:
  - **Export content list to file...**  
When you select this option, the installer writes a list of the contents of the patch to the file you specify.
  - **Extract patch contents to...**  
With this option, the contents of the patch are extracted into the directory you specify.
4. Review the results.

Alternatively, you can examine a patch in command-line mode. For details, see [A. Command-Line Installation](#).

## 6.4 Adding Board Support Packages

Most Wind River product shipments provide board support packages (BSPs) directly on the product installation media. You select and install those BSPs as part of the overall product installation.

However, to support customers' development needs, Wind River continually releases new BSPs for additional boards and processor families.

If the BSP you need is not included on your installation media, you may wish to add a BSP after you have installed your products. This section covers that process.

### Compatibility

The Wind River installation program does not verify version compatibility between your Wind River products and BSPs. For compatibility information, see the documentation that accompanies the individual BSP.

### Installation Methods

There are two main methods for adding a BSP:

- Electronic software delivery (ESD)

In this method, you run the installer program to find and install available BSPs. See [6.4.1 Installation through ESD](#), p.43.

- Download

In this method, you find the BSP on Wind River's Online Support site, download it, and install it as a patch. See [6.4.2 Installation by Download](#), p.43.



---

**NOTE:** For both of these methods, your computer must have access to the Internet. If you do not have Internet access, Wind River can make BSPs available to you on physical media. Contact Wind River Customer Support for assistance.

---

### 6.4.1 Installation through ESD

Some Wind River BSPs are made available through electronic software delivery (ESD). To install a BSP through ESD, you simply run the installer program and allow it to fetch product updates.

1. Launch the installer program in maintenance mode, as described in [6.1.1 Launching the Maintenance Tool](#), p.37.
2. On the **Choose Maintenance Task** screen, select **Online Content**.  
The Maintenance Tool assembles a list of available content from online repositories, and checks your license entitlement.
3. On the **Select Products** screen, scan the list for your desired BSP.  
Using the nested checkboxes, you can install all available updates, or just the BSP content you want.
4. Complete the rest of the Maintenance Tool screens to finish your BSP installation.



---

**NOTE:** If other workgroup members will also use the new BSP, each member must install the BSP individually.

---

### 6.4.2 Installation by Download



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**NOTE:** This section provides detailed instructions for downloading and installing BSPs for products from Wind River Workbench 3.1 forward.

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The process described in this section does not apply to Wind River Linux 4.x BSPs. For Wind River Linux 4.x BSP installation instructions, see the release notes for your product.

---

1. Go to Wind River's Online Support site.
2. Find your BSP.
3. Download it and unzip it into your *installDir/updates* directory.
4. Run the Maintenance Tool, treating the BSP as a patch.

**Step 1: Go to the BSP Web site.**

The Wind River public Web site provides you with access to a listing of all available Wind River BSPs. The BSP main page is:

[http://www.windriver.com/products/bsp\\_web/](http://www.windriver.com/products/bsp_web/)

You can also navigate to this page from the Wind River Web site home page by selecting **Products > Board Support Packages**.



---

**NOTE:** This Web page is publicly accessible, but you must have an Online Support login and a valid maintenance contract in order to download a BSP.

---

**Step 2: Find Your BSP.**

From the BSP main page, you can choose to locate a specific BSP by any of the following criteria:

Architecture

This is the generic processor family to which the desired CPU belongs. For example, ARM or PowerPC. If you know the architecture family for your development processor, use this category.

Hardware Vendor

This is a list of hardware vendors for the development boards that are supported by the Wind River BSPs. If you know the manufacturer of the development board for the BSP you wish to use, use this category.



---

**NOTE:** This category is organized by hardware development board vendors, not by processor manufacturer. In many cases, the CPU manufacturer is not the board vendor.

---

Market

This is the general market targeted by the development board or processor. For example, processors that are targeted for use in medical equipment are grouped into one category while processors targeted for the automotive market are grouped into that category.

Platform

This is a list of available Wind River products that include BSP support. You can use this category to see a list of all BSPs available for your specific Wind River product and version.

**Step 3: Download the BSP.**

Once you have located your desired BSP, you must download and install the associated **.zip** file.

Find the correct entry in the BSP list and click **More**. (This button appears at the far right end of the specific BSP entry line.) This link brings you to the BSP technical details page.

If a version of the BSP is available for download, a link to a downloadable **.zip** file appears at the top of the page under the **BSP Sales Contact** field. Certain BSPs are only available as part of a product distribution. If this is the case, the **Product Availability** field indicates that the BSP is available on CD-ROM (or DVD-ROM). If you do not have the product CD (or DVD) for the BSP, contact Wind River Customer Support for assistance.

To download the BSP **.zip** file, click on its filename near the top of the technical details page. This link brings you to the BSP's download instructions page. Follow the instructions appropriate to your host type and base Wind River product version.

**Step 4: Install a BSP with the Maintenance Tool**

Many Wind River BSPs are generated as patches to an installed product. Therefore, the installation process for a BSP is the same as for a patch. For installation instructions, see [6.3 Applying Software Patches](#), p.40.

Furthermore, like patches, BSPs are not separately uninstallable. To remove or repair a BSP, see [6.5.3 Removing Patches](#), p.46.

## 6.5 Removing Wind River Products

This section describes the process for removing Wind River products from a system.

### 6.5.1 Removing Products Through the Maintenance Tool

To remove Wind River products, it is recommended that you use the Maintenance Tool provided with your product. The Maintenance Tool can uninstall many products at the same time.

To remove a product, follow the steps below.

1. Launch the Maintenance Tool as described in [6.1.1 Launching the Maintenance Tool](#), p.37.
2. Select **Remove** and click **Next**.

The **Choose Products to Remove** screen shows a nested list of products and features that can be removed. You can click on an item in the list to see its component features.



---

**NOTE:** This list shows the current contents of your installation. To see how your installation has changed over time, use the Maintenance Tool's **About This Installation** option. See [6.6 Reviewing the Contents and History of Your Installation](#), p.47.

---

3. Select the products or features you want to remove, and click **Remove**.
4. Complete the uninstallation manually.

Some files are not removed in the uninstallation process. The following types of files are not removed automatically:

- object files
- the product activation file
- any file, workspace, or project that the user has added to the installation
- the installation directory itself
- downloaded third-party plug-ins

If you want to remove these files, you must do so manually.

## 6.5.2 Removing a Service Pack

Service packs are uninstalled the same way a standard release is uninstalled. Follow the instructions in [6.5.1 Removing Products Through the Maintenance Tool](#), p.45, to uninstall the product(s) you no longer want to use.



---

**NOTE:** Keep in mind that service packs are not separately removable from their underlying base product. That is, when you remove a service pack, you are also removing the parent product.

For example, if you had installed VxWorks 6.9, then installed a service pack to upgrade to VxWorks 6.9.1, you cannot remove just the service pack to return to VxWorks 6.9. Uninstallation removes the product outright.

---

## 6.5.3 Removing Patches

When you install a patch, it overwrites existing files in your product installation. Therefore, if you were to remove the patch, it would leave behind an incomplete installation.

For this reason, patches are not separately uninstallable. If you have a damaged installation, you must do one of the following:

- Repair the patch.  
To do this, follow the instructions in [6.3 Applying Software Patches](#), p.40, and either repair or update the patch in question. When you *repair* a patch, all its files are restored to their original content. To *update* a patch means that the patch was reissued, and its files will be updated.  
or
- Remove the product as a whole and reinstall.  
To do this, follow the steps in [6.5.1 Removing Products Through the Maintenance Tool](#), p.45, to remove the product, and then reinstall it as described in [5. Installing Wind River Products](#).

## 6.5.4 Removing a Development Workstation License File

If you are removing a Wind River product from a development workstation, the uninstallation process described in [6.5 Removing Wind River Products](#), p.45, does not remove the license file.

You must manually remove it by navigating to the `installDir/license` directory and deleting the file, usually named `WRSLicense.lic`.



**NOTE:** If the product you are removing was listed in a merged license file that resides in the product's installation tree, removing the license file affects all products whose licenses are also under the file's control.

Wind River recommends that you back up the file, delete the entry for the product(s) you are uninstalling, then save the file. The remaining products on the development workstation (and listed in the license file) should work as before.

## 6.6 Reviewing the Contents and History of Your Installation

You can use the Maintenance Tool to view the current contents of your Wind River product installation, as well as how it has changed over time.

### Current Contents

To see the current contents of your installation, do the following:

1. Launch the Maintenance Tool as described in [6.1.1 Launching the Maintenance Tool](#), p.37.
2. Select **About This Installation** and click **Next**.
3. The **Installed Content** screen shows a nested list of products and features.

On this screen, the icons and text displayed are differentiated by the source and newness of the content:



Content from a Web (http) source.



Content from a local (file) source.



Content that was recently added or changed.



Content that was already installed.

**bold**

**text** Content that was recently installed.

### Installation History

You can also see how your Wind River product installation has changed over time. This can be particularly helpful if you want to know when, say, a particular service pack was installed, or in what order a set of patches were applied.

To explore your installation history, launch the Maintenance Tool and select the **About This Installation** option as described above. Use the **Show installation snapshot by date** field at the top left of the screen to see changes in the installation.

Click **Finish** to close the Maintenance Tool.



# 7

## *Permanently Activating a Temporary License*

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### 7.1 Introduction

If you or the members of your workgroup used a product activation file (**install.txt**) when installing Wind River products, those products are permanently activated and require no further action.

If you used a license authorization code (LAC) or installation key to temporarily activate your products, you can use those products for a limited time, but you must obtain a license file to permanently activate your products.



---

**NOTE:** The length of a temporary activation varies by product, but is typically no less than 30 days. Wind River license-managed tools display a warning as they approach expiration.

*Permanent activation* means that a product may be used to the fullest extent of its license.

---

### 7.2 Activating Temporary Licenses

There are two ways to permanently activate Wind River products that were issued temporary licenses:

- You can create and distribute license files for each development workstation.
- or
- On each development workstation, you can set an environment variable to access a license server.

## 7.2.1 Distributing License Files

The easiest (and recommended) way to activate temporary licenses is to make a license file available to each member of your team.

1. Follow the instructions in [4. Obtaining Workstation Licenses](#) to create the appropriate license file(s).
2. Name the new file **WRSLicense.lic**.
3. Copy the file into the *installDir/license* directory of each development system.  
or
4. Place the license file on a server and make it available for your development team to download onto their workstations. Be sure to instruct them to copy the file to their *installDir/license* directory.



---

**NOTE:** Each node-locked development workstation requires a separate license file, generated using that workstation's host ID.

---

## 7.2.2 Setting an Environment Variable to Access a License Server

The second way to permanently activate temporary licenses is to set an environment variable to point to a license server.



---

**NOTE:** In order to use this method, you must first obtain a server license file and install a license server.

---

1. Create, or instruct each member of your workgroup to create, an environment variable on the workstation called **WRSD\_LICENSE\_FILE**.
2. Set the value of this variable to the *port@servername* indicated in the **SERVER** line of the product activation file you downloaded from the licensing Web site.

For example, the **SERVER** line may look like the following:

```
SERVER jupiter hostID 27000
```

In this example, the server name is **jupiter** and the port number is **27000**, so you would set the variable to **27000@jupiter**.

Once the variable is set, this permanently activates the temporary licenses.

## 7.2.3 Reinstalling the Product

When you go from temporary to permanent activation, you do *not* typically need to remove and then reinstall the product. However, if you do reinstall, note that the uninstallation process does not remove the license file. You must remove the old license file manually, by navigating to the *installDir/license* directory and deleting the file, usually named **WRSLicense.lic**.

# 8

## *Installing and Configuring a License Server*

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### 8.1 Before You Begin

Before you can install and configure a license server, you must have the following available:

- a server license file (see the instructions in [3. Obtaining Server License Files](#))
- the *Wind River License Administration Tools* disc
- the *License Administrator Essentials* sheet from the product box

#### Hardware and Software Requirements

This section discusses minimum hardware and software requirements for the computer(s) on which you will install the License Administration Tools. They do not take into consideration any other software you are running on this computer.

### Windows License Server

- Windows 7, or Windows XP Professional (Service Pack 1 or Service Pack 2).
- Administrator rights.
- Intel Pentium 4-class processor minimum, 1GHz minimum.
- 512MB RAM minimum; 1 GB highly recommended.
- 270 MB of disk space for a complete installation.

If you have named-user licenses, make sure any license server machines you use have available disk space (5-10 GB) to hold the intermediate report logs as they are rotated and transferred.<sup>1</sup>

- A local CD-ROM drive or access to network for installation.
- An active Internet connection is recommended during initial installation to access patches, documentation, and other important information from the Wind River Online Support Web site.

### Solaris License Server

- Solaris 9 or 10.
- A Blade 150 workstation with a 500 MHz processor, or a server or workstation with higher performance.
- 512MB RAM minimum.
- 270 MB of disk space for a complete installation.

If you have named-user licenses, make sure any license server machines you use have available disk space (5-10 GB) to hold the intermediate report logs as they are rotated and transferred.<sup>1</sup>

- A local CD-ROM drive or access to network for installation.
- Netscape Navigator 7.0 or newer.
- 32-bit application support.
- CDE Window Manager recommended.
- An active Internet connection is recommended during initial installation to access patches, documentation, and other important information from the Wind River Online Support Web site.

### Linux License Server

- One of the following operating systems:
  - Red Hat Enterprise Linux Workstation 4.0
  - Red Hat Enterprise Linux Workstation 5.0
  - SuSE Linux 9.2
- Intel Pentium 4-class processor, 1 GHz minimum
- 512 MB RAM minimum with 1 GB recommended
- A CD-ROM drive or networked CD-ROM for installation.

---

1. For information on license reporting, see [9. License Usage Reporting](#).

- GNOME Window Manager.
- 270 MB of disk space for a complete installation.

If you have named-user licenses, make sure any license server machines you use have available disk space (5-10 GB) to hold the intermediate report logs as they are rotated and transferred.<sup>1</sup>

- TCP/IP must be installed on the host system.
- A network interface card.
- Mozilla 1.7 or newer, or Netscape Navigator 7.0 or newer.
- An active Internet connection is recommended during initial installation to access patches, documentation, and other important information from the Wind River Online Support Web site.

## 8.2 Installing License Administrator Tools

To install, put the **Wind River License Administration Tools** disc into the drive and run the Setup program appropriate for your OS: **setup.exe** for Windows (normally this will run automatically when the disc is inserted); **setup\_linux** for Linux; or **setup\_solaris** for Solaris hosts.

No installation key is required for these tools.

### 8.2.1 What Tools Are Installed?

When you install the License Administration Tools, the following utilities are provided:

- **Wind River license server and utilities**

The license server application consists of two processes that work together:

- **lmgrd**—the FLEXlm license manager daemon routes license requests from a development workstation to the correct vendor daemon.
- **wrsd**—the Wind River vendor daemon tracks how many of the available seats of a particular product have been assigned, and to whom.

Tools for managing licenses:

- **lmutil**—this utility allows you to query a license server for information.
- **lmttools.exe**—the GUI-based tool for Windows hosts.



---

**NOTE:** All organizations with floating or named-user licenses must install the license server and utilities.

---

- **Wind River license usage logging and reporting utilities**

These are tools for licenses that require you to report usage to Wind River:

- **wrlogutil**—a utility that controls how license usage is logged.

- **wrReportGen**—the report generator that converts raw logfiles into plain-text reports.



---

**NOTE:** All organizations with named-user licenses must submit usage reports to Wind River on a quarterly basis.

---

For more information about configuring and reporting usage data to Wind River, see [9. License Usage Reporting](#).

## 8.3 Configuring a License Server

You can configure a license server from the command line, or if you are running the license management tools on Windows, you can use the LMTOOLS GUI-based configuration utility.

### 8.3.1 Configuring a License Server from the Command Line

FLEXlm provides several commands, such as **lmgrd** and **lmutil**, that allow you to configure your license server from the command line.

For example, to specify the path to a license file, type the following:

```
% ./lmgrd -c licenseFileList
```

To specify the path to a debug log, type the following:

```
% ./lmgrd -l +debugLogPath
```

To display the status of the license server, so you can tell if it is running, type the following:

```
% ./lmutil lmstat -c path_to_license_file
```

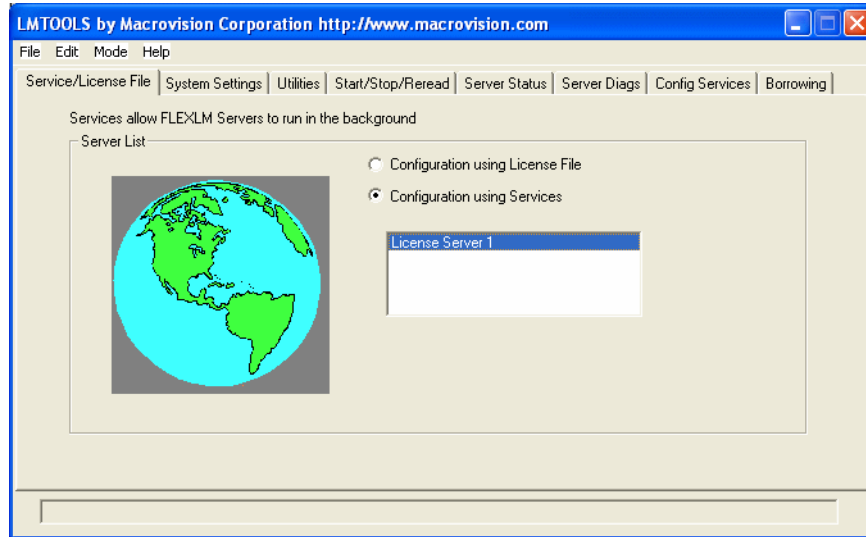
For more information about using the **lmgrd** and **lmutil** commands, see [C. FLEXlm Command Reference](#).

### 8.3.2 Configuring a License Server Using the LMTOOLS Utility

During installation, the license manager utility, LMTOOLS, and other FLEXlm utilities are copied into *installDir\licadmintools-1.2\license\x86-win32\bin*. The LMTOOLS utility is available only on Windows hosts.

1. Double-click **lmtools.exe** to start the license manager. The window in [Figure 8-1](#) appears.

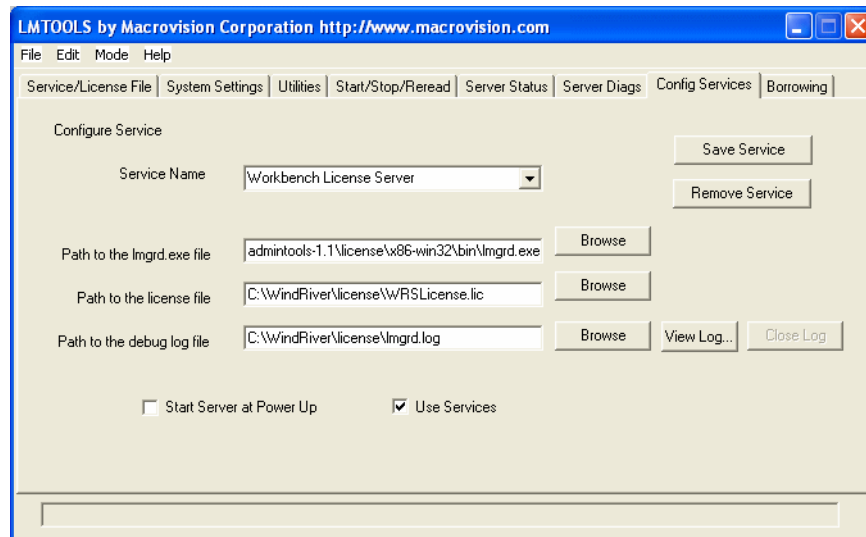
Figure 8-1 License Manager Utility (LMTTOOLS)



If no license servers have been configured, the display box will be blank. If you have already configured a server, its name will appear in the display box.

2. To configure a new server or make changes to an existing one, click the **Config Services** tab (Figure 8-2).

Figure 8-2 Config Services Tab (LMTTOOLS)



If a server is already running, the various text boxes will be filled in. To enter new values, follow these steps:

1. In the **Service Name** field, replace the default **FLEXlm Service 1** with the service name of your choice. If, during installation, you specified that the license server should function as a service, a default value automatically appears.

2. In the **Path to the lmgrd.exe file** text box, insert or browse to the path where the FLEXlm license server daemon, **lmgrd.exe**, is located. By default, it is copied to *installDir\licadmintools-1.2\license\x86-win32\bin*.
3. In the **Path to the license file** text box, insert or browse to the path where you installed the server license file. By default, it is located in the *installDir\license* directory, under the name **WRSLicense.lic**.



---

**NOTE:** If there are multiple license file paths, you must type them in individually, you cannot browse to them. Use a semi-colon (;) to separate filenames.

---

4. In the **Path to the debug log file** text box, insert the path to a debug log file which will record operating data for the license management and vendor daemons (**lmgrd** and **wrsd**, respectively). (This is not the same file as the usage report log required of named-user licensees.)



---

**NOTE:** Once the log file has been created, click **View Log** to see its contents, and **Close Log** to close the window. For more information about debugging, see [8.8 Troubleshooting License Server Problems](#), p. 60.

---

5. Select **Use Services** if you want the license server to act as a service (recommended). This is the default, so the box may already be checked.
6. Select **Start Server at Power Up** if you want to start the server automatically with each reboot.
7. Click **Save Service** to save any new values, then **Yes** in the pop-up dialog box.

Your license server is now configured and ready to be started.

## 8.4 Starting a License Server

Before any workstations on the network can request licenses, you must start the license server.

On Windows you can start the license server using LMTOOLS or from the command line.

### 8.4.1 Starting the License Server from the Command Line

Follow the steps below, substituting for *installDir* the directory where you installed the license administration tools.

1. Open a Windows command prompt or UNIX shell window and change to the directory where you installed the license utilities, as appropriate for your host OS:

```
C: \> cd installDir\licadmintools-1.2\license\x86-win32\bin
```

or

```
% cd installDir/licadmintools-1.2/license/x86-linux2/bin
```

or

```
% cd installDir/licadmintools-1.2/license/sun4-solaris2/bin
```

2. Issue the startup command.

```
% ./lmgrd -c license_file -l [+debug_log_path]
```

For example:

```
% ./lmgrd -c installDir/licadmintools-1.2/license/WRSLicense.lic -l  
+installDir/license/lmgrd.log
```

3. To check whether the license server has started correctly, issue the following command:

```
% ./lmutil lmstat -c path_to_license_file
```

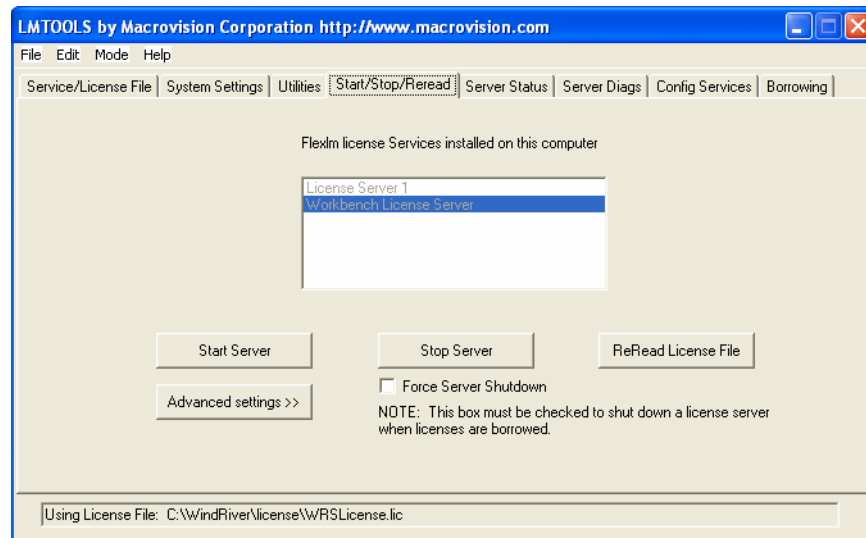
If the status information includes lines that say **license server UP** and **wrsd: UP**, then the license server and Wind River vendor daemon are functioning properly.

For options and syntax of the **lmgrd** and **lmutil** commands, see [C. FLEXlm Command Reference](#).

### 8.4.2 Starting the License Server Using the LMTOOLS Utility

1. If it is not already running, start the license manager utility by double-clicking `installDir\licadmintools-1.2\license\x86-win32\bin\lmtools.exe`.
2. Select the **Start/Stop/Reread** tab, as shown in [Figure 8-3](#).

Figure 8-3 Start/Stop/Reread Tab (LMTOOLS)



3. To start the license server, make sure the correct license server for your product is selected, then click **Start Server**.
4. If you see **Server Start Successful** at the bottom of the window, then the server is running and is available to allocate licenses to your developers.

### 8.4.3 Starting the License Server from a Startup Script

Once you have started the license server manually at least once, you can write a startup script that automatically initiates the server after rebooting.

#### Linux and Solaris License Server Lock File Permission Issues

By default, the license server uses a lock file created in `/var/tmp`. For example, the file listing appears as follows:

```
% ls -l /var/tmp/lockwrsd
-rw-r--r--  1 workbench other    0 Sep 12 18:16 /var/tmp/lockwrsd
```

When the license manager (**lmgrd**) is started for the first time, the lock file is created with the permissions of the user starting the daemon. You may need to modify the file permissions to ensure that other users can start the server.

## 8.5 Stopping a License Server

To stop a license server, you must stop not only the **lmgrd** process, but any subordinate daemons spawned by **lmgrd**, such as **wrsd**. If you are working with a merged license file and other third-party vendor daemons are present, those daemons must also be stopped.

### 8.5.1 Stopping the License Server from the Command Line

#### On Windows

To stop the license server, you must stop each process individually.

1. Open the Windows Task Manager (**CTRL+ALT+DEL**).
2. Choose the **Processes** tab.
3. Select the **lmgrd** process.
4. Click **End Process**.
5. Select the **wrsd** process.
6. Click **End Process**.
7. If any other vendor daemons are running, select them and click **End Process**.

#### On UNIX

To stop the license server, issue the following shutdown command:

```
% lmutil lmdown -c license_file_list
```

For options and syntax of the **lmgrd** command, see [C. FLEXlm Command Reference](#).



**NOTE:** If you used `-x lmdown` when starting the license server, determine the process ID (*pid*) of the license manager process and any other processes it spawned, such as `wrsd`:

```
% ps -e | grep wrsd
```

Then kill the processes:

```
% kill pid1 pid2
```

## 8.5.2 Stopping the License Server Using the LMTTOOLS Utility

If you started the server from LMTTOOLS, you can stop it as follows:

1. If it is not already running, start the license manager utility by double-clicking `installDir\licadmintools-1.2\license\x86-win32\bin\lmttools.exe`.
2. Select the **Start/Stop/Reread** tab, as shown in [Figure 8-3](#).
3. Make sure the license manager appropriate to your product is highlighted.
4. Select **Stop Server**.

## 8.6 Deactivating a License Server

To prevent a license server from responding to license requests, you can simply stop the license server as described in [8.5 Stopping a License Server](#), p.58. Alternatively, you can deactivate the license server by moving the **WRSLicense.lic** file:

1. Navigate to the `installDir/license` directory.
2. Move **WRSLicense.lic** to a different directory, such as your home directory.

This is sufficient to deactivate the license server. To reactivate it in the future, you can move **WRSLicense.lic** back to `installDir/license`; or, if **WRSLicense.lic** has expired, you can obtain a new server license file as described in [3. Obtaining Server License Files](#). Then start the license server according to the steps described in [8.4 Starting a License Server](#), p.56.

## 8.7 Uninstalling a License Server

To remove the license server software from the server computer, do the following:

1. Stop the license server according to the instructions in [8.5 Stopping a License Server](#), p.58.
2. Run Wind River's Product Maintenance Tool as described in [6. Maintaining Your Wind River Product Installation](#).

3. Select **Remove** and click **Next**.

The **Choose Products to Remove** screen shows a nested list of products and features that can be removed. Expand the items in the list to see their component features.

4. Select the license server you want to remove, and click **Remove**.
5. Remove any remaining directories and files manually.

## 8.8 Troubleshooting License Server Problems

To troubleshoot license server problems, create a debug log where your license server can log events.

To invoke **lmgrd** and cause it to generate a debug log file, enter the following command at a Windows command prompt or in a UNIX shell:

```
% lmgrd -c pathToLicenseFile -l pathToDebugLogFile
```

For example:

```
% lmgrd -c installDir\license\WRSLicense.lic -l installDir\debugLog\lmgrd.log
```

You can also create and view the debug log using the LMTOOLS utility; for more information, see [8.3 Configuring a License Server](#), p.54.

This command places data for *all* vendor daemons into the same log file.

If you want to send data for a specific vendor daemon (such as the Wind River daemon **wrsd**) to a different log file, you can set the **DEBUGLOG** action keyword in the options file.

Data accumulates very quickly, and depending on the number of users, can consume large amounts of disk space. You can turn off the debugging feature using the **NOLOG** action keyword in the options file.

For details about using these keywords, see [11.10 Using the Options File for Debugging](#), p.84, and [B. FLEXlm Options File Reference](#).

# 9

## *License Usage Reporting*

- 9.1 [When Is License Reporting Required?](#) 61
- 9.2 [Configuring Your License Server for Reporting](#) 62
- 9.3 [Wind River License Logging and Reporting Utilities](#) 62

### 9.1 When Is License Reporting Required?

If your organization has purchased named-user licenses for Wind River products, you must submit quarterly usage reports to Wind River to ensure compliance with your licensing agreement. If you exceed the maximum number of seats stipulated in the license agreement, additional charges apply.

If you do not have any named-user licenses for Wind River products, license reporting is not required. However, you may wish to log license usage data for other, internal purposes, such as to monitor demand for products, and to optimize product availability for your workgroup.

#### **Before You Begin**

In order to report license usage, you must first do the following:

1. Install the Wind River License Administration Tools. (Installation is described in [8.2 \*Installing License Administrator Tools\*](#), p.53.)
2. Set up a license server (as described in [8. \*Installing and Configuring a License Server\*](#)).

Once you have completed these tasks you can configure your license server for reporting.

## 9.2 Configuring Your License Server for Reporting

This section describes tasks you must perform to prepare your Windows or UNIX license server to log license usage data. These instructions assume you have already installed the Wind River License Administration Tools.

### 9.2.1 Windows License Servers

The license utilities include the Wind River vendor daemon, **wrsd**. The daemon automatically generates binary logs of named-user license usage. The usage log is written to the current working directory of the **wrsd** license daemon. For example, if **wrsd** is located in C:\

Although the log is generated automatically, you must set the path that **wrsd** will use when it writes the logfile.

#### Setting the Logfile Path

To set the path for the logfile, create and edit a text file called **C:\WINDOWS\system32\wrlog.opt**. The **wrlog.opt** file contains settings for usage logging. If this file already exists, edit the existing file. Make sure that **wrlog.opt** has the following line, where *path* is the path to the directory where you want your binary logfile **wrLog.log** to be written:

```
WRLOGFILE=path\wrLog.log
```

Ensure that there are no space characters before or after the = character.

Wind River recommends that you write the logfile to the *installDir/licadmintools-1.2/license* directory. If you do not specify a location, by default the logfile will be written to the current working directory.

New license usage logs are appended to existing ones; the logs do not overwrite each other.

### 9.2.2 UNIX License Servers

On a UNIX license server, the same utilities are used, including the Wind River vendor daemon, **wrsd**, and the logging options file **wrlog.opt**. By default, logfiles are written to the current working directory. New license usage logs are appended to existing ones; the logs do not overwrite each other.

## 9.3 Wind River License Logging and Reporting Utilities

When you install the License Administration Tools, the following license logging and reporting utilities are provided at *installDir\licadmintools-1.2\license\hostType\bin*:

<b>wrsd</b>	the license daemon
<b>wrsd.orig</b>	a backup of the license daemon
<b>wrlogutil</b>	the Wind River log utility
<b>wrReportGen</b>	the report generator

### 9.3.1 The wrsd Daemon

The Wind River license daemon, **wrsd**, tracks how many of the available seats of a particular product have been assigned, and to whom.

**wrsd** automatically records named-user transactions (feature checkouts and checkins) in binary logs.

When a named-user checkout occurs, this transaction triggers the creation of a logfile by default named **wrLog\_twoCharacterMonth-fourDigitYear.log**. For example, the default name of the log for December, 2008, is **wrLog\_12-2008.log**. You can change the name of the logfile through the **wrlogutil** tool; logfiles can also be rotated. (*Rotating* logfiles refers to the practice of renaming a completed logfile, moving it to another location, and starting a new logfile.)

### 9.3.2 The wrlogutil Log Utility

The log utility **wrlogutil** controls how Wind River license usage is logged. You can use it to start, stop, rename, and rotate the raw binary logs that the license daemon generates.

**wrlogutil** uses the following syntax:

```
wrlogutil command [-c pathToLicenseFile] [optionalParameter]
```

The *command* and *optionalParameter* can take the following values:

<b>start</b> <i>pathToWRLogFile</i>	Starts logging Wind River license usage to the specified logfile.
<b>stop</b>	Stops Wind River license logging and closes the log.
<b>rename</b> <i>pathToDestinationFile</i>	Moves the log to the specified destination file and continues logging to the previous path.
<b>rotate</b> <i>newLogPath</i>	Closes the existing log and records transactions using the specified new path.
<b>logAll</b>	Logs all checkouts and checkins, of both floating and named-user license types. If this parameter is not specified, the default is to log only named-user license usage.
<b>logUU</b>	Logs only named-user checkouts and checkins. This is the default.
<b>disable</b>	Disables automatic logging. You must then use the <b>start</b> command to re-enable logging.

### 9.3.3 The wrReportGen Usage Report Generator

**wrReportGen** converts the raw binary logfiles to human-readable text reports. If you have purchased named-user licenses, you must run **wrReportGen** each quarter and submit the resulting reports to [reports@windriver.com](mailto:reports@windriver.com).

**wrReportGen** uses the following syntax:

```
wrReportGen -c companyName [-d divisionName] -s startDate [-e endDate] logfile1 [logfile2] [...] [-f pathToLogListFile]
```

In the syntax above, *startDate* and *endDate* take the format *dd-mm-yyyy*. *pathToLogListFile* is the full path to a text file that contains a list of logfiles.



**NOTE:** A submitted logfile should consist of a full path. For example:

```
wrReportGen -c WindRiver -s 01-09-2010  
/folk/flexlmlic/glo-lic4/wrlog_09_2010_2.log
```

If you run **wrReportGen** from the location of the logfile, you can specify the filename only, without naming the full path.

#### Example 9-1 Sample wrReportGen Output

The following is an example of a summary report generated by **wrReportGen**:

```
Wind River Usage Report      2008/10/27 09:41AM  
Produced by FLEXreport v3.2a.1
```

```
Log File Name: reportLogs/wrsdReport.log  
Report Log Start: Tue, Jul 1, 2008 00:00:00 EDT  
Report Log End: Mon, Sep 29, 2008 00:00:00 EDT
```

```
Report Start Date: Tue, Jul 1, 2008 00:00:00 EDT  
Report End Date: Mon, Sep 29, 2008 00:00:00 EDT  
Uptime: 89 days 22 hours 13 mins 46 secs (99.92%)
```

```
Filter Start Date: Tue, Jul 1, 2008 00:00:00 EDT  
Filter End Date: Mon, Sep 29, 2008 00:00:00 EDT
```

```
Gap Threshold: 30 mins 0 secs
```

```
Vendor: wrsd
```

-----  
Platform Suite Usage  
-----

```
Feature: UU_SE_PNE_VE_Cfg6 3.3 [<ln>661007</ln><flt>2</flt><ps>1451-6</ps>]  
Server:server1  
Users/Hosts:  
AC8LDLH7MXYJ9 (ACF3DK8ENXYFWT27QVYQ)  
AC8LF87UMD5ZPBQ (ABVZDCPEJX8FWUC2QNZQ)  
AC8MLKHXNX78ZCY (ABVZDCPEJX8FWUC2QBVQ)  
AC9L7HAJMQ (ABVZDCPEJX8FWT3ARBXQ)  
AC9LRL74 (ABVZDCPEJX8FWUKZQNYQ)  
AC9LXL7YMU (ABVZDCPEJX8FWUC6QJVQ)  
ACE3H8XZM7Y2LDA (ABVZDCPEJX8FWUKZRBVQ)  
ACF3DLXRLTWZS (ABVZDCPEJX8FWUKYQJYQ)  
ACF4BGYCL35J6 (ABVZDCPEJX8FWT3AQFXA)  
ACF4FG7ZMABQ (ACF3DK8ENXYFWUDAQRWA)  
ACF4FG7ZMD7A (ACF3DK8ENXYFWUKYRFYA)  
ACG37LAELLXY67Q (ACF3DK8ENXYFWUKYQ5WA)  
ACGLH8XRNT7ZA (ABVZDCPEJX8FWT24QRXQ)  
ACGLVH76M72ZTBA (ACF3DK8ENXYFWUKYRFXA)  
ACGLZG7WMXY2BDY (ABVZDCPEJX8FWUC2QNXA)  
ACGMFG74NH2A (ABVZDCPEJX8FWUC2QNYA)  
ACGMHH7RMU (ACF3DK8ENXYFWUSYQFVQ)
```

ACH3LK8CMDYZ5AA (ABVZDCPEJX8FWUKYRFVA)  
ACH3XG76LL68ZE8 (ABVZDCPEJX8FWUC4QVWA)  
ACHMFG76MT6A (ABVZDCPEJX8FWUC6QZYQ)  
ACJ3PG74MXWZTE8 (ABVZDCPEJX8FWT3BRBXQ)  
ACJL78X6NT5ZTDY (ACF3DK8ENXYFWUDAQRXA)  
ACJMLX7LPYZ3CY (ABVZDCPEJX8FWT3AQFXQ)  
ACK37HACLLYJVEY (ACF3DK8ENXYFWT27QVXQ)  
ACK3THPYLLYZPFA (ACF3DK8ENXYFWUK5RBVQ)  
ACK3ZKP6MA (ABVZDCPEJX8FWUC2QNXQ)  
ACK4H8XRMTYZ2 (ACF3DK8ENXYFWUK5RBXQ)  
ACK4HM7VLU (ABVZDCPEJX8FWUKZQVZA)  
ACKLL87XMEAJVCY (ABVZDCPEJX8FWUC4QBVA)  
ACLLTLH5L37ZHD8 (ACF3DK8ENXYFWUKYQ5VQ)  
ACLMFKPSM8A8ZBQ (ABVZDCPEJX8FWUKYRBA)  
ACML5HYFM3WZTCY (ABVZDCPEJX8FWUKZRBVQ)  
ACMLTHYCND7Q (ABVZDCPEJX8FWUSYQJVA)  
ACN33K8CNX5ZS (ABVZDCPEJX8FWTTAQFVQ)  
ACN3DKH2L8CZ4 (ABVZDCPEJX8FWUC2QNZ4)  
ACNL7KH2 (ABVZDCPEJX8FWUC2QRVA)  
ACNLZMGB (ABV2G655JHHVQYLQRBY6UR9SLQ, AB5JZEGBE3HVY)  
ACP3LKADMHYZPBQ (ABVZDCPEJX8FWUK5RFA)  
ACP3R8YELVAA (ABVZDCPEJX8FWUKZQVYA)  
End Feature

Feature: UU\_SE\_PNE\_VE\_Cfg8 3.4 [  
Server:server1

Users/Hosts:

AC8LDLH7MXYJ9 (ACF3DK8ENXYFWT27QVYQ)  
AC8LF87UMD5ZPBQ (ABVZDCPEJX8FWUC2QNZQ)  
AC8MLKHKNX78ZCY (ABVZDCPEJX8FWUC2QBVQ)  
AC9L7HAJMQ (ABVZDCPEJX8FWT3ARBXQ)  
AC9LRL74 (ABVZDCPEJX8FWUKZQNYQ)  
AC9LXL7YMU (ABVZDCPEJX8FWUC6QJVQ)  
ACE3H8XZM7Y2LDA (ABVZDCPEJX8FWUKZRBVQ)  
ACF3DLXRLTWZS (ABVZDCPEJX8FWUKYQJYQ)  
ACF4BGYCL35J6 (ABVZDCPEJX8FWT3AQFXA)  
ACF4FG7ZMABQ (ACF3DK8ENXYFWUDAQRWA)  
ACF4FG7ZMD7A (ACF3DK8ENXYFWUKYRFYA)  
ACG37LAELLY67Q (ACF3DK8ENXYFWUKYQ5WA)  
ACGLH8XRNT7ZA (ABVZDCPEJX8FWT24QRXQ)  
ACGLVH76M72ZTBA (ACF3DK8ENXYFWUKYRFXA)  
ACGLZG7WMXY2BDY (ABVZDCPEJX8FWUC2QNXA)  
ACGMFG74NH2A (ABVZDCPEJX8FWUC2QNYA)  
ACGMHH7RMU (ACF3DK8ENXYFWUSYQFVQ)  
ACH3LK8CMDYZ5AA (ABVZDCPEJX8FWUKYRFVA)  
ACH3XG76LL68ZE8 (ABVZDCPEJX8FWUC4QVWA)  
ACHMFG76MT6A (ABVZDCPEJX8FWUC6QZYQ)  
ACJ3PG74MXWZTE8 (ABVZDCPEJX8FWT3BRBXQ)  
ACJL78X6NT5ZTDY (ACF3DK8ENXYFWUDAQRXA)  
ACJMLX7LPYZ3CY (ABVZDCPEJX8FWT3AQFXQ)  
ACK37HACLLYJVEY (ACF3DK8ENXYFWT27QVXQ)  
ACK3THPYLLYZPFA (ACF3DK8ENXYFWUK5RBVQ)  
ACK3ZKP6MA (ABVZDCPEJX8FWUC2QNXQ)  
ACK4H8XRMTYZ2 (ACF3DK8ENXYFWUK5RBXQ)  
ACK4HM7VLU (ABVZDCPEJX8FWUKZQVZA)  
ACKLL87XMEAJVCY (ABVZDCPEJX8FWUC4QBVA)  
ACLLTLH5L37ZHD8 (ACF3DK8ENXYFWUKYQ5VQ)  
ACLMFKPSM8A8ZBQ (ABVZDCPEJX8FWUKYRBA)  
ACML5HYFM3WZTCY (ABVZDCPEJX8FWUKZRBVQ)  
ACMLTHYCND7Q (ABVZDCPEJX8FWUSYQJVA)  
ACN33K8CNX5ZS (ABVZDCPEJX8FWTTAQFVQ)  
ACN3DKH2L8CZ4 (ABVZDCPEJX8FWUC2QNZ4)  
ACNL7KH2 (ABVZDCPEJX8FWUC2QRVA)  
ACNLZMGB (ABV2G655JHHVQYLQRBY6UR9SLQ, AB5JZEGBE3HVY)  
ACP3LKADMHYZPBQ (ABVZDCPEJX8FWUK5RFA)  
ACP3R8YELVAA (ABVZDCPEJX8FWUKZQVYA)  
End Feature

-----  
Feature Usage

-----  
None.

=====  
License Server Coverage  
=====

-----  
Vendor:wrsd  
Hostname:server1  
Hostid:12345ABC  
-----

Uptime: 89 days 22 hours 13 mins 46 secs (99.92%)

Server Down Periods:

21-Jul-2008 08:05      21-Jul-2008 09:50      1 hours 44 mins 22 secs

Corrupted Blocks:

None.

Missing Blocks:

None.

=====  
Report Log Diagnostics  
=====

Report Authentication: DCBAEF0A2554DF49

# 10

## Configuring Borrowing of Wind River Product Licenses

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### 10.1 Understanding Borrowing

Many Wind River products are license-managed, which means that they check for a valid license on startup. If a product installation is configured to use a license from a pool of *floating* or *named-user* licenses, the development workstation must be connected to the network in order to retrieve a license from the license server.

Borrowing is a feature that allows you to retrieve a license and continue to use it after disconnecting from the network, essentially turning a floating or named-user license into a node-locked license for a defined period of time (for more information on types of licenses, see [2.1.1 Types of Workstation License](#), p.4).

For example, if you are planning to travel with a laptop and want to use a license-managed product while in-flight or after you arrive at your destination, you must borrow a license before you leave. However, if you plan to use the product only from a computer that is always connected to the network, then you do not need to use this feature.

A single Wind River product—such as Wind River Workbench—may actually contain a group of separately licensed features, not all of which permit borrowing. In the license server's license file, any feature string that contains the keyword **BORROW** indicates that the feature permits borrowing.



---

**NOTE:** Do not attempt to manually append the **BORROW** keyword to a feature string in a license server file. It will *not* work, and may cause the license server to function improperly.

---

## 10.2 Do You Need to Configure Borrowing?

If your system includes floating or named-user licenses for Wind River products, and your developers intend to use those products while disconnected from the network, you must configure your development workstations to borrow the appropriate license.

If your system includes only node-locked licenses, then your developers can freely use Wind River products as soon as their installations are permanently activated. For information on permanent and temporary activation, see [7. Permanently Activating a Temporary License](#).

## 10.3 Setting Up the License Server for Borrowing

You do not have to do anything to enable a license server for borrowing, other than ensuring that it has enough floating or named-user licenses to allocate.

However, if necessary, you can use the FLEXlm **BORROW** keywords in your options file to control which users can or cannot borrow licenses for specific products. For information on creating an options file and using it to provision product licenses, see [11. Controlling Access to Products Using the Options File](#).



**CAUTION:** If your license server is running an old version (prior to FlexLM 8.3b) of the **wrsd** daemon, your developers cannot borrow licenses. To find the version of a running **wrsd** daemon, navigate to the installation directory of your license administration tools and type the following at a command prompt:

```
% lmutil lmver wrsd
```

For details on the keywords cited below, see [B. FLEXlm Options File Reference](#).

### 10.3.1 Allowing or Restricting Borrowing

You can allow or restrict borrowing by specifying a particular user, or a group of users, or several other **type** designations.

For example, to allow only certain users to borrow licenses, add a line to your options file of the following form:

```
INCLUDE_BORROW feature type name
```

For example, if you want to allow Tom to borrow Wind River Workbench, type the following, substituting the correct feature name for **WORKBENCH**:

```
INCLUDE_BORROW WORKBENCH USER tom
```

Likewise, you can prevent certain groups from borrowing particular features by adding two lines to the options file of the following form:

```
GROUP groupName user1 user2 user3  
EXCLUDE_BORROW feature type groupName
```

For example, to exclude the members of team1 from borrowing Workbench, type the following:

```
GROUP team1 joe bill susan  
EXCLUDE_BORROW WORKBENCH GROUP team1
```

### 10.3.2 Restricting the Number of Licenses That Can Be Borrowed

You can set aside a certain number of licenses that cannot be borrowed. This can help prevent a situation in which you have a limited number of seats of a particular product and all seats are tied up for an extended period of time.

To do this, add a line to your options file of the following form:

```
BORROW_LOWWATER feature num_licenses
```

For example, if you have a certain number of licenses of Workbench, and you want to specify that three cannot be borrowed, type the following:

```
BORROW_LOWWATER WORKBENCH 3
```

### 10.3.3 Reducing the Length of Time a Feature Can Be Borrowed

Generally, the length of the borrowing period is set when you obtain the license server license file; the default is seven days (or 168 hours).

If necessary, you can reduce the time for which a particular feature can be borrowed—for example, if it is a critical feature that many developers need access to.

To do this, add a line to your options file of the following form:

```
MAX_BORROW_HOURS feature n
```

For example, to reduce the borrowing period for Workbench from 168 hours down to 48 hours, type the following:

```
MAX_BORROW_HOURS WORKBENCH 48
```

## 10.4 Setting Up a Workstation for Borrowing

You, or your developers, must configure development workstations for borrowing before they are ready to run license-managed products while disconnected from the network.



---

**NOTE:** The developer must have administrator privileges to be able to borrow on Windows, because borrowing information is written to the registry.

---

### 10.4.1 Configuring Borrowing Using the Command Line

License management utilities are not part of a default workstation installation, so you must make them accessible to your developers if you want them to borrow licenses using this method.

**Step 1: Connect the workstation to the network.**

The workstation must have access to a running license server.

**Step 2: Specify the path to the server license file.**

1. Create an environment variable called **WRSD\_LICENSE\_FILE**.
2. Set the value of this variable to the full path to the **WRSLicense.lic** file on the server (if you know it), or to the *port@servername* indicated in the **SERVER** line of the server license file.

If the workstation has a floating or named-user license file (usually *installDir/license/WRSLicense.lic*), it will contain the port and server values for the license server regularly used by that computer. Read the contents of this file and find the string that looks like this:

```
SERVER myserver hostID 27000
```

In this case, the server name is **myserver** and the port is **27000**, so the value of **WRSD\_LICENSE\_FILE** should be **27000@myserver**.

**Step 3: Specify a borrow period.**

You can configure the borrow period using the FlexLM utility **lmborrow**, or by creating an environment variable, **LM\_BORROW**.

**lmborrow**

1. Navigate to the license management tools directory and type the following:

```
% lmtutil lmborrow wrsd dd-mmm-yyyy:hh:mm
```

**wrsd** is the Wind River vendor daemon, and *dd-mmm-yyyy:hh:mm* is the end date and time of the borrow period.

For example, **lmtutil lmborrow wrsd 10-aug-2006:17:00**.

Details of **lmtutil** options and syntax are located in [C. FLEXlm Command Reference](#).

**LM\_BORROW**

1. Create an environment variable named **LM\_BORROW**.
2. Set the value of this variable to *dd-mmm-yyyy:wrsd:dd-mmm-yyyy:hh:mm*.

The first date string is the starting date of the borrow period; **wrsd** is the Wind River vendor daemon; and the second date string specifies the end date and time of the borrowing period.

For example, **07-may-2006:wrsd:18-may-2006:17:00**.



---

**NOTE:** Setting the end time is optional. If you do not specify a time, the borrow period expires at 23:59 hours on the end date.

---

**Step 4: Borrow a license.**

While the computer is still connected to the network, launch the license-managed product; for example, Wind River Workbench.

At this point, the borrow is complete, and the license will remain checked out and available for use on this workstation until the borrow period expires.

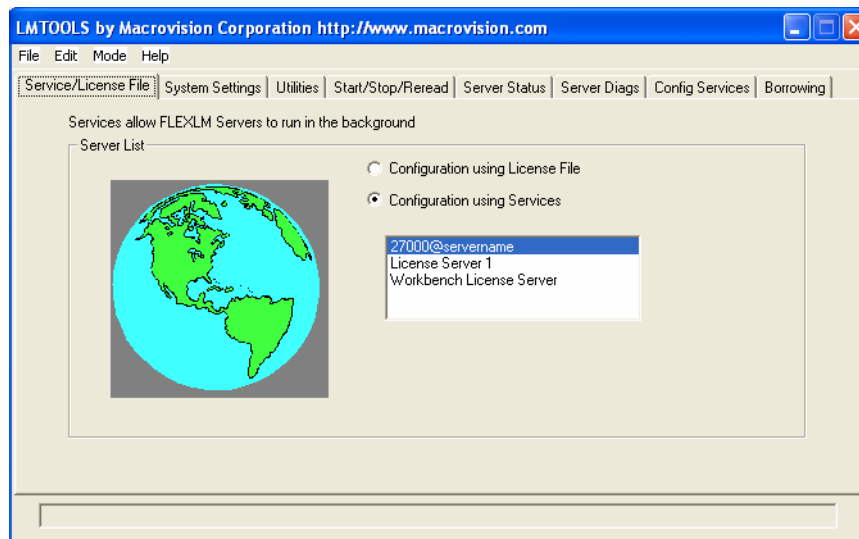
## 10.4.2 Configuring Borrowing Using the Windows LMTOOLS Graphical Utility

This method is convenient if your developers are using Windows development workstations and prefer a graphical interface to the configuration tool.

License management utilities are not part of a default development computer installation, so you must make them accessible to your developers if you want them to borrow licenses using this method.

1. Launch the **lmtools** utility from the development workstation by selecting **Start > Run**, then enter **lmtools.exe** and click **OK**.
2. Specify the license file of the license server that will allocate their licenses.
  - a. Click the **Service/License File** tab.

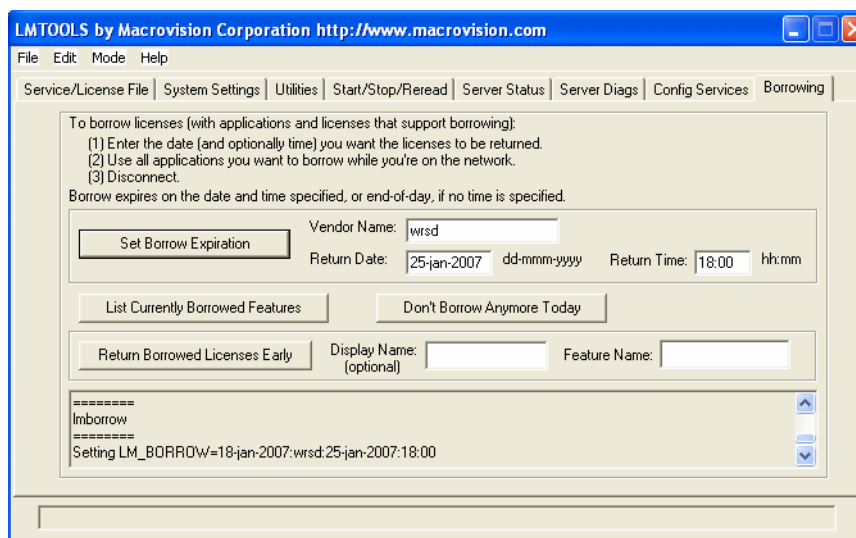
Figure 10-1 Specify the License File



- b. Select **Configuration Using License File**.
- c. Enter the path to the license file on the license server, or enter the *port@server* string as described in [10.4.1 Configuring Borrowing Using the Command Line](#), p.69.

3. Click the **Borrowing** tab.

Figure 10-2 Set the Borrow Return Date



- a. Enter the vendor name **wrsd**.
  - b. Specify a return date (the end of the borrowing period).
  - c. If necessary, adjust the return time.
  - d. Click **Set Borrow Expiration**.
4. Exit the **lmtools** utility.
  5. While the workstation is still connected to the network, launch the license-managed product; for example Wind River Workbench.

At this point, the borrow is complete, and the license will remain checked out and available for use on this workstation until the borrow period expires.

## 10.5 Initiating Borrowing

To borrow a license for a Wind River product, you must do the following:

1. Configure the development workstation as described in [10.4 Setting Up a Workstation for Borrowing](#), p.69.
2. Ensure that all products and features that will be borrowed have been checked out at least once.
3. Keep the workstation connected to the network (with access to the license server) while initiating borrowing.

### 10.5.1 Borrowing by Running the Application

Once you have configured the workstation for borrowing, all you need to do is to specify a new borrow period (as described in [Step 3:Specify a borrow period.](#), p.70), then run the license-managed product.

The license will be borrowed, and will remain allocated until the return date you specified, even if you reconnect to the network before the borrow return date.

### 10.5.2 Borrowing Without Launching the Application

By using the **BorrowUtil** utility, you can borrow a license without launching the license-managed application, but first you must identify the specific text strings corresponding to the features you want to borrow (some features listed may not permit borrowing, as described in [10.1 Understanding Borrowing](#), p.67).

1. Navigate to the location of **lmutil** and type the following to see a list of the features your license server allocates.

```
% lmutil lmstat -a -c port@server
```



**NOTE:** Locate the *port@server* information as described in [10.4.1 Configuring Borrowing Using the Command Line](#), p.69.

Figure 10-3 Viewing Available Features Using lmstat

```
C:\WINDOWS\system32\cmd.exe
C:\tmp>lmutil lmstat -a -c 27000@aos
lmutil - Copyright (c) 1989-2005 Macrovision Europe Ltd. and/or Macrovision Corporation. All rights reserved.
Flexible License Manager status on Fri 8/4/2006 11:36

[Detecting lmgrd processes...]
License server status: 27000@aos
License file(s) on aos: /Folk/curley/licenses/lmgr/v9.5.4/WRSLicense.lic:
aos: license server UP (MASTER) v9.5
Vendor daemon status (on aos):
wrsd: UP v9.5
Feature usage info:
Users of WR_HORKBENCH: (Total of 600 licenses issued; Total of 0 licenses in use)
Users of WR_ADA: (Total of 600 licenses issued; Total of 0 licenses in use)
Users of WR_ADA_DEBUG: (Total of 600 licenses issued; Total of 0 licenses in use)
Users of WR_DEBUGGER: (Total of 600 licenses issued; Total of 0 licenses in use)
Users of WR_NATIVE_APP_DEBUG: (Total of 600 licenses issued; Total of 0 licenses in use)
Users of WR_MULTICORE: (Total of 600 licenses issued; Total of 0 licenses in use)
Users of WR_CONNECTION_TS: (Total of 600 licenses issued; Total of 0 licenses in use)
Users of WR_CONNECTION_UA: (Total of 600 licenses issued; Total of 0 licenses in use)
Users of WR_CONNECTION_OCD: (Total of 600 licenses issued; Total of 0 licenses in use)
Users of WR_CONNECTION_GS: (Total of 600 licenses issued; Total of 0 licenses in use)
Users of WR_SYSTEM_VIEWER: (Total of 600 licenses issued; Total of 0 licenses in use)
Users of WR_STETHOSCOPE: (Total of 600 licenses issued; Total of 0 licenses in use)
Users of WR_MEMSCOPE: (Total of 600 licenses issued; Total of 0 licenses in use)
Users of WR_PROFILESCOPE: (Total of 600 licenses issued; Total of 0 licenses in use)
Users of WR_TRACESCOPE: (Total of 600 licenses issued; Total of 0 licenses in use)
Users of WR_COVERAGESCOPE: (Total of 600 licenses issued; Total of 0 licenses in use)
Users of WR_CODE_METRICS: (Total of 600 licenses issued; Total of 0 licenses in use)
Users of WR_UNIT_TEST: (Total of 600 licenses issued; Total of 0 licenses in use)
Users of WR_OA: (Total of 600 licenses issued; Total of 0 licenses in use)
Users of WR_OA_MULTICORE: (Total of 600 licenses issued; Total of 0 licenses in use)
Users of WR_GCC_VX: (Total of 600 licenses issued; Total of 0 licenses in use)
```

2. Initiate borrowing using **BorrowUtil**.
  - a. From a Windows command prompt, run **BorrowUtil.exe** or from a UNIX shell window, run **BorrowUtil**.
  - b. When prompted, enter the feature name you wish to borrow; for example, **WR\_COMPILER\_PPC**.

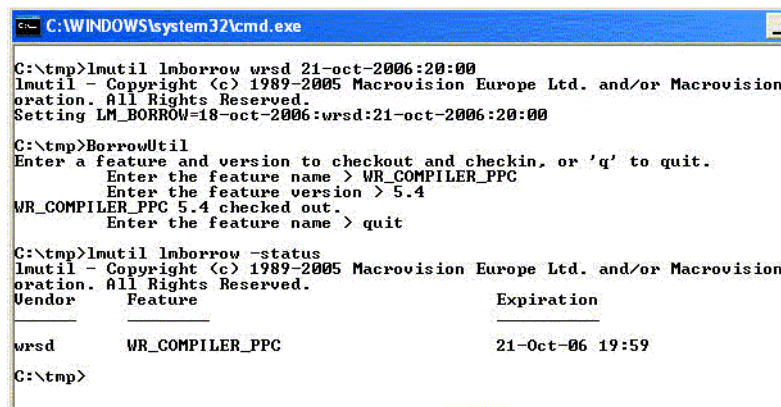
- c. When prompted, enter the version number of the feature you wish to borrow, such as 5.6. To see the version number of the feature you are interested in, do one of the following:
    - (Recommended) Type the command

```
% lmutil lmstat -f featureName -c pathToLicenseFile
```

or
      - Check the version information in the license file (**WRSLicense.lic**) on your license server. This method is not preferred, as the syntax of the license file can be complex when many products and features are licensed.
  - d. As prompted, you can enter feature and version strings for as many features as you need to check out. When you are finished, enter **quit**.
3. You can verify that the features are successfully borrowed by running the following command:

```
% lmutil lmborrow -status
```

Figure 10-4 Borrowing Utility Example



```
C:\WINDOWS\system32\cmd.exe
C:\tmp>lmutil lmborrow wrsd 21-oct-2006:20:00
lmutil - Copyright (c) 1989-2005 Macrovision Europe Ltd. and/or Macrovision
ration. All Rights Reserved.
Setting LM_BORROW=18-oct-2006:wrsl:21-oct-2006:20:00
C:\tmp>BorrowUtil
Enter a feature and version to checkout and checkin, or 'q' to quit.
Enter the feature name > WR_COMPILER_PPC
Enter the feature version > 5.4
WR_COMPILER_PPC 5.4 checked out.
Enter the feature name > quit
C:\tmp>lmutil lmborrow -status
lmutil - Copyright (c) 1989-2005 Macrovision Europe Ltd. and/or Macrovision
ration. All Rights Reserved.
Vendor      Feature      Expiration
-----
wrsd        WR_COMPILER_PPC      21-Oct-06 19:59
C:\tmp>
```

4. To cancel borrowing or specify a different borrow period, run the following command:

```
% lmutil lmborrow -clear
```

To verify, the following command should indicate no borrowed features:

```
% lmutil lmborrow -status
```

### Providing Input Data to BorrowUtil from a File

If you wish to script the input to check out a large set of feature/version pairs, create a text file that contains each feature you wish to check out followed by its version number on a separate line. The following example checks out two feature/version pairs.

### BorrowUtil Input File

```
WR_COMPILER_PPC  
5.4  
WR_WORKBENCH  
2.5  
quit
```

This file can be used as input to the borrow utility program and is invoked as follows:

On Windows:

```
C:\> BorrowUtil.exe < input-file
```

On UNIX:

```
% BorrowUtil < input-file
```

### 10.5.3 Disconnect from the Network

The steps in [10.5 Initiating Borrowing](#), p.72, can be repeated for any number of borrow periods and features. Once this is complete, you can disconnect the development workstation from the network.

## 10.6 Returning Borrowed Licenses Early

Once the development host is re-connected to the network and can access the license server from which the features were borrowed, you can return licenses early (prior to the end of the borrow period) if desired.

To return a license before the borrow period end date, follow these steps:

1. Run the following command:

```
% lmutil lmborrow -return feature-name
```

where *feature-name* is the name of the licensed feature you wish to return early. You must do this for each feature borrowed that you wish to return early.

To verify, the following command should indicate no borrowed features:

```
% lmutil lmborrow -status
```



---

**NOTE:** For `wrsd` daemon features, the FlexLM version of the `wrsd` daemon must be at least version 9.2 in order for a license feature to be returned early.

---



# 11

## *Controlling Access to Products Using the Options File*

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### 11.1 Introduction

This chapter describes how to set up and configure your license server's options file to manage how your Wind River software licenses are used—which products, where, when, and by whom.

Because the options file resides on your license server, it pertains to the named-user (NU<sup>1</sup>) and floating (FL) license types, not to the node-locked (NL) license type.

#### **Do You Need to Configure an Options File?**

In some situations, it may be necessary to restrict which users can access which products.

---

1. In older licenses, NU (named user) may appear as UU (unique user).

If a single license server manages multiple products (as described in [12. Setting Up a Single License Server for Multiple Products](#)) or manages both named-user and floating licenses, software access problems and reporting inaccuracies can arise. For example, if the license server allows access to named-user licenses when it should be allocating floating licenses, workgroup members may be blocked from running Wind River products.

License allocation is particularly important for named-user licenses, as these cannot be shared among other users unless those other users are specified in the list of usernames. This list is maintained in the license server through the options file.



---

**CAUTION:** If your organization has purchased named-user licenses, you *must* configure the options file to list usernames.

---

## 11.2 Identifying Software Packages in Your License File

The license file that you received from Wind River (see [3.3 Obtaining Server License Files](#), p.8 and [4. Obtaining Workstation Licenses](#)) contains a list of licensed software packages. To find the list, open the license file. Each software package is listed after the keyword **INCREMENT**. For example:

```
INCREMENT NU_VDT_Cfg25 wrsd 2.21 18-jun-2008 9 DDFD83C3DC8F \
```

The line above includes the following elements:

- The package designator (in this case, **NU\_VDT\_Cfg25**)
- The number of seats licensed (in this case, 9)

For named-user licenses, the package designator is prefixed with **NU** (or, in the case of older licenses, **UU**). For floating licenses, the package designator is prefixed with **FL**.

In the options file, you will use the package designator as a feature that can be allocated to or restricted from users.

## 11.3 Creating an Options File

First, check whether your license server has an options file already defined. If you already have an options file, and if the filename has not been changed, it is called **wrsd.opt**. The options file is in plain text, and should be located in the same directory as your license file.

If the name or the location of the options file has been changed, you can find this information in the license file, in the **VENDOR** line:

```
VENDOR wrsd pathToDaemon options=pathToAndNameOfOptionsFile
```

If you do not have an existing options file, create a file named **wrsd.opt** with any text editor.

The following sections describe various license allocation methods. For detailed information on options file syntax and keywords, see [B. FLEXlm Options File Reference](#).

## 11.4 Specifying Users for Each Licensed Package

To create the list of licensed users, you will need the desktop login names of the people who are to use the various software packages that your organization has licensed.



---

**NOTE:** The named-user license type does not allow sharing of licenses within a group of users. The list of login names may not exceed the number of seats licensed by your organization for a given software package.

---

### Adding Names to the Options File

To add login names to the options file, open the file **wrsd.opt** in a text editor. For every user that you want to include, add the following line:

```
INCLUDE packageDesignator USER userLoginName
```

For information on determining the correct package designator, see [11.2 Identifying Software Packages in Your License File](#), p.78.



---

**CAUTION:** For named-user licenses, you must add at least one name, and you may not list more names than the number of seats licensed.

If both of these requirements are not met, the license server will not allow access to the software package, and will issue an error.

---



---

**NOTE:** Everything in an options file is case-sensitive. Be sure that usernames and feature names, for example, are entered correctly.

---

The license server's log file will indicate the number of seats licensed and the number of users you have entered.

## 11.5 Defining User Groups

If you have a large number of seats to allocate, it is useful to create groups of users organized by, for example, project or location. To create a group, add the following lines to the options file:

```
GROUP myGroupName userName1 userName2 userName3  
INCLUDE packageDesignator GROUP myGroupName
```

Each group must be defined on a separate line. There is no limit to the number of groups you can create. Users may also belong to multiple groups.

For example, the following lines define two groups of included users:

```
GROUP WB_USERS_1 george paul john ringo  
GROUP WB_USERS_2 peter paul mary
```

There is a limit of 2048 characters per line in the options file. Therefore, it can be advantageous to define multiple groups so that you can add to the lists of users as the groups grow.

You can also define a group of development workstations (rather than users). For information on this method of license allocation, see [11.7 Controlling Access with PROJECT and LM\\_PROJECT](#), p.82.

## 11.6 Controlling Access with the INCLUDE and EXCLUDE Keywords

Using the options file's **INCLUDE** and **EXCLUDE** keywords allows you to restrict a developer's access to license-managed products; for example, to a single product or to a single license type.

- Use **INCLUDE** when you want to provide access only to a small number of users; any user not on the list is excluded.
- Use **EXCLUDE** when you want to deny access only to a small number of users; everyone not on the list is allowed to use the feature.

You should not need to use both **INCLUDE** and **EXCLUDE** in the same options file, but you can. Rules of precedence take effect when **INCLUDE** and **EXCLUDE** statements are combined in the same options file and both are exercising control over access to the same features: the **EXCLUDE** list is checked before the **INCLUDE** list. Thus, someone appearing on both lists for the same product is not allowed to use it.



---

**NOTE:** If you rely on user lists to restrict access, you must modify the options file to reflect personnel changes, such as new hires, employee resignations, or project re-assignments (when a user might require access to different products).

---

### 11.6.1 Restricting Access to a Single Product

The following example illustrates how to use the **INCLUDE** keyword to restrict access to a single product.



**NOTE:** The examples assume that the **PATH** environment variables have been set to `installDir/licadmintools-1.2/license/hostType/bin` to allow access to the utilities.

1. Decide who is to use this version of the product.
2. Define your users as described in [11.4 Specifying Users for Each Licensed Package](#), p.79, or user groups as described in [11.5 Defining User Groups](#), p.80.
3. Add the action lines.

Create an **INCLUDE** line for each user or group of users to be given access to the product or feature. The syntax is as follows:

*action packageDesignator type name*

For instructions on determining the package designator, see [11.2 Identifying Software Packages in Your License File](#), p.78.

For example:

```
INCLUDE NU_WORKBENCH_SUBSCRIPTION_Cfg1 GROUP WB_USERS_1  
INCLUDE NU_WORKBENCH_SUBSCRIPTION_Cfg1 GROUP WB_USERS_2
```

In this example, only users in these two groups will have access to licenses for this instance of Wind River Workbench.

4. Save the file. Make sure to maintain the **.opt** file extension.
5. Reread the modified options file, as described in [11.9 Rereading the Updated Options File](#), p.83.

## 11.6.2 Restricting Access to a Single License Type

If your organization has purchased both named-user and floating license types, you can use the **INCLUDE** action keyword to restrict access for a group of users to one license type or another.

Follow the steps below to restrict access for a particular group of users.

1. Decide who is to use the named-user licenses and who is to use the floating licenses.
2. Define your users as described in [11.4 Specifying Users for Each Licensed Package](#), p.79, or user groups as described in [11.5 Defining User Groups](#), p.80.
3. Add the action lines.

Create an **INCLUDE** line for each product or feature name, and associate the feature with the appropriate user or group. The syntax is as follows:

*action packageDesignator type name*

For instructions on determining the package designator, see [11.2 Identifying Software Packages in Your License File](#), p.78.

For example:

```
INCLUDE NU_WORKBENCH_SUBSCRIPTION_Cfg1 GROUP WB_NU  
INCLUDE FL_WORKBENCH_SUBSCRIPTION_Cfg1 GROUP WB_FL
```

In this example, the user groups correspond to the type of license they are permitted to use.

The included users will be able to check out these feature names.

4. Save the file. Make sure to maintain the **.opt** file extension.
5. Reread the modified options file, as described in [11.9 Rereading the Updated Options File](#), p.83.



---

**NOTE:** If you use **INCLUDE** and **EXCLUDE** to limit access, you must maintain the user lists to reflect personnel changes. For example, if Barry V. leaves the company and Emma N. replaces him, the group, **WB\_NU**, as defined in the options file, must change. Or if Dave H. shifts from developing with a floating license to using a named-user seat, group membership as defined in the options file must be modified to reflect that change.

---

## 11.7 Controlling Access with **PROJECT** and **LM\_PROJECT**

Setting a development workstation's **LM\_PROJECT** environment variable to match a **PROJECT** type defined in a license server's options file identifies that workstation as a member of a particular group with restricted access to licenses.

This restriction might be useful, for example, if a single license server handles multiple products and you want certain workstations to have access to one product or another. Or you might use this restriction if a single license server handles two instances of Wind River Workbench with different license types and you want to restrict access for certain workstations to one license type or the other.

If you have a merged license file (see [12.3 Merging License Server Files](#), p.89), you can use **PROJECT** to define a group associated with each license type. You then set the workstation's **LM\_PROJECT** environment variable to point to one of the two group names, which restricts access for that workstation to the associated license type.



---

**NOTE:** This method differs from the **INCLUDE/EXCLUDE** method described in [11.6.2 Restricting Access to a Single License Type](#), p.81, because it does not require the creation of user lists.

---

Follow the steps below to set up your license server and development workstations with this type of license allocation.

1. Identify your **PROJECT** groups. For example, if the license server's name is **jupiter**, you might use **jupiter\_NU** and **jupiter\_FL**.
2. Add the action lines.

Create an **INCLUDE** line for each license type of a product or feature, and associate it with the appropriate group name. The syntax is as follows:

*action packageDesignator type name*

For instructions on determining the package designator, see [11.2 Identifying Software Packages in Your License File](#), p.78.

For example:

```
INCLUDE NU_WORKBENCH_SUBSCRIPTION_Cfg1 PROJECT jupiter_NU
INCLUDE FL_WORKBENCH_SUBSCRIPTION_Cfg1 PROJECT jupiter_FL
```

The included users will be able to check out these feature names.

3. Save the file. Make sure to maintain the **.opt** file extension.
4. Set the environment variable on the development workstation.

To restrict a workstation so that it can use only named-user licenses, set the value for **LM\_PROJECT** to **jupiter\_NU** on that workstation.

To restrict a workstation to use only floating licenses, set **LM\_PROJECT** to **jupiter\_FL** on that workstation.

5. Reread the modified options file, as described in [11.9 Rereading the Updated Options File](#), p.83.



---

**NOTE:** The **PROJECT/LM\_PROJECT** method of limiting access requires that the **LM\_PROJECT** environment variable be properly set on participating workstations. There is still administrative overhead using **PROJECT** and **LM\_PROJECT**, but because individual users' names are not specified, the ongoing maintenance should be less than if you use the **INCLUDE** and **EXCLUDE** keywords.

---

## 11.8 Additional Allocation Methods

In addition to **INCLUDE/EXCLUDE** and **PROJECT/LM\_PROJECT**, you can configure the options file with any of the available keywords to fine-tune your license allocation. For example, you can reserve licenses for critical groups, or set limits on licenses for certain software packages. You can set a maximum number of hours during which a feature can be borrowed; or set a "lowwater" number for licenses to be borrowed. For detailed information on these methods, see [B. FLEXlm Options File Reference](#).

## 11.9 Rereading the Updated Options File

In order for the license allocations you have made in the options file to take effect, the file must be registered with the license server.



---

**NOTE:** For named-user licenses, the options file *must* be reread in order for developers to use the product.

---

There are two ways to have the options file reread:

### Restarting the License Server

When the license server restarts, it automatically reads the options file and puts into effect any license restrictions you have specified. For instructions on stopping and restarting the license server, see [8.5 Stopping a License Server](#), p.58, and [8.4 Starting a License Server](#), p.56.

### Forcing the License Server to Reread the Options File

You can also have the options file reread without restarting the license server.



**NOTE:** There is a twelve-hour latency period for each read of the options file. That is, once a new options file is read, the changes take effect twelve hours later. If you want your changes to take effect immediately, you must restart your license server.

To have the server reread the options file, perform the steps outlined below.

#### Using a command prompt:

- a. Change directories to the location of the license administration tools, by default `installDir/licadmintools-1.2/license/hostType/bin`.
- b. Type the following:  

```
% lmutil lmreread -c pathToLicenseFile
```

The `-c` argument tells **lmreread** that the input, `pathToLicenseFile`, is the full path to the license file. Rereading the license file then forces the rereading of the options file.

#### Using the LMTOOLS utility (Windows only):

- a. If it is not already running, launch the **lmtools** utility from the development workstation: select **Start > Run**, then enter **lmtools.exe** and click **OK**.
- b. Go to the **Start/Stop/Reread** tab.
- c. Make sure the appropriate license server is selected.
- d. Click **Reread License File**.

## 11.10 Using the Options File for Debugging

In the options file, you can use the action keywords **DEBUGLOG** and **NOLOG** to help control output to a run-time debug log. This log tracks checkins, checkouts, and error messages associated with the **wrsd** daemon, as distinct from the regular debug log that tracks data for all vendor daemons on any one license server.

For syntax and additional information about these keywords, see [B. FLEXlm Options File Reference](#).

## 11.11 Sample Options File

The text below is an example of an options file that uses keywords to restrict access to products.

```
#----- Sample Options File for Wind River Packages -----  
#  
# This file shows how to manage named-user licenses and allocate  
# them to named users.  
# Consult the resources on Wind River Online Support at  
# www.windriver.com/support/support_login.html  
#  
  
#-- Allocating two users, Matt Williams and Henry Vu, to the GPP-VE package.  
#-- Note that the usernames should match their desktop login names which are  
#-- case-sensitive.  
INCLUDE NU_SE_GPP_VE_Cfg22 USER mwilliams  
INCLUDE NU_SE_GPP_VE_Cfg22 USER henry.vu  
  
#-- Creating logical groups for allocation.  
#-- This also helps when you have a large number of users to manage across  
#-- different projects.  
GROUP project_phoenix mbrown swang henry.day liang.li  
INCLUDE NU_VDT_Cfg25 GROUP project_phoenix  
  
#-- Preventing workgroup members from grabbing more named-user licenses from  
#-- the pool.  
#-- This may happen if a named user logs on from different desktops at the  
#-- same time.  
MAX 1 NU_VDT_Cfg25 GROUP project_phoenix  
  
#-- Excluding a particular user or group of users from accessing some  
#-- floating licenses.  
EXCLUDE FL_P_WB_4OCD_Cfg1 USER steve.Li
```



# 12

## *Setting Up a Single License Server for Multiple Products*

[12.1 Should You Use a Single Server for Multiple Products? 87](#)

[12.2 Keeping License Server Files Separate 88](#)

[12.3 Merging License Server Files 89](#)

[12.4 Removing Wind River Products from Merged License Files 90](#)

### **12.1 Should You Use a Single Server for Multiple Products?**

As a matter of convenience, you may prefer to use a single license server to allocate licenses for multiple Wind River products. However, Wind River recommends that whenever possible, you put each Wind River license server file on a separate license server computer as described in [8. \*Installing and Configuring a License Server\*](#). This is because of the way that FLEXlm searches license files for product feature names.

#### **12.1.1 Understanding How FLEXlm Searches License Files**

When FLEXlm receives a license request for a particular product, it searches for the corresponding feature name among license files associated with the product's vendor daemon.

For example, if FLEXlm receives a request for Wind River Workbench, it looks for the **WR\_WORKBENCH** feature name in Wind River license files. FLEXlm then authorizes use of the first product with a matching feature name.

This means that if a license server controls licenses for two Wind River Workbench products (such as one named-user license and one floating license, both of which have **WR\_WORKBENCH** components), FLEXlm draws licenses only for the first **WR\_WORKBENCH** encountered, regardless of whether the request is intended for that product or not.

FLEXlm cannot differentiate between the features, which are identical. So it continues to draw licenses associated with the first product until it exhausts available licenses, then begins to draw licenses associated with the second product.

This can lead to reporting inaccuracies when named-user licenses share a license server with floating licenses.



**NOTE:** You can force the daemon to search license files in a particular order (see [12.2 Keeping License Server Files Separate](#), p.88) or you can establish a natural search order from top to bottom in a merged license file (see [12.3 Merging License Server Files](#), p.89).

However, you are still constrained by FLEXlm's limitation that it cannot differentiate among identical feature names and will check out a license for the first feature match it encounters, regardless of whether the license request is for that item or not.

## 12.2 Keeping License Server Files Separate

If you decide to keep the license server files separate, you must also have separate server hardware for the separate license files. This is because only one Wind River vendor daemon can run on a given server system at a time.

With separate license server files, you can use the **lmgrd** command or the LMTOOLS utility to specify the license file search order.

### Using lmgrd to Specify Search Order

To direct the **lmgrd** daemon, in conjunction with the **wrsd** daemon, to look for feature names among multiple license files, type the following command at a Windows command prompt or in a UNIX shell window. Substitute the appropriate path to the license files in place of *installDir*.

```
% lmgrd -c "installDir/NU/WRSLicense.lic;installDir/FL/WRSLicense.lic" -l  
installDir/logs/lmgrd.log
```

This command starts **lmgrd** and instructs it to read **FEATURE** or **INCREMENT** lines from two license files: first, the **WRSLicense.lic** file in the **NU** directory; second, the **WRSLicense.lic** in the **FL** directory. The command also initiates recording of debug run-time data in a log file, **lmgrd.log**.

### Using LMTOOLS

On Windows, you can achieve the same effect using LMTOOLS by following these steps:

1. If it is not already running, launch the **lmttools** utility from the development workstation: select **Start > Run**, then enter **lmttools.exe** and click **OK**.
2. Go to the **Config Services** tab.
3. Modify the **Path to the License File** text box. Use semi-colons to separate license file entries, as above.
4. Switch to the **Start/Stop/Reread** tab and re-read the license files. Or stop the license server and restart it.

Now, when the developer launches a license-managed product (initiating a license request), **lmgrd** searches the files in the order you specified.

## 12.3 Merging License Server Files

If you decide to merge license server files together, keep these things in mind:

- You can merge floating licenses, named-user licenses, or a combination of the two.
- You can only merge license files in which the **SERVER** lines are identical, so you must choose the same license server host when obtaining the licenses on the Wind River licensing Web site. For more information about that process, see [3. Obtaining Server License Files](#).
- You must be careful when merging license files that contain the same feature name (for details, see [12.1.1 Understanding How FLEXlm Searches License Files](#), p.87).

### 12.3.1 Creating a Merged License File

Follow these steps to create a merged license file:

1. Open the license files in a text editor. Use one of the license files as your base, into which to copy and paste text from the second license file.
2. Copy the **PACKAGE**, **INCREMENT**, and **FEATURE** lines of the second license file and paste them after the final line of the first file. Wind River no longer uses the **FEATURE** type for license file features, but you may see it in existing license files.



---

**NOTE:** Do not change any of the characters in the file, other than to copy and paste the text from one license file to another. Changes will invalidate the license file.

---

The resulting license file should look similar to the following:

```
SERVER servername hostID portnumber
VENDOR wrsd
PACKAGE UU_WORKBENCH_SUBSCRIPTION_Cfg1 wrsd 2.0 C7F901C9DB56
  COMPONENTS="WR_DEBUGGER:2.0 WR_TOS_LX_2_4:2.0 \
  WR_TS_MPC82XX:2.0 WR_WORKBENCH:2.0" OPTIONS=SUITE \
  SIGN=13B8CA28C770
INCREMENT UU_WORKBENCH_SUBSCRIPTION_Cfg1 wrsd 2.0 30-jun-2004 1 \
  AB453A501AD8 VENDOR_STRING="<ln>221073</ln> \
  <flt>2</flt><ps>1157-1</ps>" sort=50 BORROW=72 \
  SUPERSEDE=WORKBENCH_SUBSCRIPTION_Cfg1 DUP_GROUP=UH \
  SUITE_DUP_GROUP=UH ISSUED=24-May-2004 SIGN=DF0B491B60DAC

PACKAGE WORKBENCH_SUBSCRIPTION_Cfg1 wrsd 2.0 G798BAC900V6
  COMPONENTS="WR_DEBUGGER:2.0 WR_TOS_LX_2_4:2.0 \
  WR_TS_MPC82XX:2.0 WR_WORKBENCH:2.0" OPTIONS=SUITE \
  SIGN=13B8CA28C770
INCREMENT WORKBENCH_SUBSCRIPTION_Cfg1 wrsd 2.0 30-jun-2004 1 \
  K953FC0S1AL9 VENDOR_STRING="<ln>221073</ln> \
  <flt>2</flt><ps>1157-1</ps>" sort=50 BORROW=72 \
  SUPERSEDE=WORKBENCH_SUBSCRIPTION_Cfg1 DUP_GROUP=UH \
  SUITE_DUP_GROUP=UH ISSUED=24-May-2004 SIGN=DH3B475B43DAM
```

3. Save the merged license file to the directory path mentioned in the license files of the workstations that need to use the listed products.

For detailed information about merging license files, see the *FLEXlm End User's Guide*.

For detailed instructions on controlling users' access to licensed products through the options file, see [11. Controlling Access to Products Using the Options File](#).



---

**CAUTION:** You must be sure to preserve the **.lic** or **.opt** ending on the license file; otherwise, the file will not work properly. On Windows systems, you can do this by selecting **All Files** rather than **Text Document** from the **Save as type** drop-down list.

---

## 12.4 Removing Wind River Products from Merged License Files

If you delete a merged license file, your developers will no longer be able to access any of the products listed in that file. Therefore, if you must remove a particular license-managed product, do not simply delete the license file along with the product.

To remove a product from a merged license file, follow these steps:

1. Make a backup copy of the license file.
2. Using a text editor, open the file and remove the **PACKAGE** and **INCREMENT** lines (and **FEATURE** lines, if they exist) of the product you are uninstalling.
3. Save the file, being sure to preserve the **.lic** file extension.
4. Delete the backup of the original file if you like.

# 13

## *Troubleshooting*

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### 13.1 Introduction

This chapter describes some common problems seen in installing, licensing, and maintaining Wind River products.

If you are facing an issue that is not listed here, use the following resources:

- Documentation on installation and licensing, including:
  - this guide
  - the installer program’s Help systemTo open the installer Help, launch the installer or Product Maintenance Tool and click **Help**. The Help system offers screen-by-screen instructions.
- the getting started guide and release notes for your product

- Wind River Customer Support at [www.windriver.com/support](http://www.windriver.com/support)  
When you contact Customer Support, be ready to provide the following files:
  - `installDir/setup.log`
  - `installDir/maintenance/wrInstaller/hostType/configuration/*.log`

## 13.2 Troubleshooting the Installation and Maintenance Processes

### “Bad Interpreter” Error on Linux Hosts

#### Problem

On certain Linux hosts, when you run the installer (the `setup_linux` application), the following error message may appear:

```
/bin/sh: bad interpreter: Permission denied
```

#### Explanation

The source of this problem is in the GNOME desktop environment on Red Hat hosts (specifically, Red Hat Enterprise Linux versions 5: 2.6.18-128.e15). In the DVD mount process, GNOME uses default attributes that make the DVD mount non-executable. Then, because the DVD is mounted without execution permissions, this error is triggered.

#### Solution

There are two ways to solve this issue:

1. Change the default settings for **gnome-mount** so that the mounted DVD is executable.
2. Edit `/etc/fstab` to override the **gnome-mount** process entirely.

### Older Versions of the Installer Crash During Entitlement Process

#### Problem

If you run an older (<2.0) version of the installer program, it can fail either after you have specified a product activation file (**install.txt** file) or after you have entered a valid license authorization code (LAC).

#### Explanation

The reason for this failure is that some entitlement information is too long for the older installer program to accommodate. If the entitlement takes the form of a string longer than 50 characters, the pre-2.0 installer crashes.

**Solution**

As a workaround for this issue, simply remove the overlong lines from your **install.txt** file or LAC, and restart the installer program.

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**The Maintenance Tool Starts Slowly or Hangs****Problem**

After launching the Product Maintenance Tool, the tool can be slow to start up, or may appear to run in an endless loop.

**Explanation**

In some cases if your organization uses a firewall, the firewall can drop the connections that the Maintenance Tool uses to, for example, find updates to your installed products.

**Solution**

Check the **setup.log** file, located at the root of your installation directory, for errors indicating that the connection has timed out. To avoid this kind of disruption, configure the Maintenance Tool to use a proxy server. For details on how to specify proxy settings, see [Proxy Server](#), p.28.

**The setup.log File Shows “Dependency Issues”****Problem**

The installer program creates a log file of the installation process, called **setup.log**, at the root of your installation directory. After launching the installer, you may see the following message in **setup.log**:

```
Pre-installation checks found products that cannot yet be installed due to
dependency issues.
```

**Explanation**

In the installation process, the installer program checks for inter-product dependencies. If it finds that a particular product is available but cannot be installed because a product that it depends on is absent or lacks entitlement, it logs the failure and disables the product. The **setup.log** file records the name of the online repository that contains the product at issue. Note that in this case, not all products in that repository are disabled, but only the ones that would fail.

In the course of installation, you can see which products have been disabled: At the **Confirm and Install** screen, expand the hierarchical list of products; disabled products are grayed out.

**Solution**

The following are the most common solutions to dependency issues:

- You may have installed an update before that update’s base product was installed. To avoid this, ensure that you install the base product before installing additions to it. For example, install a Platform product first; then

install a service pack that updates the Platform. Use the same installation keys for both pieces.

- If you copied the product media, the copy operation may have failed and left you with an incomplete DVD. To check the integrity of the media, use the **-validate** option described in [Table A-1](#).

## The Installer Reverts to Text Mode (Solaris Hosts)

### Problem

When you run the installer in its default GUI mode on Solaris hosts, it may switch to text mode and the following error message may appear:

```
The installer program cannot run in GUI mode on this host type. Switching to text-based mode...
```

### Explanation and Solution

Possible reasons for this event:

- a. You do not have the GTK 2.0 library installed on this host.

In this case, you can either

- Install the necessary GTK library.

or

- Continue to run the installer in silent (command-line) mode. For information on using the installer in silent mode, see [A. Command-Line Installation](#).

- b. The **DISPLAY** environment variable is not set. This is particularly likely if you are using telnet, putty, or another tool to log in to the host system remotely, or if for some other reason the X Window System has not been started on this host.

You can use xterm to see whether **DISPLAY** is set.

## Expected Software Was Not Installed

### Problem

You have completed installation of Wind River products, but a particular software product, component, or feature that you were expecting to find in the installation is not present.

For example, you are expecting to use Wind River On-Chip Debugging, but it is not available in your installation.

### Explanation and Solution

Most likely, the missing software was not installed because the installation keys (in the **install.txt** file) that you used during installation do not include entitlement for that piece.

Confirm that the missing software was not installed. To do so, examine your installation keys as follows:

1. Navigate to the **images** directory of your installation DVD (or other installation media).
2. Within that directory, find the **mediaID** file in each **CDR-\*** directory.
3. Check each **mediaID** file for its description of what software is included in that CDR grouping.

If there is no CDR directory for the missing software, this confirms that it was not installed.

You may need to retrieve an updated product activation file; or you may need to contact Wind River to discuss your entitlement.

## 13.3 Common Licensing Issues

### Token Denial with Multiple VNC Sessions

#### Problem

If you use multiple VNC sessions to access the server where the license administrator tools are installed, you may not always be granted a license token.

#### Explanation

Working from multiple VNC sessions is similar to working from multiple development computers, though virtually. Because the license server treats these VNC sessions as different development hosts, it checks out a token for each one. If all tokens have already been granted, the license server denies your token request.

#### Solution

See your license administrator about your organization's license allocation policy and how tokens can be made available.

### License Denial with a Dummy Username

#### Problem

If a shared, dummy username is used (for example, in a lab) for access to Wind River products, some users may be denied access.

#### Explanation

The named-user license type is assigned to a single specific user. Using a dummy or name or a name in common shares a license among several users—a violation of this kind of license. So the license server denies access in these cases, to prevent your license from being violated.

### Solution

For named-user licenses, you must have an individual desktop login name for each user.

For more information on the named-user license type, see [2.1.1 Types of Workstation License](#), p.4.

## Using a Dummy Username for a Build Farm

### Problem

A set of build servers that had been using a single, "dummy" username no longer work.

### Explanation

Using a shared name for build servers is not allowed under a named-user license. A named-user license is assigned to a single specific user, not to a build farm.

### Solution

Named-user build farms should not use a dummy username. See your Wind River representative for information on adding licenses or changing the licensing of your products.

## Error=-84

### Problem

The following message appears:

```
Error=-84
```

### Explanation

This error number indicates that either the options file does not contain any usernames, or it lists a larger number of users than you have licensed seats. In either case, no license tokens can be issued. All users will see Error=-84 until the issue is corrected.

### Solution

You must correct the options file.

The options file, **wrsd.opt**, is located by default in the same directory as your license server's license file. For each software package that is licensed with a named-user license, the options file must list the login names of the users who are designated to use that package.

1. Use the license file to find the package designator. Here is a sample line from a license file:

```
INCREMENT NU_SE_GPP_VE_Cfg22 wrsd 3.4 18-jun-2009 4 55D698123CBA \
```

The package designator appears after the keyword **INCREMENT** or **PACKAGE**. In the example above, the package designator is **NU\_SE\_GPP\_VE\_Cfg22**.

The number of licensed seats appears after the datestamp. In the example above, there are four seats.

2. To add named users in the options file, open the **wrsd.opt** file and add a line with the following syntax:

```
INCLUDE packageDesignator USER userLoginName
```

You must add at least one name, and you may not list more names than the number of seats licensed.

For detailed information on configuring the options file to allocate licenses, see [11. Controlling Access to Products Using the Options File](#).

## Named Users Are Occupying Floating License Seats

### Problem

If your organization has both named-user licenses and floating licenses, users who are designated for named-user license seats may accidentally occupy floating license seats.

### Explanation

The license server grants access to products based on the contents of the options file. You can use the options file to exclude one or more users, or a group of users, from using a particular package.

### Solution

Edit the options file to exclude named users from floating-licensed software packages.

1. Use the license file to find the package designator. Here is a sample line from a license file:

```
INCREMENT NU_SE_GPP_VE_Cfg22 wrsd 3.4 18-jun-2009 4 55D698123CBA \
```

The package designator appears after the keyword **INCREMENT** or **PACKAGE**. In the example above, the package designator is **NU\_SE\_GPP\_VE\_Cfg22**.

2. Edit the options file (**wrsd.opt**) to add a line using the **EXCLUDE** keyword:

```
EXCLUDE packageDesignator USER userLoginName
```

For detailed information on configuring the options file to allocate licenses, see [11. Controlling Access to Products Using the Options File](#).

## Managing the Size of Log Files

### Problem

The debug log file and report log file increase in size.

### Explanation

Like any other logs on a server, the size of these log files must be controlled, or they can grow to be quite large.

**Solution**

You can back up the current log file by renaming it with a timestamp. When you do this, the server starts a new log file.

**Borrowing not Working as Expected**

**Problem**

You have configured both your license server and a workstation for borrowing, but cannot successfully borrow a product license.

**Explanation**

Most Wind River products are made up of several licensed features. Borrowing is done at the *feature level*. Therefore, the borrow attempt may have failed because not all licensed features in the product have been checked out.

**Solution**

Ensure that all features in the package (product) have been checked out before initiating borrowing.

For more information on borrowing a product license, see [10. Configuring Borrowing of Wind River Product Licenses](#).

# A

## Command-Line Installation

In addition to the installer's GUI, you can also install products in non-GUI mode. To do so, run the version of the **setup** program appropriate to your host, with the **-silent** option.<sup>1</sup>

This appendix lists the options for the **setup** command.

Table A-1 Options for the **setup** Command

Option	Description
<b>-add</b>	Install all products that your license entitles you to.
<b>-applyUpdates</b>	Update your installation to the latest available version permitted by the terms of your license.
<b>-archs</b> <i>archsToInstall</i>	<p>The computer architectures for which to install. The allowed values for <i>archsToInstall</i> are</p> <ul style="list-style-type: none"><li>▪ <b>all</b></li><li>▪ <b>68K</b></li><li>▪ <b>ARM</b></li><li>▪ <b>ColdFire</b></li><li>▪ <b>Intel</b></li><li>▪ <b>M32R</b></li><li>▪ <b>M-CORE</b></li><li>▪ <b>MIPS</b></li><li>▪ <b>PowerPC</b></li><li>▪ <b>SPARC</b></li><li>▪ <b>SuperH</b></li><li>▪ <b>TriCore</b></li><li>▪ <b>XScale</b></li></ul> <p>If you do not specify an architecture or architectures with the <b>-archs</b> option, your installation will include everything that the installation key enables, including all BSPs present on the product media.</p> <p>To specify multiple architectures, separate the values by a comma.</p>

1. On Windows, Wind River recommends you use **cmd.exe**. On Linux and Solaris, you can use any shell variant.

Table A-1 Options for the setup Command (cont'd)

Option	Description
<b>-download</b> <i>[path]</i>	<p>Download the products you are entitled to, for later installation.</p> <p>If <i>path</i> is not specified, the products are downloaded into your existing installation directory.</p> <p>The download operation creates a new directory named <b>WindRiver</b>. To install the products after downloading them, run <b>setup</b> in the new <b>WindRiver</b> directory.</p>
<b>-extract</b> <i>dir</i>	<p>Extract into the specified directory the contents of all patches located in <i>installDir/updates</i>.</p> <p>This is useful when you want to examine the contents of a patch before applying it.</p>
<b>-help</b>	Print the command-line help.
<b>-hosts</b> <i>hostType</i>	<p>The host type or types you are installing for. The allowed values for <i>hostType</i> are</p> <ul style="list-style-type: none"><li>▪ <b>all</b></li><li>▪ <b>solaris</b></li><li>▪ <b>x86-linux2</b></li><li>▪ <b>x86-win32</b></li></ul> <p>To specify multiple host OSes, separate the values by a comma.</p>
<b>-installerUpdateURLS</b> <i>url</i>	<p>A comma-separated list of URLs pointing to the installer update server (the server that provides updates of the installer program).</p> <p>If you explicitly do <i>not</i> want to retrieve updates to the installer, specify <b>none</b> for the <i>url</i> parameter.</p>
<b>-installKeys</b> <i>path</i>	The full path to the installation keys file.
<b>-installPath</b> <i>path</i>	The full path to the target installation directory. <sup>a</sup>
<b>-nosplash</b>	Do not show the splash screen.
<b>-patch</b>	Install all patches found in the <i>installDir/updates</i> directory.
<b>-print_toc</b> [ <i>dirPath/filename</i> ]	<p>Print the file list of a patch to the console, or save it to a file if a filename is specified. Applies to all patches found in the <i>installDir/updates</i> directory.</p> <p>This is useful when you want to see which files a patch will alter before applying it.</p>
<b>-productUpdateURLS</b> <i>url</i>	<p>A comma-separated list of URLs pointing to the product update server (the server that provides updates of installed products).</p> <p>If you explicitly do <i>not</i> want to retrieve product updates, specify <b>none</b> for the <i>url</i> parameter.</p>

Table A-1 Options for the setup Command (cont'd)

Option	Description
<b>-proxy</b> <i>serverIpAddress:portNumber:proxyType</i> <i>username:password</i>	Use a proxy server to connect to the Internet. The allowed values for <i>proxyType</i> are <b>web</b> and <b>SOCKS</b> . For example: <b>-proxy 127.0.0.1:8080:http</b> <b>-proxy 127.0.0.1:8081:socks</b>
<b>-remove</b>	Remove all Wind River products.
<b>-silent</b>	Do a full installation without the installer GUI.
<b>-skipQuota</b>	Skip the disk space quota check.
<b>-validate</b> [ <i>validationLevel</i> ]	Validate the product media and report potential problems. The allowed values for <i>validationLevel</i> are as follows: <ul style="list-style-type: none"> <li>▪ 5 (Validates suite definition files [SDFs].)</li> <li>▪ 10 (Validates SDFs and file repositories.)</li> <li>▪ 15 (validates SDFs, file repositories, and online content. Requires an Internet connection.)</li> </ul> If no validation level is specified, by default the option uses level 5 (SDF validation).

a. Ensure that the installation path does not include any of the following characters:

[space character] ! # % < > ?

Note in particular that space characters (such as in the directory name **Documents and Settings**) are not permitted. If there is a space character anywhere in the absolute path, some elements of the installed products will not be available.



**NOTE:** If you are installing architecture- or host-specific media, the installer may not accept all of the values listed in [Table A-1](#) for the **-archs** and **-hosts** options.

For example, if your Wind River product is PowerPC-specific, entering **-archs MIPS** produces an error. The error message then lists the values allowed for that DVD.

#### Example A-1 Sample Command-Line Sequence: Windows Host

In this example for a Windows host, the installer is run without displaying the GUI or the splash screen, and the path to the installation keys is specified.

```
setup.exe -silent -nosplash -installPath C:\WindRiver\install -installKeys
C:\WindRiver\install.txt
```

#### Example A-2 Sample Command-Line Sequence: UNIX Host

In this example for a Linux or Solaris host, the paths to the target installation directory and to the installation keys are specified. The product is installed for all hosts and for the PowerPC target architecture.

```
setup -silent -nosplash -installPath /wind/river/workbench -installKeys
/tmp/install.txt -hosts all -archs PowerPC
```



# B

## *FLEXlm Options File Reference*

[B.1 What Does This Reference Cover? 103](#)

[B.2 Options File Syntax 104](#)

[B.3 Action Keywords 107](#)

### B.1 What Does This Reference Cover?

The information in this FLEXlm options file reference is limited to a discussion of those keywords and commands that are immediately applicable to the license management instructions provided by Wind River. This section also includes an overview of the options file syntax.



**NOTE:** Information in this section is based on the reference information provided in the *FLEXlm End User's Guide* from Macrovision/ Acresso. The information is provided in this guide for your convenience. Always consult the latest version of the *FLEXlm End User's Guide* for complete and current information.

[Table B-1](#) briefly describes the action keywords available for use in configuring your Wind River license manager.

Table B-1 **Action Keywords**

<b>Keyword</b>	<b>Description</b>
<b>BORROW_LOWWATER</b>	Set the number of <b>BORROW</b> licenses that cannot be borrowed.
<b>DEBUGLOG</b>	Write debug log information for a specified vendor daemon to a specified file. In the case of Wind River products, the daemon is <b>wrsd</b> .
<b>EXCLUDE</b>	Deny a user access to a feature.
<b>EXCLUDE_BORROW</b>	Deny a user the ability to borrow a <b>BORROW</b> license.
<b>EXCLUDEALL</b>	Deny a user access to all features served by <b>wrsd</b> .

Table B-1 **Action Keywords** (cont'd)

<b>Keyword</b>	<b>Description</b>
<b>GROUP</b>	Define a group of users for use with any options.
<b>HOST_GROUP</b>	Define a group of hosts for use with any options.
<b>INCLUDE</b>	Allow a user access to a feature.
<b>INCLUDE_BORROW</b>	Allow a user to borrow a <b>BORROW</b> license.
<b>INCLUDEALL</b>	Allow a user access to all features served by <b>wrsd</b> .
<b>MAX</b>	Limits a user or group to a maximum number of licenses for a specified feature.
<b>MAX_BORROW_HOURS</b>	Changes the maximum borrowing period for a specified feature from the value specified in the license file.
<b>NOLOG</b>	Turn off logging of certain items in the debug log file.
<b>RESERVE</b>	Reserve a license for a particular user.

These options are discussed further in [B.3 Action Keywords](#), p.107. A complete reference of options file actions can be found in the *FLEXlm End User's Guide*.

## B.2 Options File Syntax

The basic syntax of the options file is as follows:

```
action.feature[:keyword=value] type user
```

For example:

```
INCLUDE NU_WORKBENCH_SUBSCRIPTION_cfg1 USER johnf
```

or

```
# Exclude these New York City developers.  
EXCLUDE WR_SYSTEM_VIEWER:SIGN=141556876DE GROUP USER_NYC
```

Each line of the file controls one option.

### B.2.1 Comments

Include comments in your options file by starting each comment line with a pound sign (#). Everything in an options file is case-sensitive. Be sure that usernames and feature names, for example, are entered correctly.

## B.2.2 Feature Specification

The feature name can be modified with an optional keyword-value pair to fully qualify it. This notation is used for distinguishing a particular group of licenses when there are multiple **FEATURE** or **INCREMENT** lines for a single feature. The following syntax is used:

*licenseServerComputer feature: keyword=value*

For example:

WR\_WORKBENCH:VERSION=2.0

or:

WR\_DEBUGGER:SIGN=15308987AC

The keywords in [Table B-2](#) are a subset of those available for FLEXlm. They are used as feature name modifiers to denote a specific group of licenses:

Table B-2 **Feature Name Modifiers**

<b>Keyword</b>	<b>Definition</b>
<b>EXPDATE=</b>	The expiration date of your license agreement.
<b>HOSTID=</b>	The unique host ID of your license server.
<b>KEY=</b>	The old-style checksum embedded in your <b>FEATURE</b> or <b>INCREMENT</b> line.
<b>SIGN=</b>	The new-style checksum embedded in your <b>FEATURE</b> or <b>INCREMENT</b> line.
<b>VENDOR_STRING=</b>	The value of the vendor (Wind River) string in your <b>FEATURE</b> or <b>INCREMENT</b> line, if configured.
<b>VERSION=</b>	The version number of your feature.

If you specify an action in an options file using a package name in place of a feature name, for example, **NU\_WORKBENCH\_SUBSCRIPTION\_cfg1** instead of **WR\_WORKBENCH**, the action is applied to all package components.

## B.2.3 Type Specification

The following action keywords restrict who can use licenses or where licenses can be used:

- **EXCLUDE**
- **EXCLUDEALL**
- **INCLUDE**
- **INCLUDEALL**

These actions specify the restriction based on the following type arguments:

### **USER**

The username of the user executing the licensed application.

### **HOST**

The system host name or IP address where the application is executing. The IP address can contain wildcards.

#### DISPLAY

The display where the application is shown.

For Linux and Solaris, **DISPLAY** is `/dev/ttyxx` (which is always `/dev/tty` when an application is run in the background) or the X-display name.

For Windows, **DISPLAY** is the system name or, in the case of a terminal server environment, the terminal server client name.

#### INTERNET

The IP address of the host where the application is executing. The IP address can contain wildcards.

#### PROJECT

The name of a project for which restricted user access is desired.

For Windows (without a terminal server), the **HOST** and **DISPLAY** names are both set to the Windows system name. For licenses that allow checkouts from a terminal server (**TS\_OK** keyword in the **FEATURE** line), the **USER**, **HOST**, and **DISPLAY** names can be different from one another.

The types listed above take a single value. For example:

```
EXCLUDE NU_WORKBENCH_SUBSCRIPTION_cfg1 USER joew
```

You can specify multiple values, such as a group of users or hosts, if you define them as a single value first using the action keywords **GROUP** and **HOST\_GROUP**. For example, use **GROUP** to identify a group of project developers:

```
GROUP Dvdplayer joe barbara susan  
EXCLUDE NU_WORKBENCH_SUBSCRIPTION_cfg1 GROUP Dvdplayer
```

### B.2.4 Order of Precedence in the Options File

The **INCLUDE** and **EXCLUDE** options follow rules of precedence. Rules of precedence take effect when **INCLUDE** and **EXCLUDE** statements are combined in the same options file and both are exercising control over access to the same features. The following define the precedence when both types of statements appear together:

#### EXCLUDE

Everyone not on the list is allowed to use the feature.

#### INCLUDE

Only those users on the list are allowed to use the feature. All others are excluded.

If neither list exists, everyone is allowed to use the feature.

The **EXCLUDE** list is checked before the **INCLUDE** list; someone who is on both lists is not allowed to use the feature.

Once you create an **INCLUDE** or **EXCLUDE** list, everyone else is implicitly outside the group. This feature allows the license administrator to control licenses without having to explicitly list each user permitted or denied access. In other words, there are two approaches:

- Give most users access, and list only the exceptions.
- Severely limit access, and list only users having access privileges.

## B.3 Action Keywords

This section explains the action keywords used for Wind River license management. Each entry includes a definition of the keyword, an example of syntax, and explanations of associated arguments. For a complete reference of options file actions, see the *FLEXlm End User's Guide*.

### BORROW\_LOWWATER

Set the number of **BORROW** licenses that cannot be borrowed. (For more information on license borrowing, see [10. Configuring Borrowing of Wind River Product Licenses](#).) This action uses the following syntax:

```
BORROW_LOWWATER feature:keyword=value n
```

*feature*

Name of the feature being affected.

*keyword=value* (optional)

Feature name modifier to denote a group of licenses. For details, see [B.2.2 Feature Specification](#), p. 105.

*n*

Number of licenses that cannot be borrowed using license borrowing.

For example, if the feature **NU\_WORKBENCH\_SUBSCRIPTION\_cfg1** has ten **BORROW** licenses (as configured on the **FEATURE** line of the license file), the following line restricts the number of licenses that can be borrowed to seven:

```
BORROW_LOWWATER NU_WORKBENCH_SUBSCRIPTION_cfg1 3
```

### DEBUGLOG

Specify a location for the debug log output from the vendor daemon associated with this options file. This action uses the following syntax:

```
DEBUGLOG +debugLogPath
```

Preceding *debugLogPath* with a + character appends logging entries. Otherwise, the file is overwritten each time the daemon is started.

Using **DEBUGLOG** affects output from only the vendor daemon associated with this options file. The debug log output of **lmgrd** and any other vendor daemons in the same license file is not captured in this file.

### EXCLUDE

Exclude a user or pre-defined group of users from the list of who is allowed to use the feature. This action uses the following syntax:

```
EXCLUDE feature:keyword=value type name|groupName
```

*feature*

Name of the feature being affected.

*keyword=value* (optional)

Feature name modifier to denote a group of licenses. For details, see [B.2.2 Feature Specification](#), p.105.

*type*

One of **USER**, **HOST**, **DISPLAY**, **INTERNET**, **PROJECT**, **GROUP**, or **HOST\_GROUP**. See [B.2.3 Type Specification](#), p.105.

*name*

Name of an item of type *type* for which to reserve licenses.

*groupName*

Name of the group to exclude.

For example, to exclude the user **hank** from the list of users able to use feature **NU\_WORKBENCH\_SUBSCRIPTION\_cfg1**, as follows:

```
EXCLUDE NU_WORKBENCH_SUBSCRIPTION_cfg1 USER hank
```



---

**NOTE:** EXCLUDE supersedes INCLUDE. Conflicts between the EXCLUDE list and the INCLUDE list are resolved by EXCLUDE taking precedence.

---

## EXCLUDE\_BORROW

Exclude a user or pre-defined group of users from the list of who is allowed to borrow licenses for a given **BORROW** feature. (For more information on license borrowing, see [10. Configuring Borrowing of Wind River Product Licenses](#).) This action uses the following syntax:

```
EXCLUDE_BORROW feature:keyword=value type name|groupName
```

*feature*

Name of the feature being affected.

*keyword=value* (optional)

Feature name modifier to denote a group of licenses. For details, see [B.2.2 Feature Specification](#), p.105.

*type*

One of **USER**, **HOST**, **DISPLAY**, **INTERNET**, **PROJECT**, **GROUP**, or **HOST\_GROUP**. See [B.2.3 Type Specification](#), p.105.

*name*

Name of an item of type *type* for which to reserve licenses.

*groupName*

Name of the group to exclude.

For example, to exclude the group **windr** from the list of groups able to borrow a license for the **BORROW** feature **NU\_WORKBENCH\_SUBSCRIPTION\_cfg1**, use the following line:

```
EXCLUDE_BORROW NU_WORKBENCH_SUBSCRIPTION_cfg1 GROUP windr
```



---

**NOTE:** EXCLUDE\_BORROW supersedes INCLUDE\_BORROW. Conflicts between the EXCLUDE\_BORROW list and the INCLUDE\_BORROW list are resolved by EXCLUDE\_BORROW taking precedence.

---

## EXCLUDEALL

Exclude a user or pre-defined group of users from the list of who is allowed to use all features served by this vendor daemon. This action uses the following syntax:

```
EXCLUDEALL type name|groupName
```

*type*

One of **USER**, **HOST**, **DISPLAY**, **INTERNET**, **PROJECT**, **GROUP**, or **HOST\_GROUP**. See [B.2.3 Type Specification](#), p.105.

*name*

Name of an item of type *type* for which to reserve licenses.

*groupName*

Name of the group to exclude.

For example, to exclude any user on the computer **jupiter** from using all features served by this daemon, add the following line to your options file:

```
EXCLUDEALL HOST jupiter
```

## GROUP

Define a group of users for use in the **INCLUDE**, **INCLUDEALL**, **EXCLUDE**, **EXCLUDEALL**, and **RESERVE** option lines. This action uses the following syntax:

```
GROUP groupName userList
```

*groupName*

Name of the group being defined.

*userList*

List of usernames in that group.

For example, to define a group called **Hackers** that consists of **bob**, **howard**, and **james**, use the following line:

```
GROUP Hackers bob howard james
```

If the number of members in a group exceeds the line length limit, use multiple **GROUP** lines for the same group name to add all of the specified users to the group.



---

**NOTE:** **USER\_GROUP** is an alias for **GROUP**.

---

## HOST\_GROUP

Define a group of hosts for use in the **INCLUDE**, **INCLUDEALL**, **EXCLUDE**, **EXCLUDEALL**, and **RESERVE** option lines. This action uses the following syntax:

```
HOST_GROUP groupName hostList
```

*groupName*

Name of the group being defined.

*hostList*

List of host names in that group.

For example, to define a host group called **Pacific** that consists of **tokyo**, **seattle**, and **auckland**, use the following line:

```
HOST_GROUP Pacific tokyo seattle auckland
```

An IP address can be used anywhere a host name can be used in an options file. If the number of members in a host group exceeds the line length limit, use multiple **HOST\_GROUP** lines to add all the specified hosts into the group.

## INCLUDE

Include a user or pre-defined group of users in the list of who is allowed to use licenses for this feature. Anyone not in an **INCLUDE** statement is not allowed to use that feature. This action uses the following syntax:

```
INCLUDE feature:keyword=value type name|groupName
```

*feature*

Name of the feature being affected.

*keyword=value* (optional)

Feature name modifier to denote a group of licenses. See [B.2.2 Feature Specification](#), p.105.

*type*

One of **USER**, **HOST**, **DISPLAY**, **INTERNET**, **PROJECT**, **GROUP**, or **HOST\_GROUP**. See [B.2.3 Type Specification](#), p.105.

*name*

Name of an item of type *type* for which to reserve licenses.

*groupName*

Name of the group to include.

For example, to include **bob** in the list of users able to use feature **NU\_WORKBENCH\_SUBSCRIPTION\_cfg1**, use the following line:

```
INCLUDE NU_WORKBENCH_SUBSCRIPTION_cfg1 USER bob
```

**INCLUDE** is required for user-based or host-based features. For named-user licensees, if you want to limit the number of users to the number of licensed seats, use an **INCLUDE** statement to define who has access.



---

**NOTE:** **EXCLUDE** supersedes **INCLUDE**. Conflicts between the **EXCLUDE** list and the **INCLUDE** list are resolved by the **EXCLUDE** taking precedence.

---

## INCLUDE\_BORROW

Include a user or pre-defined group of users in the list of who is allowed to borrow licenses for a given **BORROW** feature. (For more information on license borrowing, see [10. Configuring Borrowing of Wind River Product Licenses](#).) This action uses the following syntax:

```
INCLUDE feature:keyword=value type name|groupName
```

*feature*

Name of the feature being affected.

*keyword=value* (optional)

Feature name modifier to denote a group of licenses. See [B.2.2 Feature Specification](#), p.105.

*type*

One of **USER**, **HOST**, **DISPLAY**, **INTERNET**, **PROJECT**, **GROUP**, or **HOST\_GROUP**. See [B.2.3 Type Specification](#), p.105.

*name*

Name of an item of type *type* for which to reserve licenses.

*groupName*

Name of the group to include.

For example, to include **windr** in the list of groups able to borrow a license for the **BORROW** feature **NU\_WORKBENCH\_SUBSCRIPTION\_cfg1**, use the following line:

```
INCLUDE_BORROW NU_WORKBENCH_SUBSCRIPTION_cfg1 GROUP windr
```

**INCLUDE** is required for user-based or host-based features. For named-user licensees, if you want to limit the number of users to the number of licensed seats, use an **INCLUDE** statement to define who has access.



---

**NOTE:** **EXCLUDE\_BORROW** supersedes **INCLUDE\_BORROW**. Conflicts between the **EXCLUDE\_BORROW** list and the **INCLUDE\_BORROW** list are resolved by the **EXCLUDE\_BORROW** taking precedence.

---

## INCLUDEALL

Include a user or pre-defined group of users in the list of who is allowed to use all features served by this vendor daemon. Anyone not in an **INCLUDEALL** statement is not allowed to use these features. This action uses the following syntax:

```
INCLUDEALL type name|groupName
```

*type*

One of **USER**, **HOST**, **DISPLAY**, **INTERNET**, **PROJECT**, **GROUP**, or **HOST\_GROUP**. See [B.2.3 Type Specification](#), p.105.

*name*

Name of an item of type *type* for which to reserve licenses.

*groupName*

Name of the group to include.

For example, to allow **jane** to use all features served by this daemon, use the following line:

```
INCLUDEALL USER jane
```

## MAX

Specify a maximum number of licenses that a user or group of users may use. For the specified users, if more licenses are requested than the specified maximum for this feature, these requests will be denied. This action uses the following syntax:

```
MAX numberOfLicenses feature[:keyword=value] type {name | groupName}
```

*numberOfLicenses*

The maximum number of licenses to allow.

*feature*

The software feature that this limit applies to.

*keyword=value* (optional)

Feature name modifier to denote a group of licenses. For details, see [B.2.2 Feature Specification](#), p.105.

*type*

One of **USER**, **HOST**, **DISPLAY**, **INTERNET**, **PROJECT**, **GROUP**, or **HOST\_GROUP**. See [B.2.3 Type Specification](#), p.105.

*name*

Name of an item of type *type* for which to limit licenses.

*groupName*

Name of the group that this limit applies to.

For example, to limit the user **jan** to 5 licenses for feature **f1**, use the following line:

```
MAX 5 f1 USER jan
```

## MAX\_BORROW\_HOURS

Changes the maximum number of hours (as specified in the license file) a **BORROW** license feature can be borrowed for. (For more information on license borrowing, see [10. Configuring Borrowing of Wind River Product Licenses](#).) This action uses the following syntax:

```
MAX_BORROW_HOURS feature:keyword=value n
```

*feature*

Name of the feature being affected.

*keyword=value* (optional)

Feature name modifier to denote a group of licenses. See [B.2.2 Feature Specification](#), p.105.

*n*

Maximum number of hours in the new borrow period. This value must be less than the number specified in the license file. (If no value is specified in the license file for the feature, the default maximum is 168 hours.)

For example, to set a new maximum borrow period of 72 hours for the **BORROW** feature **NU\_WORKBENCH\_SUBSCRIPTION\_cfg1**, use the following line:

```
MAX_BORROW_HOURS NU_WORKBENCH_SUBSCRIPTION_cfg1 72
```



**NOTE:** If multiple **MAX\_BORROW\_HOURS** keywords are specified in the options file, only the last one is applied to the specified feature.

## NOLOG

Suppress logging the selected type of event in the debug log file. This action uses the following syntax:

```
NOLOG eventType
```

*eventType*

The type of event you wish to suppress logging of: IN, OUT, DENIED, or QUEUED.

For example, turn off the logging of checkins as follows:

```
NOLOG IN
```

Turn off the logging of checkouts and queued requests, as follows:

```
NOLOG DENIED  
NOLOG QUEUED
```

Note that two separate NOLOG lines are required.



---

**NOTE:** License administrators use this option to reduce the size of the debug log file. However, it can also reduce the usefulness of the debug log for debugging license server problems.

---

## RESERVE

Reserve a license for a specified user or group of users. This action uses the following syntax:

```
RESERVE numberOfLicenses feature[:keyword=value] type {name | groupName}
```

*numberOfLicenses*

The number of licenses to reserve for this user or group.

*feature*

The software feature that this reservation applies to.

*keyword=value* (optional)

Feature name modifier to denote a group of licenses. For details, see [B.2.2 Feature Specification](#), p.105.

*type*

One of USER, HOST, DISPLAY, INTERNET, PROJECT, GROUP, or HOST\_GROUP. See [B.2.3 Type Specification](#), p.105.

*name*

Name of an item of type *type* for which to reserve licenses.

*groupName*

Name of the group that this reservation applies to.

To reserve one license of feature **f1** for user **me1**, use the following line:

```
RESERVE 1 f1 USER me1
```

Users and groups cannot be named in the same RESERVE line; if you want to reserve a license for several users or groups, you must use a separate RESERVE line for each user or group.

Once you have reserved a license for a user, it cannot be used by others, even if the license is not in use. However, an idle reserved license is not logged as license usage.



# C

## *FLEXlm Command Reference*

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### **C.1 What Does This Reference Cover?**

The information in this FLEXlm reference is limited to a discussion of those commands that are immediately applicable to the license management instructions provided by Wind River. The following sections provide basic information for the commands required to set up Wind River license management.

A complete reference can be found in the *FLEXlm End User's Guide*.

### **C.2 License Manager Daemon Command-Line Syntax**

This section describes a subset of the command-line options available for the FLEXlm license manager daemon (**lmgrd**).

#### **C.2.1 lmgrd Command-Line Options**

The **lmgrd** command takes the following options:

**-c** *licenseFileList*

Use the specified license management file(s). *licenseFileList* can be one or more of the following options:

- the full path to a single license file
- a directory, where all files named \*.lic in that directory are used

**-l +debugLogPath**

Write debugging information to file *debugLogPath*. This option uses the letter "l," not the numeral "1." Prepending *debugLogPath* with the + character appends logging entries. In the above example, -l directs output to a log file, **lmgrd.log**.

**-2 -p**

Restrict use of **lmdown**, **lmreread**, and **lmremove** to a system administrator who, by default, is **root**. If there is a Linux or UNIX group called **lmadmin**, use is restricted to members of that group only. If **root** is not a member of this group, then it has no permission to use **lmdown**, **lmreread**, and **lmremove**. If **-2 -p** is used when starting **lmgrd**, Windows users cannot shut down the license server using **lmdown**.

**-local**

Restrict the **lmdown** command to be run only from the same computer where **lmgrd** is running.

**-x lmdown**

Disable the **lmdown** command so that no user can run it.

If **lmdown** is disabled, stop the **lmgrd** and vendor daemon processes on Linux and Solaris using **kill pid** and on Windows through the Windows Task Manager or Windows service. On Linux and Solaris, do not use the **-9** argument with the **kill** command; it does not terminate the vendor daemons.

**-x lmremove**

Disable the **lmremove** command so that no user can run it.

**-z**

Run **lmgrd** in the foreground. The default behavior is to run **lmgrd** in the background. If **-l debugLogPath** is present, no windows are used. However, if no **-l** argument is specified, separate windows are used for **lmgrd** and each vendor daemon.

**-v**

Display the **lmgrd** version number and copyright.

**-help**

Display usage information.

## C.3 License Administration Tools

FLEXlm provides a number of utilities that are used to manage your license server. All of the utilities described in this section are launched using the executable, **lmutil**. For example, the command **lmutil lmdown** is used to launch the **lmdown** utility.

This section describes a subset of the utilities available for FLEXlm license administration. For additional information, see the *FLEXlm End User's Guide* available from Macrovision Corporation.

## Imutil Universal Command-Line Options

The following universal command-line options are available for use with most **Imutil** utilities:

- c** *licenseFilePath*  
Specifies the path to the license file.
- help**  
Display usage information, and exit.
- v**  
Display the **Imgrd** version number and copyright.
- verbose**  
Provide long descriptions for all errors.

## Imborrow

The **Imborrow** utility supports license borrowing on the server. It must be executed on the server where licenses are borrowed. The **Imborrow** utility can be used to:

- initiate borrowing (by setting the borrow period)
- clear the borrow period
- determine the borrow status
- return a borrowed license before the end of the borrowing period

For more information on borrowing, see [10. Configuring Borrowing of Wind River Product Licenses](#).

### Initiating Borrowing

When used to initiate borrowing, **Imborrow** has the following usage:

```
Imborrow vendor endDate time
```

Where:

*vendor*

The vendor daemon name that serves the licenses (or specify **all**, which indicates all vendor daemons on the license server).

*endDate*

Specifies the date the license is to be returned in *dd-mmm-yyyy* format.

*time* (optional)

Specifies the time in 24-hour format (*hh:mm*). If *time* is unspecified, the checkout persists until the end of the given end date.

### Clearing a Borrowed License

When used to clear a borrowed license setting, **lmborrow** has the following usage:

```
lmborrow -clear
```

Where:

#### **-clear**

Clear the LM\_BORROW environment variable setting in the registry or \$HOME/.flexlmborrow.



---

**NOTE:** Clearing LM\_BORROW does *not* change the status for already-borrowed licenses.

---

### Determining a Borrowed License Status

When used to determine the status of a borrowed license, **lmborrow** has the following usage:

```
lmborrow -status
```

Where:

#### **-status**

Display information about borrowed features.



---

**NOTE:** The borrowing workstation does not need to be connected to the network in order to determine the borrow status.

---

### Returning a Borrowed License

When used to return a borrowed license, **lmborrow** has the following usage:

```
lmborrow -return -c licenseFileList -d display feature
```

Where:

#### **-return**

Return a borrowed license.

#### **-c licenseFileList**

Use the specified license file or files. Depending on your license server configuration, you may need to specify the license file in order to return a license before the borrow end date.

#### **-d display**

Specify the display from which the borrow was initiated. This option is required if your current display is different from the one that was used to initiate the borrow. On Windows, this is the system name or the terminal server client name. On Linux and UNIX systems, it is **/dev/ttyxx** or the X-display name.

#### *feature*

The name of the borrowed feature that will be returned.



---

**NOTE:** You can use **lmborrow -status** to get a list of the borrowed feature names.

---

## lmdown

The **lmdown** utility is used to gracefully shut down a selected license server (includes **lmgrd** and the selected vendor daemons). **lmdown** has the following usage:

```
lmdown -c licenseFileList -vendor vendorDaemon -q -all -force
```

Where:

**-c** *licenseFileList*

Use the specified license management file(s). Always use **-c** with **lmdown**.

**-vendor** *vendorDaemon* (optional)

Shut down only the specified vendor daemon. This option allows **lmgrd** to continue running.

**-q** (optional)

Do not prompt or print a header. Otherwise, **lmdown** asks “Are you sure? [y/n].”

**-all** (optional)

Automatically shut down all servers when multiple servers are used. The **-all** option implies **-q**.

**-force** (optional)

If licenses are borrowed, run **lmdown** only from the system where the license server is running.

## lmnewlog

The **lmnewlog** utility moves existing report log information to a new file and starts a new report log with the existing filename. **lmnewlog** has the following usage:

```
lmnewlog -c licenseFileList feature renamedReportLog
```

or:

```
lmnewlog -c license_file_list vendor renamedReportLog
```

Where:

**-c** *licenseFileList* (optional)

Use the specified license file or files.

*feature*

Any feature in the license file.

*vendor*

Vendor daemon specified in the license file.

*renamedReportLog*

Path for the renamed report log. (That is, the path to which the existing log file should be moved.)

## Imremove

The **Imremove** utility releases a hung license to the license pool. **Imremove** has the following usage:

```
Imremove -c licenseFileList feature user userHost display
```

or:

```
Imremove -c licenseFileList -h feature serverHost port handle
```

Where:

**-c** *licenseFileList* (optional)

Use the specified license file or files.

*feature*

Name of the feature that is checked out by the user.

**-h**

Specifies that the license to be removed be identified using the server host, port, and handle instead of the user, user host, and display name.

*user*

Name of the user whose license will be removed (as reported by **Imstat -a**).

*userHost*

Name of the host that the selected user is logged into (as reported by **Imstat -a**).

*display*

Name of the display where the selected user is working (as reported by **Imstat -a**).

*serverHost*

Name of the host system on which the license server is running.

*port*

TCP/IP port number on which the license server is running (as reported by **Imstat -a**).

*handle*

License handle (as reported by **Imstat -a**).

## Imreread

The **Imreread** utility forces the license daemon to reread the license file. **Imreread** usage is as follows:

```
Imreread -c licenseFileList -vendor vendor -all
```

Where:

**-c** *licenseFileList* (optional)

Use the specified license file or files.

**-vendor** *vendor* (optional)

Specifies that only the named vendor daemon (*vendor*) rereads the license file. **Imgrd** starts the specified vendor daemon if necessary.

**-all** (optional)

If more than one license manager daemon is specified, it instructs all daemons to reread the license file.



**NOTE:** If you specify the **-c** option, the license file specified is reread by the **lmreread** utility, not by the license manager daemon (**lmgrd**) itself. **lmgrd** rereads the original license file.

## lmstat

The **lmstat** utility displays the status of the license server. **lmstat** usage is as follows:

```
lmstat -a -c licenseFileList -f feature -i feature -s server -S vendor -t timeoutValue
```

Where:

- a**  
Displays all available information.
- c licenseFileList**  
Use the specified license file or files.
- f feature**  
Display information for users of the specified feature (*feature*). If *feature* is not specified, display information for all available features.
- i feature**  
Display information from the **FEATURE/INCREMENT** line of the license file for the specified feature (*feature*). If *feature* is not specified, display information for all features.
- s server**  
Display status of all license files listed in **\$VENDOR\_LICENSE\_FILE** or **\$LM\_LICENSE\_FILE** on the server (*server*). If *server* is not specified, display information for all servers.
- S vendor**  
List all users of the features for the specified vendor (*vendor*).
- t timeoutValue**  
Set the connection timeout to the value *timeoutValue*. This value limits the amount of time **lmstat** spends trying to connect to a server.

## lmswitchr

The **lmswitchr** utility switches the existing report log to a new filename. **lmswitchr** usage is as follows:

```
lmswitchr -c licenseFileList feature newReportLog
```

or:

```
lmswitchr -c licenseFileList vendor newReportLog
```

Where:

- c licenseFileList**  
Use the specified license file or files.
- feature*  
Any feature in the license file.

*vendor*

Vendor daemon specified in the license file.

*newReportLog*

Path to the new report log file.

If report logging is not already enabled for the vendor daemon, the **lmswitchr** utility directs the daemon to start writing report log output to the a new file (*newReportLog*). If report logging *is* enabled for the vendor daemon, the utility directs the daemon to close its current report log file and start writing the new report log output to *newReportLog*.

# D

## Glossary

### customer license number

A four- to six-digit number assigned to a Wind River customer. Also called *customer license, license number, or customer ID*.

You can find your customer license number in any of the following ways:

- It is printed on your *License Administrator Essentials* or *Developer Essentials* sheet.
- If you have an existing Wind River Workbench installation of version 3.3 or higher, you can find your customer license number by launching Workbench and selecting **Help > About Wind River Workbench**.
- It is recorded (as *customer ID*) in the file *installDir/setup.log*. The **setup.log** file is created when you install Wind River products.

### enterprise licensing model (ELM)

A subscription approach to Wind River Platform products and supported architectures. The right to use the product expires after the contract end date, and must be renewed.

### entitlement

See [installation key](#), p.123.

### floating license (FL)

A license type that allows you to share a pool of license seats among users. Any user can take a license, up to the number of seats purchased. When all license seats are in use, no other developers can use that product until someone else finishes.

With the floating license type, you must set up a license server, and the development workstations must be connected to it over the network. You do not have to report license usage to Wind River.

### install.txt

See [product activation file](#), p.127.

### installation key

An encrypted code that controls which software components can be installed. For Wind River products, the installation key is embedded in the **install.txt** file.

To find your installation keys, look in your **install.txt** file for lines beginning with *CDR-*. To learn what software pieces are installable from that CDR, go to the **images/CDR-\*** directory of your installation DVD (or other installation media). Once there, open the **mediaID** file and find a description of the software component.

Installation keys can also be referred to as *entitlement*.

## LAC

See [license authorization code \(LAC\)](#), p.124.

## license administrator token (LAT)

A string of numerals and characters that you use on Wind River's [licensing portal](#) to perform license-management tasks such as permanent product activation and rehosting.

The LAT is printed on your *License Administrator Essentials* sheet, included in your Wind River product shipment.

## license authorization code (LAC)

A code for the temporary licensing of the products you have purchased. The installer program uses the LAC to request an **install.txt** file over the Internet. With this **install.txt** file, you can install Wind River products and perform a [temporary activation](#) of them.

The LAC is typically found in one of the following ways:

- If you have ordered and received your product on physical media, your LAC is listed on the *License Administrator Essentials* or *Developer Essentials* sheet included with your shipment.
- If you have downloaded an evaluation version, the LAC is e-mailed to you.
- If you are installing from an evaluation CD or DVD, the LAC is printed on the disk sleeve or was e-mailed to you.

It is an alphanumeric, case-sensitive string of the format **XXXXX-XXXX-XXXX**. The first segment of the string also corresponds to the [customer license number](#).

## license file

A text file that lists how many seats of each product can be used simultaneously. The license file is specific to a license server computer or a node-locked host and contains a list of licensed features. For license server computers, the license file also contains information on license server nodes and vendor daemons.

The license file is located in the *installDir/license* directory.

## license number

See [customer license number](#), p.123.

## license seat

A token that the license server issues to allow a user to run a software package. License seats are the unit by which software is sold and counted.

Also called *seat*.

**licensed feature**

Controls run-time access to the software. Licensed features are defined in the *license file*, and can be identified by the lines in that file beginning with **FEATURE**, **INCREMENT**, or **PACKAGE**. Software packages are made up of licensed features.

**licensing portal**

The Web site at <http://www.windriver.com/licensing/> where you obtain long-term *product activation files* for the products you have purchased. To get access to the portal, you need your *license administrator token (LAT)*.

In addition to obtaining product activation files, you can use the portal to perform other license-management tasks, such as rehosting.

Also called the *product activation portal* or *product activation site*.

**license server**

In hardware, a *license server* is a computer on which license server software processes run (see below).

In software, a *license server* is a set of utilities for serving floating and named-user licenses. The license server consists of two processes: a FLEXlm-based license manager daemon (*lmgrd*) and one or more vendor-specific daemons (including *wrsd*). The license server runs on a computer that is accessible to development workstations over a network, and it grants users permission to run specific Wind River products.

This granting of permission is based on the contents of the server's *license file* and *options file* (if one is present).

**license usage reporting**

See *wrReportGen*, p. 127.

**lmgrd**

The FLEXlm license manager daemon that routes requests to use a license-enabled application from the development workstation to the correct vendor daemon running on the same license server.

**maintenance contract**

The terms and conditions under which Wind River provides software support and maintenance to customers who pay an annual support fee. You must have a valid maintenance contract in order to install software maintenance products, such as patches and service packs.

**named-user license (NU)**

A license type in which the license is assigned to a specific user. The license administrator controls license access by configuring an *options file*.

With named-user licenses, you must set up a license server, and the development workstations must be connected to it over the network. You must report named-user license usage to Wind River on a quarterly basis. For more information, see [9. License Usage Reporting](#)

### node-locked license (NL)

A license type in which the software products are used on a single development workstation. The products are not shared over the network, but they can be used by anyone with physical access to the workstation. The products can function when the workstation is disconnected from the network.

With the node-locked license type, you do not have to report license usage to Wind River.

### OEM licenses

See [perpetual licenses](#), p.126.

### options file

A plain-text file that allows you to manage how your Wind River software licenses are used—which products, where, when, and by whom.

The options file is specific to a given *vendor daemon*. As the Wind River vendor daemon is **wrsd**, the options file for the management of Wind River software licenses is called **wrsd.opt**.

The options file is located on your license server, in the same directory as your license file.

For detailed information on creating and using an options file, see [11. Controlling Access to Products Using the Options File](#).

### PAF

See [product activation file](#), p.127.

### patch

A set of files that Wind River provides to fix a specific problem. Applying a software patch typically adds or replaces a small number of files in your existing installation.

Take care in applying patches. Because patches are likely to overwrite files in your existing product installation, they are not separately removable, and because combinations of different patches and products are not necessarily verified together, applying patches can break your installation. Furthermore, consider that common patches are typically included in a forthcoming service pack—at which point, the combined pieces *have been* verified.

### permanent activation

A method of installation in which you obtain a [product activation file](#) from Wind River so that you can use the software products without any time limit other than those laid out in your license agreement.

For comparison, see also [temporary activation](#), p.127.

### perpetual licenses

Perpetual licenses, also known as *OEM licenses*, do not expire. The customer has the right to use the product for its lifetime, as long as the customer abides by the terms of the agreement.

**product activation file**

A plain-text file that lists the products and features your license entitles you to, along with installation keys. The product activation file (or PAF) is usually named **install.txt**.

A product activation file is required in order to permanently activate your products.

**report generator**

See *wrReportGen*, p. 127.

**rotation**

The act of switching the report log file by moving the existing report log information to a new file, then starting a new report log having the original report log filename.

**temporary activation**

A method of installation in which you use a temporary license so that you can work with the Wind River products right away.

With temporary activation, you can use the Wind River products for a limited time (usually 31 days). To continue using them beyond that period, you must eventually perform a *permanent activation*. The permanent activation allows you to use the same installation; you will not need to re-install your Wind River products.

**vendor daemon**

The license server process that dispenses licenses for the requested feature. The Wind River daemon is called *wrsd*.

**wrLog\_date.log**

A raw binary usage log that is the input to the license usage reporting tool *wrReportGen*.

**wrlog.opt**

A configuration file that contains settings for license usage logging.

**wrReportGen**

The license usage reporting tool that Wind River provides for customers who hold named-user licenses. With the named-user license type, you must report license usage to Wind River each quarter.

For details on reporting license usage, see *9. License Usage Reporting*.

**wrsd**

The Wind River vendor daemon. It tracks how many of the available seats of a particular product have been assigned, and to whom.

The vendor daemon reads the *license file* and the *options file*. Then, based on the rules in those files, it decides whether a user's request to use a licensed feature is valid.

The **wrsd** daemon runs alongside the license-management daemon **lmgrd** on the license server.

**wrsd.opt**

See *options file*, p. 126.

**WRSLicense.lic**

A host's *license file* for the purchased contract period. You obtain this file from Wind River when you perform *permanent activation*.

This file is located in the *installDir/license* directory.

See also *product activation file*, p. 127.