
Supported Platforms

Checkit is currently available on the following platforms:

- Sparc Solaris 2.4 and above
- SunOS 4.1.x
- Linux 2.x
- SGI Irix 6.2

The following platforms will be added in a future product release:

- HP-UX 9.x and above
- IBM AIX 4.2
- PC NT4.0 and above
- PC Windows 95

Obtaining the Software

The following sections describe how to retrieve Checkit using one of the following methods:

- Netscape or Explorer Web browsers
- FTP
- UNIX floppy diskette
- Windows NT/95 floppy diskette

Using Netscape or Explorer Web Browsers

1. Go to the following URL:

```
ftp://ftp.interhdl.com/pub/
```

2. Depending on the platform you are using, download one of the following files:

```
checkit-version_number-solaris.tar.gz  
checkit-version_number-sun.tar.gz  
checkit-version_number-linux.tar.gz
```

where *version_number* is the Checkit release version number. For example, the first release of Checkit is version 1.1.

3. Follow the Web browser's instructions to save the file to your local disk.

Using FTP

1. Go to the directory on your local system where you want to download the software.
2. Log in to interHDL's ftp site:

```
% ftp ftp.interhdl.com
```

If this login procedure does not succeed, you may not have the most current application-level firewall. In this case, log in to your local ftp server (**ftp ftp**) using **anonymous@ftp.interhdl.com** as the user name and your e-mail address as the password. If you are still experiencing problems, contact your system administrator.

3. At the user name prompt, type the following:

```
Name (ftp.interhdl.com): anonymous
```

4. At the password prompt, type the following:

```
Password: your_email_address
```

5. Change the remote working directory to interHDL's public directory:

```
ftp> cd pub
```

6. Switch to binary transfer mode:

```
ftp> bin
```

7. Disable “yes/no” confirmation requests from mget:

```
ftp> prompt
```

8. Display the list of files:

```
ftp> dir
```

9. Get *Checkit* for the desired platform (sun, solaris, or linux):

```
ftp> mget checkit*platform*
```

10. Exit ftp:

```
ftp> quit
```

Using a UNIX Floppy Diskette

To obtain a floppy diskette for the UNIX platform, please contact your sales representative.

To extract the release file from a diskette, perform the following steps:

1. Go to the directory where you want to install the software.
2. Read the software from the floppy diskette:

```
% tar xvf floppy_device_such_as_/dev/fd0
```

If there is more than one diskette, files are extracted as `disk1.enc`, `disk2.enc`, and so on.

3. Concatenate all files as shown in the following example, and uudecode the resulting file:

```
% cat disk1.enc disk2.enc > checkit.enc
% uudecode checkit.enc
```

4. Delete the `.enc` files, which are no longer needed.

```
> rm *.enc
```

Using a Windows NT/95 Floppy Diskette

To obtain a floppy diskette for Windows NT, contact your sales representative.

To extract the release file from a Windows NT/95 diskette, perform the following steps:

1. Create a directory on the hard disk.

```
> mkdir C:\desired_directory
```

2. Copy the software, which is a zip file, from the diskette to the directory:

```
> copy A:*. * C:\desired_directory
```

Installing the Software

The following sections describe how to install *Checkit* on the following systems from the file you obtained in the previous section:

- UNIX
- Windows NT/95

Installing *Checkit* on UNIX Systems

1. Uncompress the compressed tar file that you obtained from the ftp site or from the floppy diskette.

If the compressed file has an extension of `.gz`, then uncompress the file using the following command:

```
% gunzip checkit.tar.gz
```

If the compressed file has an extension of `.Z`, then uncompress the file using the following command:

```
% uncompress checkit.tar.Z
```

2. Extract the *Checkit* files from the tar file.

4. As an option, set the environment variable **INTERHDL_ELMHOST** in the `.cshrc` or `.tschrc` files to speed the checkout of licenses. If **INTERHDL_ELMHOST** is not set, Checkit locates the license server by broadcasting on the local subnetwork. However, this can slow down the time to acquire a license each time Checkit runs.

```
setenv INTERHDL_ELMHOST @license_server_hostname  
  
or (for a redundant server installation)  
  
setenv INTERHDL_ELMHOST hostname1:hostname2:hostname3
```



Note: **INTERHDL_ELMHOST** must be set if the license server is located on a different subnetwork from the machine running **checkit**.

Alternatively, you can execute a wrapper script that sets the **INTERHDL_ELMHOST** environment variable before indirectly executing the Checkit command.

```
#!/bin/sh  
INTERHDL_ELMHOST = @localhost; export  
INTERHDL_ELMHOST  
exec checkit_directory/checkit $*
```

Installing Checkit on Windows NT/95 Systems

1. Unzip the **Checkitversion_number-nt95.zip** file. If you are using the freeware command-line version of **unzip**, you would type:

```
> unzip checkitversion_numbernt95.zip
```

Alternatively, you can use a Windows-based unzip utility such as the WinZip shareware package.

- ✓ **Note:** Be sure to use an unzip program that can properly handle file names longer than eight characters with a three-character extension. Some older DOS and Windows unzip utilities truncate long file names, causing name collisions. For example, `verilint_n` could be truncated to `verilint`, which could overwrite a `verilint` file already unzipped.
-

2. Add the *Checkit* directory to the search path in `C:\AUTOEXEC.BAT`, which is the operating system's start-up file:

```
SET PATH=%PATH%;C:\checkit_directory
```

- ✓ **Note:** Use a short path to the *checkit_directory*. Otherwise, you may get the system error message, "Too many parameters."
-

3. If you are using a UNIX-based license server (as opposed to a hardware license key), set the environment variable `INTERHDL_ELMHOST` in `C:\AUTOEXEC.BAT` to speed the checkout of licenses.

If this variable is not set, *Checkit* locates the license server by broadcasting on the local subnetwork. However, this can slow down the time to acquire a license each time *Checkit* runs.

```
setenv INTERHDL_ELMHOST @license_server_hostname  
  
or (for a redundant server installation)  
  
setenv INTERHDL_ELMHOST hostname1:hostname2:hostname3
```

- ✓ **Note:** `INTERHDL_ELMHOST` must be set if the license server is located on a different subnetwork from the machine running *checkit*.
-

License Management Software

In a network environment with UNIX file servers, *Checkit* uses the Elan license management software, which can serve both UNIX and Windows NT/95 machines. For stand-alone Windows NT/95 machines, *Checkit* supports a hardware license

key. The Elan license management software supports both a single-server and a redundant-server licensing scheme to issue licenses and report license usage. The license server support files reside in the `ilm` directory, which is a subdirectory of the `checkit_directory`.

The following list describes the files, programs, and scripts that reside in the license directory `checkit_directory/ilm`.

INSTALL

A file containing license and license manager installation instructions as well as license manager trouble-shooting tips and techniques.

ilmadmin

The license manager administration program, used by the license scripts described below. This program installs new licenses and reports the licenses already installed.

ilmd

The license manager daemon, also known as the license server. Most often, this license manager daemon is run as a background process and is invoked by a script at power-on time.

ilmrpt

Utility that reports current license usage and activity.

ilmusage

Utility that repetitively reports license usage and activity for the previous time interval (default interval of 10 seconds).

On-line Help Pages

`ilmadmin.1`, `ilmd.1`, `ilmrpt.1`, `ilmusage.1`, and `ilm_resource.5`

On-line help pages, also known as man pages, for the above commands.

`ilm_resource.5` lists the format of the optional resource file used by `ilmd`.

You can view the man pages on the screen using one of the following commands:

- `man`, if the files are moved to the `man1` subdirectory of the directory defined in the `MANPATH` environment variable
- `nroff`, for example:

```
nroff -man ilmadmin.1 | more
```

You can print the man pages using `troff`, for example:

```
troff -man -t ilmadmin.1 | lpr -t
```

get_server_code

A script that returns a server code for the machine on which it is executed. You must run this script on the machine that you designate as the license server machine. Email or FAX the server code to interHDL to request a license key.

```
test> get_server_code
interHDL License Manager - Copyright 1989-1996 Elan
  Computer Group, Inc.

Code for "test" is:  194/1234 5678 9012 3456 7
```

get_server_code3

A script similar to **get_server_code** but used for sites running three redundant license server machines. Instead of printing the server code for the machine on which you execute the script, it requires you to first enter the names of the designated license server machines. Email or FAX the three generated server codes to interHDL to request a redundant server license key.

```
test> get_server_code3
interHDL License Manager - Copyright 1989-1996 Elan
  Computer Group, Inc.

Enter the server host name #1: mercury
Enter the server host name #2: venus
Enter the server host name #3: earth
Code for "mercury" is:  194/1111 2222 3333 44
Code for "venus" is:   194/5555 6666 7777 88
Code for "earth" is:  194/9999 0000 1111 22
```

install_key

A script that installs the license key into the keys subdirectory.

show_licenses

A script that contacts the license server and shows the available licenses. The script locates the license server machine in the same manner as *Checkit* or other licensed applications, using the **INTERHDL_ELMHOST** environment variable, if it exists, or by broadcasting on the subnetwork. Refer to the discussion of setting **INTERHDL_ELMHOST** on UNIX or Windows platforms for the correct steps.

start_ilm

A script that starts the license server daemon **ilmd**, which manages the licenses. You can invoke the script directly from the command line (root permission is not required), or you can install the script such that your machine invokes it at boot time. Typically, you update one of the following files:

/etc/rc.local on SunOS systems

/etc/inittab on all other UNIX systems (including Solaris)

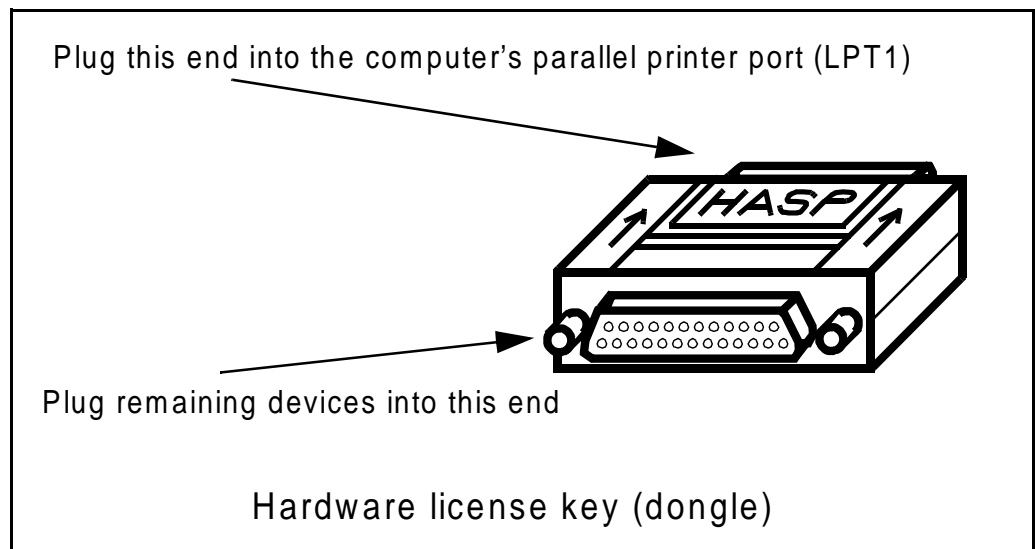
See step 6 of the “Installing the License Server on a Single UNIX Machine” section on page 2-13 for more information about running **start_ilm** automatically at boot time.

Installing Licenses for Windows NT/95

To license *Checkit* for a Windows NT/95 machine, you can either install a hardware license key (commonly known as a “dongle”) on the system, or you can start a license server on a UNIX machine from which you can check out Windows NT/95 licenses over the network. The following steps assume that you have already loaded the *Checkit* software onto your system.

Installing the Hardware License Key for Windows NT/95

A hardware license key, shown below, is a device that stores license information for running interHDL products on PC’s running Windows 95 or Windows NT. The hardware key has a 25-pin male and a 25-pin female connector and is designed to be plugged into the parallel printer port of the PC. The key can be identified by the logo “HASP” imprinted on the side of the key.



1. With the computer's power turned OFF, plug the male connector of the hardware key into the parallel printer port (LPT1).

Any devices that were previously plugged into the printer port can be plugged into the female connector of the hardware key.
2. Turn on the power to the computer.

The hardware key should not interfere with printer operation.
3. ***On Windows NT machines only:*** Log in as the "Administrator" user. As the administrator, run "**hinstall /i**" from a command prompt to install the device driver software.

Note: This step is *not* necessary to perform for Windows 95 systems.

4. Go to the directory where you installed the *Checkit* software:

```
> cd checkit_directory
```

5. Invoke the HaspView program to view the licenses on the HASP hardware key and to program the hardware key with new license information.

```
> haspview
```

The license information currently stored on the hardware key is shown. A single hardware key can store several permanent licenses for interHDL products as well as a license for a certain number of Demo (evaluation) executions. Haspview shows a numerical execution count for the Demo license.

Each time an interHDL program uses the hardware key to perform an evaluation execution, the execution count is reduced by one. When the count reaches zero, the Demo feature halts until a new execution count is loaded (see the following steps). The *Hardware Key ID* is also shown. This number is typically five digits long and is used only to visually identify the hardware key. It is **not** used to program the key for additional licenses (see step 6)

6. Obtain the current numeric *License Code* of the hardware key in order to add additional Demo executions or permanent licenses to a hardware key.

This *License Code* is approximately 20+ digits in length and is not the same as the *Hardware Key ID* shown in the main HaspView window.

To display the current interHDL hardware key numeric license code, select **Program** from the HaspView window. The HaspView window changes to show the current *License Code* as well as to provide a field in which to enter a new *License Key*.

7. E-mail the 20+digit numeric *License Code* to your interHDL sales representative. After proper authorization, InterHDL will e-mail to you a new 20+digit numeric *License Key*.



Note: You may continue to use the hardware key while you are waiting to receive a new license key. You can exit HaspView at this point by clicking **OK** twice in succession.

8. Assuming you are still in the HaspView Program window, type the new 20+digit numeric *License Key* in the field below the current *License Code* field.
9. Click **OK** to program the hardware key.

The new license summary is shown. Visually verify that the hardware key is successfully updated.
10. Click **OK** to exit HaspView.
11. Verify that your environment is set up correctly by running a small example:

```
> checkit -lint example.v
```

Software-only License Servers on Windows NT/95

You cannot run a software-only license server on Windows NT/95. However, you can start a license server on a UNIX machine from which any Windows NT/95 system on the network can check out licenses.

Installing the License Server on a Single UNIX Machine

If you do not have license keys, please contact your interHDL sales representative:

- Phone: 1-800-884-7371 or 1-650-428-4200
- Fax: 1-650-428-4201
- E-mail: info@interhdl.com

You must provide the following information:

- Your name, FAX number, phone number, and email address
- Your company's name and division (if appropriate)
- Host ID of the machine designated to run the license server
- IP address of the same machine
- Type of license (*Checkit*, *Verilint*, *VHDLlint*, etc.) you are requesting

After proper qualification, InterHDL will either FAX or email you two license keys. *Checkit* uses one or both of these keys during different phases of its execution

Once you have the license keys, perform the following steps:

1. Log in to the license server machine as the *EDA_installation_user* in one of the following ways.

It is generally recommended that you do **not** login as *root*. For security reasons, Network File Server (NFS) servers disallow access by *root* on remote machines. NFS servers treat *root* users as if they are the user *nobody*, which has a minimal set of rights.

If you are on the license server machine, login as the *EDA_installation_user*:

```
> su EDA_installation_user
```

To log in from another machine, type the following:

```
> rsh -l EDA_installation_user license_server_machine
```

2. Go to the directory where you installed the *Checkit* software:

```
> cd checkit_directory
```

Start the Elan license server daemon:

```
> ./ilm/start_ilm
```

Execute the **install_key** command.

```
> ./ilm/install_key
```

This command creates a file (**25.lic** or **26.lic**) in the `./ilm/keys` directory for each license type installed on the license server. The main *Checkit* license has a “feature code” of 25, hence the creation of **25.lic**. The second key used by *Checkit* has a feature code of 26 and a feature name of **checkitl**.

3. At the “On how many hosts will you run the license server? (default=1):” prompt, type “1” or press the <ENTER> key:

```
1
```

4. At the “Please enter your key” prompt, type the license key. The key typically starts with a two- or three- digit number (usually 64, 191, or 194) followed by a forward “/”. Keys without a preceding number and slash, have an implied “194/” preceding them.

```
191/license_key
```

If the key was installed successfully and the license server is running, the system creates a **xx.lic** file in the `./ilm/keys` subdirectory then shows the following message:

```
interHDL License Manager - Copyright 1989-1996 Elan Computer
Group, Inc.

Hostcode=194 (0302) =IPADDR+IDPROM(2)

    Feature name: checkit [25]
    Number of licenses: 1
    Expiration date: Sun May  3 23:59:59 1998 (3.58 days from
now)

Successfully installed key for feature checkit
(/green/checkit_directory/keys/25.lic).
Notifying server of new key ... OK
```

If the key was installed successfully but the license server was **not** previously started in step 3 or is not currently running, the system delivers the following message:

```
interHDL License Manager - Copyright 1989-1996 Elan Computer
Group, Inc.

Hostcode=194 (0302) =IPADDR+IDPROM(2)

    Feature name: checkit [25]
    Number of licenses: 1
    Expiration date: Sun May  3 23:59:59 1998 (3.58 days from
now)

Successfully installed key for feature checkit
(/green/checkit_directory/keys/25.lic).
Notifying server of new key ... Permission denied: must be owner,
root or member of group wheel
```

The trailing warning message is issued because the Elan license server is not running. However, the key was successfully installed and will be used once the license server starts running.

5. Repeat steps 4 through 6 to install the second license key and to create a second `xx.lic` file in the `./ilm/keys` directory.
6. If you wish to start the Elan license server daemon automatically after each reboot of a SunOS machine, add the following to the end of the SunOS license server machine's `/etc/rc.local` file:

```
### Elan License Manager Start UP (user & date) ###
if [-e absolutePath_checkit_directory/ilm/start_ilm]
then
    su -f EDA_installation_user \
        -c "absolutePath_checkit_directory/ilm/start_ilm"
else
    echo "interHDL su -f EDA_installation_user \
        -c "absolutePath_checkit_directory/ilm/start_ilm FAILED"
fi
```

7. If you are running a different Unix OS on the license server and you wish to start the Elan license server daemon automatically after each reboot, add the following to the end of the `/etc/inittab` file:

```
### Elan License Manager Start UP (user & date) ###
ilmd:2345:wait:su -f EDA_installation_user \
                 -c "absolutePath_checkit_directory/ilm/start_ilm" \
                 < /dev/console > /dev/console 2 > &1
```

8. If you want to start the license server manually each time you login to your system, enter the following command before running Checkit:

```
su -f EDA_installation_user -c "checkit_directory/ilm/start_ilm"
```

9. Verify that the license server is up and running:

```
> ./ilm/show_licenses
```

Running this script reports the following information:

- InterHDL license server header
- License server machine name
- All available licenses for all interHDL products

If this is not the case, see the “Troubleshooting UNIX License Problems” section on page 2-24, the “Installing Checkit on UNIX Systems” section on page 2-4, or the `checkit_directory/ilm/INSTALL` file.

10. Verify that your environment is set up correctly by running a small example:

```
> checkit -lint example.v
```

Installing Redundant License Servers on Three UNIX Machines

In a multiple-license-server setup, three license server machines are used to prevent a single point of failure. If the machine in a single-license-server setup goes down, you cannot use any license until the daemon is restored. In a multiple-license-server setup, one of the three machines is the “preferred license server machine.” If this machine fails, licensing continues with the two backup license server machines, which allows you to continue executing *Check it* while the preferred license server machine is re-booted or repaired.

While all three redundant license servers can work from the same NFS `ilm/keys` directory, it is generally recommended that each server use a different directory, stored on a different machine (ideally stored locally to each machine). This method prevents any single-point failure from disabling the license servers.

If you do not have license keys, please contact your interHDL sales representative:

- Phone: 1-800-884-7371 or 1-650-428-4200
- Fax: 1-650-428-4201
- E-mail: info@interhdl.com

You must provide the following information:

- Your name, FAX number, phone number, and email address
- Your company’s name and division (if appropriate)
- Host ID of the three machines designated as license server machines
- IP address of the same machines
- Type of license (*Checkit*, Verilint, VHDLint, etc.) you are requesting

After proper qualification, InterHDL will either FAX or email you the *Checkit* license keys.

Once you have the license keys, perform the following steps:

1. Log in to the license server machine as the `EDA_installation_user` in one of the following ways.

It is generally recommended that you do **not** login as `root`. For security reasons, Network File Server (NFS) servers disallow access by `root` on remote machines. NFS servers treat `root` users as if they are the user `nobody`, which has a minimal set of rights.

If you are **not** logged in as the *EDA_installation_user* on the license server machine, type the following:

```
> su EDA_installation_user
```

To log in from another machine, type the following:

```
> rsh -l EDA_installation_user license_server_machine
```

2. Go to the directory where you installed the Checkit software:

```
> cd checkit_directory
```

3. Execute the `install_key` command:

```
> ./ilm/install_key
```

This command creates two files (`25.lic` or `26.lic`) in the `./ilm/keys` directory for each license type installed on the license server. The main Checkit license has a “feature code” of 25, hence the creation of `25.lic`. The second key used by Checkit has a feature code of 26 and a feature name of **checkitl**.

4. At the “On how many hosts will you run the license server? (default=1):” prompt, type “3”:

```
3
```

5. At the “Please enter your key” prompt, type the license key:

```
license_key
```

6. At the “Enter the server host name #1:” prompt, type the name of the preferred license server machine.

7. At the “Enter the server host name #2:” prompt, type the name of a second license server machine.
8. At the “Enter the server host name #3:” prompt, type the name of the final license server machine.

If the key was installed successfully but the license server was **not** started (as is the case here in Steps 1-8), the system shows the following message:

```
interHDL License Manager - Copyright 1989-1996 Elan Computer
Group, Inc.

Hostcode=194 (0302) =IPADDR+IDPROM(2)

    Feature name: checkit [25]
    Number of licenses: 1
    Expiration date: Sun May  3 23:59:59 1998 (3.58 days from
now)

Successfully installed key for feature checkit
(/green/checkit_directory/keys/25.lic).
Notifying server of new key ... Permission denied: must be owner,
root or member of group wheel
```

The system issues the warning message at the end because the Elan license server is not running. However, the key was successfully installed and is used once the license server starts running. Steps 10-14, below, describe how to start the redundant license servers.

?INQUIRY?: *Tell Scott the term “key” was left out of the paragraph above. Replace the earlier paragraph with this one.*

If the key was installed successfully and the license server is already running, the system creates a `25.lic` file, then delivers the following message:

```
interHDL License Manager - Copyright 1989-1996 Elan Computer
Group, Inc.

Hostcode=194 (0302) =IPADDR+IDPROM(2)

    Feature name: checkit [25]
    Number of licenses: 1
    Expiration date: Sun May  3 23:59:59 1998 (3.58 days from
now)

Successfully installed key for feature checkit
(/green/checkit_directory/keys/25.lic).
Notifying server of new key ... OK
```

If you experience difficulty, see the “Troubleshooting UNIX License Problems” section on page 2-24.

9. Repeat Steps 3-8 to install the second license key shipped with *Checkit*, which creates a second `xx.lic` file in the `./ilm/keys` directory.
10. Create a `license_hosts` file in the *Checkit* license directory `./ilm`.

For each of the three servers, the `license_hosts` file must contain the following line:

```
%SERVER license_server_machine
```

Example:

```
%SERVER animal
%SERVER mineral
%SERVER vegetable
```

11. Log on to each license server machine as the `EDA_installation_user`, and list the contents of the *Checkit* license directory.

All license server machines must have access to the `./ilm/keys/xx.lic` and `license_hosts` files.

```
> rsh -l EDA_installation_user license_server_machine_x
> ls -al checkit_directory/ilm/*
```

If the *checkit_directory* is currently not accessible by all license server machines, contact your system administrator regarding mounting remote file systems. An alternative solution is to copy the contents of the *checkit_directory* to each license server machine. Alternatively, you can repeat Steps 1-10 for each of the other two license server machines.

12. Start the Elan license manager daemon on each license server machine:

```
> rsh -l EDA_installation_user license_server_machine_x
> cd /checkit_directory
> ./ilm/start_ilm -r ./ilm/license_hosts
```

13. If you experience difficulty, see the “Troubleshooting UNIX License Problems” section on page 2-24.
14. If you wish to start the Elan license server daemon automatically after each reboot of a SunOS machine, add the following to the end of the SunOS license server machine’s */etc/rc.local* file:

```
### Elan License Manager Start UP (user & date) ###
if [-e absolutePath_checkit_directory/ilm/start_ilm]
then
    su -f EDA_installation_user \
        -c "absolutePath_checkit_directory/ilm/start_ilm"
else
    echo "interHDL su -f EDA_installation_user \
        -c "absolutePath_checkit_directory/ilm/start_ilm FAILED"
fi
```

15. If you are running a different UNIX OS on the license server and you wish to start the Elan license server daemon automatically after each reboot, add the following lines to the end of the `/etc/inittab` file:

```
### Elan License Manager Start UP (user & date) ###
ilmd:2345:wait:su -f EDA_installation_user \
    -c "absolutePath_checkit_directory/ilm/start_ilm"
    \
    -r "absolutePath_checkit_directory/ilm/license_hosts"
    \
    < /dev/console > /dev/console 2 > &1
```

16. Verify from the preferred license server machine that the license server is up and running:

```
> ./ilm/show_licenses
```

Running this script reports the following information:

- InterHDL license server header
- License server machine name
- All available licenses for all interHDL products

If this is not the case, see the “Troubleshooting UNIX License Problems” section on page 2-24, the “Installing Checkit on UNIX Systems” section on page 2-4, or the `checkit_directory/ilm/INSTALL` file.



Note: If you have multiple tools from interHDL, use only one `ilm` license server from any one of the interHDL tools. All license key files must reside in the same `ilm/keys` directory.

17. Verify that your environment is set up correctly by running a small example:

```
> checkit -lint example.v
```

Troubleshooting UNIX License Problems

The following list describes procedures you can follow if you encounter license server problems:

- If your key directory is **not** the default directory (`ilm/keys`), verify that the `start_ilm` script looks for keys in the correct directory using the `ilmd -e` option.
- Make sure that the versions of `ilmadmin` and `ilmd` are identical by comparing their configurations. Type the following commands to show version information about `ilmadmin`:

```
> ilmadmin -q
> ilmadmin -i
```

When you compare the two sets of data, the vendor ID, host ID, port number, and versions of `ilmadmin` and `ilmd` must be identical. Currently, the version is 4.1.3 on all machines.

To find information about `ilmd`, do one of the following:

- Type `ilmd -i`, regardless whether or not `ilmd` is already running.
- Look at the log file to see if `ilmd` is running. The default location is `/usr/tmp/ilm.log`. Set the location using `ilmd -l`.
- Type `ilmd -f` if `ilmd` is not running. Terminate the process using the Control-C key combination.



Note: interHDL executables shipped after 1996 require an Elan 4.1.3 license server. However, interHDL executables shipped prior to this date can check out licenses from the Elan 4.1.3 server.

- Make sure that the license server daemon is running. To find out, type `ps auxww` or `ps -ef` and look for `ilmd`. If the daemon is not running, the message “**License server down**” appears. In this case, refer to step 2 of the “Installing the License Server on a Single UNIX Machine” section on page 2-13 or step 12 of the “Installing Redundant License Servers on Three UNIX Machines” section on page 2-18 for instructions on how to start `ilmd` manually.
- If you are running an application on a different subnet than the one on which the license server runs, make sure that you have the environment variable `INTERHDL_ELMHOST` set to the server name, using the following command:

```
> setenv INTERHDL_ELMHOST @license_server_machine
```

If this environment variable is not set, users on subnets other than the license server machines will get the message “**License server down.**” Even if the license server is on the same subnet, it is a good idea to have this environment variable set to speed up the process of getting the license.



Note: Elan has slightly changed the meaning of `INTERHDL_ELMHOST` in the newer releases. The command `setenv INTERHDL_ELMHOST license_server_machine` should now be changed to `setenv INTERHDL_ELMHOST @license_server_machine`. The @-sign indicates to not first try a broadcast to find the license server machine. The interpretation of `INTERHDL_ELMHOST` is done by the application checking out the license. Therefore, interHDL software versions prior to 1997 run only without the @-sign.

- If you get the message “**License server host unknown,**” check the spelling of the license server machine name in `INTERHDL_ELMHOST`. This message also is given when running older versions of interHDL applications, which do not recognize the @-sign in `INTERHDL_ELMHOST`, as described above. In this case, try defining `INTERHDL_ELMHOST` without the @-sign.
- If you get the message “**License key authorization failure,**” make sure the application runs on the machine on which it was licensed. Also, verify that you use the right license key directory by typing `ilmd -e`. Delete old license key directories.
- If you use multiple (three) license server machines, make sure that you have a resource file and that you started the daemon `ilmd` using the `-r` option.
- If you get the message “**License server down,**” try replacing the license server machine name in `INTERHDL_ELMHOST` with an Internet (IP) address. If this works, there is a problem with converting license server machine names to IP addresses.
- If you get the message “**Not enough servers running,**” try placing the license server machine names in `INTERHDL_ELMHOST` in the following order:
 - Highest internet (IP) address
 - Lower IP address
 - Lowest IP address

Also, verify that the **INTERHDL_ELMHOST** variable does not start with an @-sign. Both of these actions are especially necessary for executables released prior to 1997.

You can also replace the license server machine names in **INTERHDL_ELMHOST** and the redundant server resource file with their IP addresses.

When diagnosing redundant servers, make sure to check the log file of each license server.

- The message “**System error**” indicates that the Elan 4.1 license server found an old key file (Elan 2.3). Make sure that the license keys, usually residing in `ilm/keys`, have been reinstalled using **install_key**. Editing the key file with a text editor does **not** work. Also, verify that the directory does not contain old key files; that is, key files without the `.lic` extension.
- The message “**Unable to write file**” appears when the license server does not have write access to the license key file directory. This usually occurs when the license key file is on an NFS file server and the license server is running as root. For security reasons, NFS servers do not allow root file access from remote machines, and generally treat them as if they were accessed by user “nobody.”

In this case, run the license server as a non-root user, and make that user is the owner of the key file directory. Even root can start a license server as a non-root user using the following command:

```
> su -f daemon -c path_to_start_ilm
```

When you log in as root, this command runs **start_ilm** as user “daemon.”

- If you experience a problem different from the ones described in this section, please send the following information to interHDL:
 - Log files of the license servers
 - Output from the **ilmadmin -q** and **ilmadmin -i** commands.
 - Copies of the key files in the `keys` directory.

Troubleshooting LINUX License Problems

Many of the license manager problems encountered with Linux systems occur because the license manager requires networking, and not all Linux machines have it installed or configured. Please refer to the `checkit_directory/ilm/INSTALL` file for Linux troubleshooting tips.