



Libero[®] SoC v2021.2

Linux Environment Setup User Guide

Introduction

This user guide explains how to install Libero SoC and the Linux packages required to run Libero SoC. It also explains how to setup licensing.



Tip: The user guide is for users who will be running Libero SoC in a Linux environment.

Software Requirements

Libero SoC is supported on the following Linux operating systems.

- RHEL6.6 or later 64-bit, RHEL7 64-bit, and RHEL 8.2
- CentOS 6.6 or later 64-bit, CentOS 7 64-bit, and CentOS 8.2 64-bit
- Ubuntu 18.04
- OpenSUSE Leap 42.3 (SLES 12.3 equivalent)

Note: RHEL 5.x and CentOS 5.x do not support programming using FlashPro5.

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1. Libero SoC Installation

Download the current release of Libero SoC for Linux from:

<http://www.microsemi.com/products/fpga-soc/design-resources/design-software/libero-soc#downloads>

Follow the installer UI prompts and install Libero. Ensure that the user accounts that will be used to execute Libero have read access to the Libero installation area.

2. Installation

2.1 Step 1—Download License Daemons, License File, and Set Up Licensing on License Server

For some sites, the site's system administration policy requires a special user account to be set up for administering site-wide licenses for all applications. The account "<caeadmin>" is just a hypothetical user account name for this purpose. Use your regular user account (for example, user_john) for these steps if it is allowed at your site.

2.1.1 Download License Daemons

1. Open a terminal window by selecting **Applications > System Tools > Terminal**.
2. (Optional) At the Linux prompt, type `su - <caeadmin>` to switch to user "<caeadmin>" (assuming that your licenses are set up by a special user account called "<caeadmin>").
Note: Skip this step if your site's system administration policy allows a regular user to set up licensing.
3. Get the hardware MAC-ID of the Linux Host you want to use as the License Server.
 - 3.1. Type the following command:

```
% ifconfig | grep Eth
```
 - 3.1. The output from the command should be similar to: `eth0 Link encap:Ethernet HWaddr 00:0C:29:66:78:72`
 - 3.2. Record the 12-digit hex number. Leave out the colon ":". You will need this HostID to get the license file.
4. Download the License Server Daemons for Linux from the following location: <http://www.microsemi.com/products/fpga-soc/design-resources/licensing#downloads>.

2.1.2 Request a Libero SoC License

1. Login to your [Microsemi SoC customer portal](#) and request a new "Libero Silver Floating License for Windows or Linux Server". Use the recorded MAC- ID from the previously entered `ifconfig` command ([2.3 Step 3—Set Up Licensing \(Floating License\)](#)).
2. Download the license file to the HOME directory of the user who will be installing and administering licensing for Libero.

2.2 Step 2—Add Packages to the Linux OS

Libero SoC requires the Linux system to have some special packages that may not be part of a standard CentOS/ RHEL distribution. To help you find out what additional packages are required, a shell script is available in the `<Libero_SoC_installed_location>/bin/check_linux_req` directory. The script checks the packages on the Linux system, identifies the required packages that are already installed, and lets you know which packages need to be added.

To run the script, at the prompt type:

```
% cd <Libero_SoC_installed_location>/bin/check_linux_req  
% ./check_linux_req.sh
```

Note: This script is available with the Libero SoC PolarFire v1.1 SP1 release (for PolarFire devices) and Libero SoC v11.8 SP1 release (for all other devices).

Red Hat uses the Red Hat Package Manager (RPM). However, the Yellowdog Updater Modified (YUM) tool adds support for package management and dependency management. For this reason, YUM is the preferred tool.

Installation of these packages requires superuser privileges or an account on the sudo list. Use superuser account (root) or sudo access to run these commands:

1. Use the previously opened terminal or open a new terminal window by selecting **Applications > System Tools > Terminal**.

2. Do one of the following:
 - At the prompt, type:
% su -
 - Or, using sudo, type:
% sudo yum install -y <package name>
3. Ensure that all optional repositories are enabled, using the command "yum-config-manager --enable *optional*"
4. If a multilib error is seen for any package, run yum update first for that package, then retry the yum install step for that package. Repeat for all packages for which yum install errors out with a multilib error.

2.3 Step 3—Set Up Licensing (Floating License)

1. Unzip the previously downloaded licensing daemons file Linux_Licensing_Daemon.zip (from [2.4 Step 4—Download and Install a PDF Reader](#)):
% unzip Linux_Licensing_Daemon.zip; & chmod 755 Linux_Licensing_Daemon/*
2. Create a new directory called flexlm under <~caeadmin>:
% mkdir flexlm
3. Move the previously downloaded license file (from [2.7 Step 7—Setting the Vault to Store IP Cores](#)) into the flexlm directory.
4. Change directory into flexlm directory and unzip the License.dat file:
% cd flexlm;

% unzip License.dat
5. Start editing the License.dat file. Linux filenames are case-sensitive.
% gedit License.dat (if you are familiar with vi use vi License.dat)
6. Edit the first four lines in the License.dat file to match your current environment:
SERVER <localhost> <XXXXXXXXXXXX> 1702 <where <XXXXXXXXXXXX> is the 12- digit
MAC-ID of your Linux License server>

DAEMON actlmgrd /home/<caeadmin>/Linux_Licensing_Daemon/actlmgrd DAEMON mgcld /
home/<caeadmin>/Linux_Licensing_Daemon/mgcld VENDOR snpslmd /home/<caeadmin>/
Linux_Licensing_Daemon/snpslmd
7. Replace the <XXXXXXXXXXXX> in the first line with the MAC-ID you have obtained from the ifconfig command.
8. Save the License.dat file and return to the <caeadmin> HOME directory (<~caeadmin>). Start the licensing server manager (lmgrd) by entering the following command (no line break):
%/home/<caeadmin>/Linux_Licensing_Daemon/lmgrd -c /home/<caead- min>/flexlm/
License.dat -log /tmp/lmgrd.log
9. Check the log file for errors:
% more /tmp/lmgrd.log
10. If there are no errors, enter the following command:
% tail -f -s10 /tmp/lmgrd.log
11. Leave the terminal window with the <caeadmin> account open. Whenever a license is checked in or out from the License Server, the tail command prints the information to the <caeadmin> terminal window.
12. (Optional) Create the flexlm initialization script ([2.11 Step 10—Create flexlm Initialization Script \(Optional\)](#)) to start the license server whenever the system boots up. An rc script is provided ([2.10 Step 10—Configure Linux to Detect and Use Programmer Hardware](#)).

2.4 Step 4—Download and Install a PDF Reader

Note: If a PDF Reader is already installed, you can skip this step.

Libero requires a PDF reader to open the Libero Reference Manuals (**Help > Reference Manuals**).

2.5 Step 5—Set Up Locale User Environment Variable

Libero SOC only supports en_US.UTF-8 locale. To set a global locale for single user, open `~/.bash_profile` file and add the following lines:

```
LANG="en_US.UTF-8"
export LANG
```

2.6 Step 6—Set up the User Environment Variables to Start Libero SoC

This step sets up all user environment variables to run Libero SoC.

1. Open a terminal window by selecting **Applications > System Tools > Terminal**.
2. Use an editor and open the `~John/.bashrc` file (for user John).
3. Use an editor to open and append the following four lines to the user startup file.
 - 3.1. For `~John/.bashrc` (Bash-shell user John)

```
# For Floating License from a License Server
export LM_LICENSE_FILE=1702@localhost:$LM_LICENSE_FILE
export SNPSLMD_LICENSE_FILE=1702@localhost:$SNPSLMD_LICENSE_FILE
export LANG=en_US.UTF-8

# <1702> is the port number
# <localhost> is the license server host

name
#For Node-Locked License
export LM_LICENSE_FILE=<path_to_license.dat_folder>/license.dat:$LM_LICENSE_FILE
exportSNPSLMD_LICENSE_FILE=<path_to_license.dat_folder>/
license.dat:$SNPSLMD_LICENSE_FILE

export LD_LIBRARY_PATH=/usr/lib:$LD_LIBRARY_PATH
export LANG=en_US.UTF-8
export DISPLAY=:1
export PATH=/usr/local/microsemi/<Libero_current_rel>/Libero/bin:${PATH}
```

- 3.2. For `~John/.cshrc` (C-shell user John), append the following four lines:

```
#For Floating License from a License Server
setenv LM_LICENSE_FILE=1702@localhost:$LM_LICENSE_FILE
setenv SNPSLMD_LICENSE_FILE=1702@localhost:$SNPSLMD_LICENSE_FILE
setenv LANG en_US.UTF-8

# <1702> is the port number
# <localhost> is the license server

host name
#For Node-Locked License
setenv LM_LICENSE_FILE=<path_to_license.dat_folder>/license.dat:$LM_LICENSE_FILE
setenv SNPSLMD_LICENSE_FILE=<path_to_license.dat_folder>/
license.dat:$SNPSLMD_LICENSE_FILE

setenv LD_LIBRARY_PATH=/usr/lib:$LD_LIBRARY_PATH setenv export DISPLAY=:1
setenv LANG en_US.UTF-8

setenv PATH=/usr/local/microsemi/<Libero_current_rel>/Libero/bin:${PATH}
```

Note: Check the value for `LC_CTYPE` and ensure that it is same as `en_US.UTF.8`.

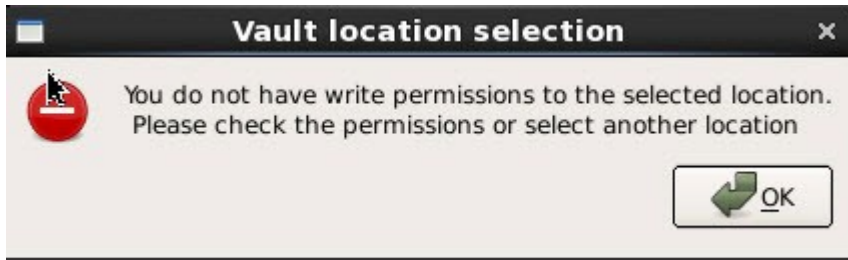
For details, see the instructions in the email you receive from Microchip with the `License.dat` file. For more information about licensing, see the [Libero Software Installation and Licensing Guide](#).

4. Save the `.bashrc` or `.cshrc` file and update your terminal window by typing `source ~/.bashrc` or `source ~/.cshrc`. (Alternatively, close the current window and open a new terminal window.)
5. Start Libero with the command `"libero &"`.

2.7 Step 7—Setting the Vault to Store IP Cores

Before IP cores from the IP catalog are available for use, the IP cores must be downloaded and stored in a physical disk location called the Vault. To set the vault location, from the Project menu, select Vault/Repositories and then the

Vault Location tab (**Project > Vault/Repositories Settings > Vault Location**), and enter the disk location. You must have the write permission to the disk location before it can be set as the vault location. A warning message displays if you do not have the write permission.



Vault locations can be set to a disk location on a per-user basis or set to a central location for all users.

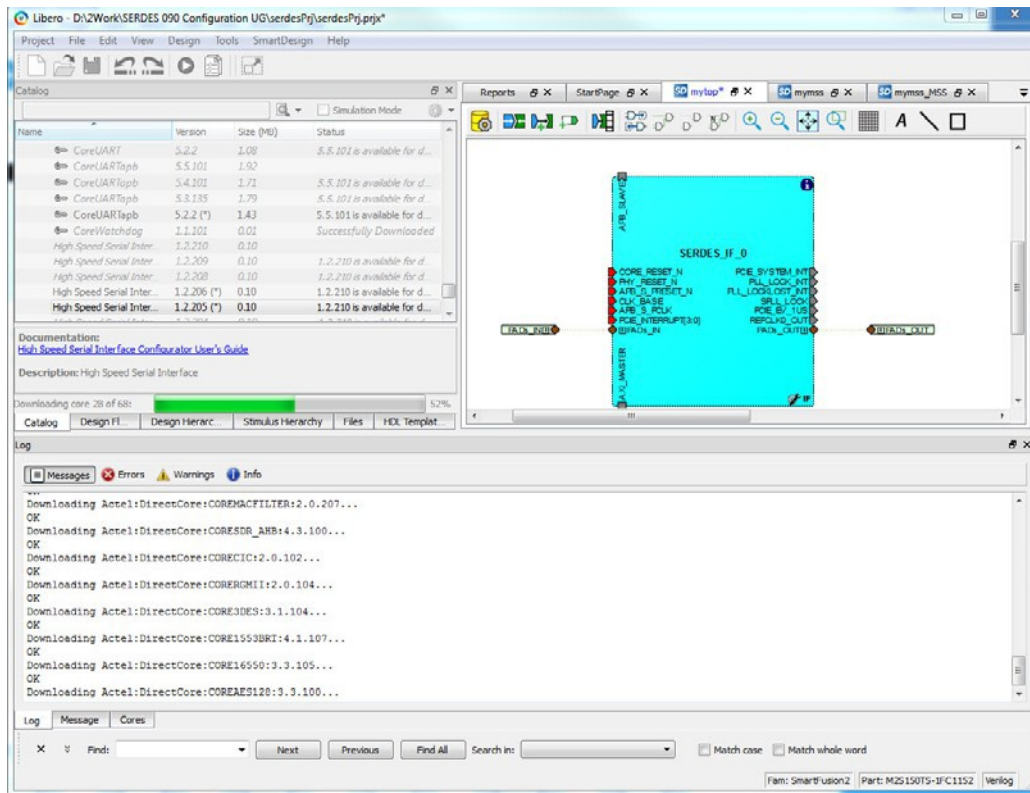
- **One vault location per user**
The individual user downloads and stores IP cores into this location. An internet connection is required for download. The individual user is responsible for maintaining the IP core versions and their availability in this vault.
- **One single central vault location for multiple users**
The System Administrator downloads and stores IP cores into this location. An internet connection is required for download. The System Administrator is responsible for maintaining the IP core versions and their availability. Multiple Individual users, who may not have an internet connection (and therefore cannot download IP cores), can set the vault to this central location and use the cores in the vault.

Note: The individual user must have write permission to the disk location of this central vault. If the user does not have write permission, he/she must copy the central vault to a disk location where he/she has write permission and set the vault to this copied location.

2.8 Step 8—Downloading Libero SoC IP Cores

In the Libero GUI, click **View > Windows > Catalog**. The catalog tab indicates the availability of new cores. Click **"Download them now!"**.

Figure 2-1. Downloading Libero SoC IP Cores



2.9 Step 9—Setting the PDF Reader and Web Browser

1. Set the PDF Reader (**Project > Preferences > PDF Reader**) to a PDF Reader, for example, `/usr/bin/acroread`.
2. Set the Web Browser to a browser of your choice (**Project > Preferences > Web Browser**), for example, `/usr/bin/firefox`.

Figure 2-2. Project Preferences for PDF Reader

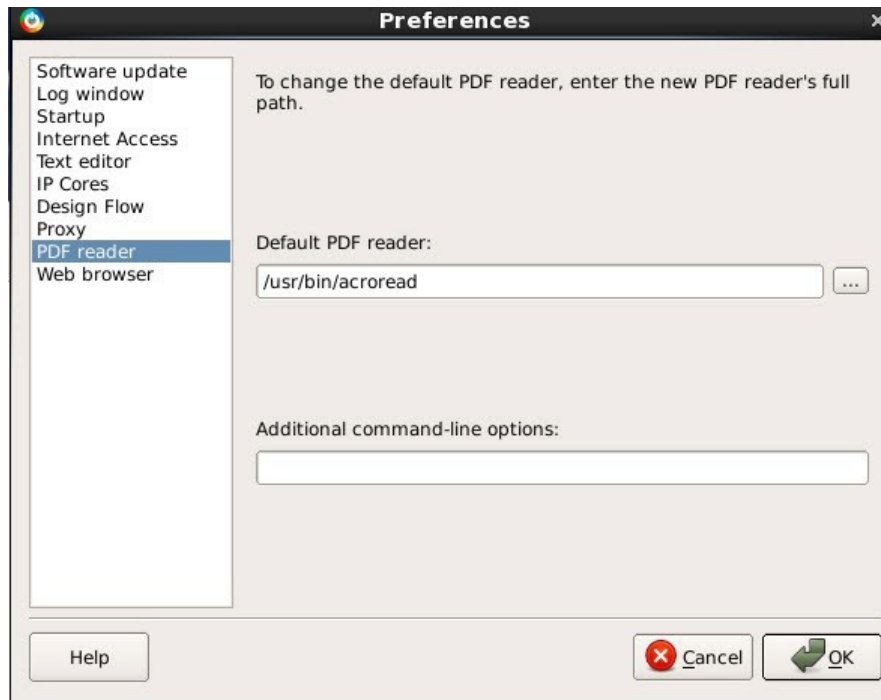
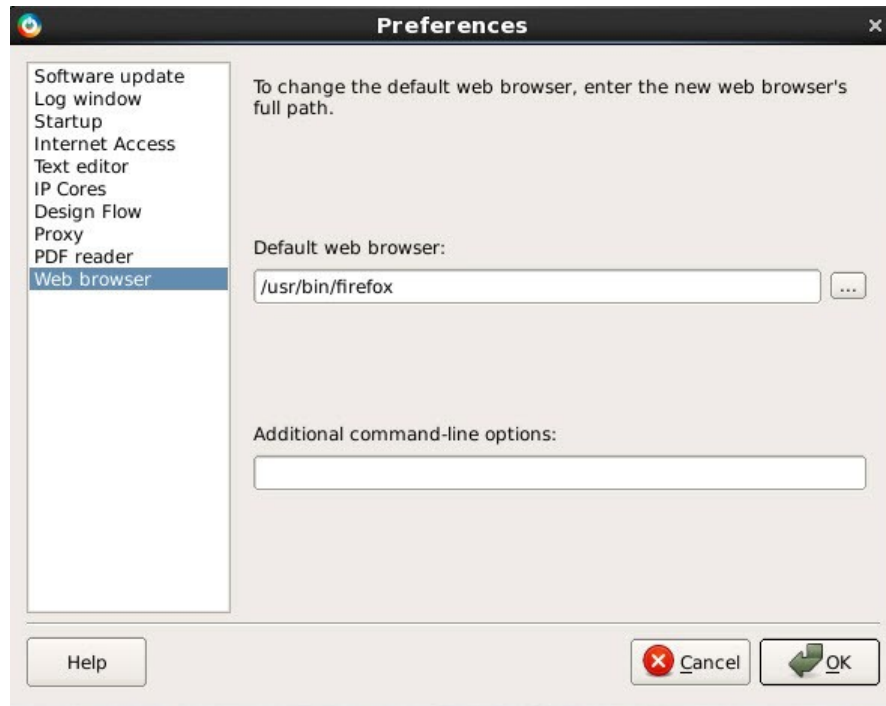


Figure 2-3. Project Preferences for Web Browser



2.10 Step 10—Configure Linux to Detect and Use Programmer Hardware

2.10.1 Configure Linux to Detect and Use FlashPro5 Programmer Hardware

If you want a regular user (without root permission) to program the Flash based FPGA devices with FlashPro5 hardware, you must run the `udev_install` script on the Linux machine as root. The `udev_install` script helps you set up a udev rule file for the FlashPro5 hardware.

This udev rule authorizes the Linux user group (that you specify during execution of `udev_install` script) to access the FlashPro5 hardware without `sudo` or root permission.

Follow the steps below to configure Linux to detect and use FlashPro5 programmer hardware.

1. At the prompt, type `su -`.
2. Change directory to the <caeadmin> HOME directory: `cd /home/<caeadmin>`.
3. Execute the `udev_install` script with the following option: `./udev_install -t /tmp`.
4. The previous command generates a template file called "70-microsemi.rules" in the /tmp directory
5. Modify the template file to match your group ID of the user "john" connecting the FlashPro5 hardware (assuming the user "john" will attach the FlashPro5 hardware):
 - 5.1. Open a terminal and run the command `id` as user john. The output should be similar to the following text: `uid=500(john) gid=500(john)...`
 - 5.2. Return to your terminal with root access. Open the "70-microsemi.rules" in an ASCII editor.
 - 5.3. Replace the "" with your current group ID # in the following two lines:

```
BUS=="usb",SYSFS{idProduct}=="2008",SYSFS{idVendor}=="1514",MODE="0660",GROUP="",SYMLINK+="FlashPro5"
BUS=="usb",SYSFS{idProduct}=="6001",SYSFS{idVendor}=="0403",MODE="0660",GROUP="",SYMLINK+="FTDI232"
```

Assuming the user john has "uid=500" and "gid=500", the line after editing should look like this:

```
BUS=="usb",SYSFS{idProduct}=="2008",SYSFS{idVendor}=="1514",MODE="0660",GROUP="500",SYMLINK+="FlashPro5"
BUS=="usb",SYSFS{idProduct}=="6001",SYSFS{idVendor}=="0403",MODE="0660",GROUP="500",SYMLINK+="FTDI232"
```

6. Move the "70-microsemi.rules" file to the proper location:
`% mv /tmp/70-microsemi.rules /etc/udev/rules.d/`

2.10.2 Configure Linux to Detect and Use FlashPro6 Programmer Hardware

Follow the steps below to configure Linux to detect and use FlashPro6 programmer hardware.

Notes: The `fp6_env_install` script creates two files:

- `cysub.conf` (located under /etc) – This file contains the list of devices you wish to communicate with CYUSB suite for Linux. If the file does not exist, the only device will be FlashPro6. Otherwise, the device is appended to the existing file.
- `88-cyusb.rules` (located under /etc/udev/rules.d/) – This file contains the udev rules for programming tools users to access the device without `sudo` or root access.

Procedure for sudo users (this is the preferred usage)

1. At the prompt, type `sudo -`
2. Change directory to <libero-install path>/bin (`cd <libero-install path>/bin`)
3. Execute `fp6_env_install`
 - The `cysub.conf` file will be created under /etc
 - The `88-cyusb.rules` file will be created or modified under /etc/udev/rules.d
4. When the script finishes, unplug the FlashPro6 hardware from the Linux server and then plug the hardware back in. This will enable updates for the correct modules in the system.

Procedure for non-sudo users (when installing FlashPro6 for the first time)

1. Change directory to <libero-install path>/bin (`cd <libero-install path>/bin`)
2. Execute `fp6_env_install -t /tmp`
 - The `cysub.conf` file is created or modified under /tmp

- The 88-cyusb.rules file is created or modified under /tmp
- 3. Once the files are created, ask a user with sudo access to copy the files.

2.11 Step 10—Create flexlm Initialization Script (Optional)

The Linux boot process allows services to be started with the help of startup scripts. The flexlm script automatically launches the licensing server during the boot process and properly shuts down the license daemon when the license server machine shuts down. This script eliminates the need to manually restart the licensing server after the license server Linux machine reboots.

1. Open a new terminal window by selecting **Applications > System Tools > Terminal**.
2. At the prompt, type:


```
% su -
```

```
% cd /etc/init.d
```
3. Start an editor with a new file flexlm.
4. Paste the following content into the editor:

```
#!/bin/bash #
# flexlm This starts and stops flexlm #
# description: Start or stop the flexlm license manager + vendor daemons #
# Return values according to LSB for all commands:
# 0 - success
# 1 - generic or unspecified error # 2 - invalid or excess argument(s)
# 3 - unimplemented feature (e.g. "reload") # 4 - insufficient privilege
# 5 - program is not installed # 6 - program is not configured # 7 - program is not
running
# #
PATH=/sbin:/bin:/usr/bin:/usr/sbin LICENSE_FILE=/home/<caeadmin>/flexlm/License.dat
LMGRD_HOME=/home/<caeadmin>/Linux_Licensing_Daemon LMGRD_LOGFILE=/tmp/lmgrd.log
prog="flexlm"
# Source function library.
. /etc/init.d/functions # Check license file
test -f $LICENSE_FILE || exit 6 RETVAL=0
start () {
test -x $LMGRD_HOME/lmgrd || exit 5 echo -n "Starting Microsemi $prog: "
su -c "$LMGRD_HOME/lmgrd -c $LICENSE_FILE -log $LMGRD_LOGFILE" - caeadmin RETVAL=$?
return $RETVAL
}
stop(){
}
echo -n $"Stopping Microsemi $prog: "
su -c "$LMGRD_HOME/lmutil lmdown -c $LICENSE_FILE -q" - caeadmin RETVAL=$?
return $RETVAL
status(){
su -c "$LMGRD_HOME/lmutil lmstat -c $LICENSE_FILE" - caeadmin RETVAL=$?
return $RETVAL
}
reload(){
stop start
}
restart(){
stop start
}
case "$1" in
stop)
start
;;
stop)
;;
status)
status
;;
restart)
restart
;;
reload|force-reload) reload
;;
*)
esac
```

```
echo $"Usage $0 {start|stop|status|restart|reload|force-reload}" RETVAL=3
exit $RETVAL
```

5. Save the file and exit the editor.
6. Change the permission of the flexlm file to rxwr-xr-x as follows:
chmod 755 flexlm
7. Create links for the Linux boot/shutdown process under the following runlevels:

```
# sh
# for i in 1 2 3 5
do
cd /etc/rc.d/rc${i}.d
ln -s ../init.d/flexlm S98flexlm
ln -s ../init.d/flexlm K98flexlm
>done
# for i in 0 6
do
cd /etc/rc.d/rc${i}.d
ln -s ../init.d/flexlm K98flexlm
done
#
```

8. Check the content of the License Log File /tmp/lmgrd.log file if you encounter any issues.

3. Libero SoC Installation Instructions in Ubuntu

1. Pre-installation instructions:

1.1. Install X-windows packages necessary to launch the Libero installer:

```
% sudo dpkg --add-architecture i386; sudo apt update
% sudo apt-get install apt-file; sudo apt update
% sudo apt-get install -y libxext6 libx11-6 libxrender1 libxtst6 libxi6
% sudo apt install lsb
```

1.2. Set your DISPLAY environment variable.

- For Bourne, Bash, or Korn shell:

```
$ export DISPLAY=localhost:0.0
```

- For C shell:

```
% setenv DISPLAY localhost:0
```

2. Upon successful installation of the required packages, navigate to the Libero SoC installer file location.

3. Run the installer.

```
% ./Libero_SoC_v2021.2.bin
```

4. Follow on screen installation instructions.

5. Install required system packages for Libero SoC v2021.2.

At the end of Libero installation, the installer automatically checks whether required system packages are installed. The installer prints commands to install the missing system packages. You need to run the commands as root (or with sudo privilege) to install the required system packages.

For example:

```
apt-get install -y libc6:i386 libdrm2:i386 libexpat1:i386 libfontconfig1:i386
libfreetype6:i386 libglapi-mesa:i386 libglu1:i386 libice6:i386
libsm6:i386 libuuid1:i386 libx11-6:i386 libx11-xcb1:i386 libxau6:i386 libxcb-dri2-0:i386
libxcb-glx0:i386 libxcb1:i386 libxdamage1:i386 libxext6:i386 libxf86vm1:i386
libxrender1:i386 libxxf86vm1:i386

apt-get install -y libasound2 libasyncns0 libdbus-1-3 libdrm2 libegl1 libexpat1 libflac8
libfontconfig1 libfreetype6 libgbm1 libglapi-mesa libglu1 libice6 libnspr4
libnss3 libogg0 libpulse0 libsm6 libsndfile1 libsqlite3-0 libvorbisenc2 libvorbis0a
libwrap0 libx11-xcb1 libxcb-dri2-0 libxcb-glx0 libxcb-render0 libxcb-shape0 libxcb-
xf86vm1 libxcomposite1 libxcursor1 libxdamage1 libxf86vm1 libxslt1.1 libxxf86vm1

apt-get install -y xfonts-100dpi xfonts-75dpi xfonts-base xfonts-intl-asian
xfonts-intl-chinese xfonts-intl-chinese-big xfonts-intl-japanese
xfonts-intl-japanese-big xkb-data ksh libxft2:i386
```

6. Libero SoC v2021.2 is now ready to use. Navigate to the Libero SoC installation folder and run **libero**.

```
# cd /Desktop/Libero_SoC_v2021.2/bin
# ./libero
```

4. Libero SoC Installation Instructions in OpenSUSE

1. Install X-windows packages necessary to launch the Libero installer.

```
% sudo zypper install libXext6 libX11-6 libXrender1 libXtst6 libXi6 libgtk-2_0-0 tar
```

2. Set your DISPLAY environment variable.

- For Bourne, Bash, or Korn shell:

```
$ export DISPLAY=localhost:0.0
```

- For C shell:

```
% setenv DISPLAY localhost:0
```

3. Upon successful installation of the required packages, navigate to the Libero SoC installer file location.
4. Run the installer.

```
% ./Libero_SoC_v2021.2.bin
```

5. Follow on screen installation instructions.
6. Click **Finish**. Libero SoC v2021.2 is now ready to use.

5. Libero SoC Installation Instructions in CentOS

1. Set your DISPLAY environment variable:

- For Bourne, Bash, or Korn shell:

```
$ export DISPLAY=localhost:0.0
```

- For C shell:

```
% setenv DISPLAY localhost:0
```

2. Upon successful installation of the required packages, navigate to the Libero SoC installer file location.
3. Run the installer.

```
% ./Libero_SoC_v2021.2.bin
```

4. Follow on screen installation instructions.
5. Click **Finish**. Libero SoC v2021.2 is now ready to use.

6. Appendix: Warning /Error Messages and Solutions

Linux users may encounter some or all of the following error messages. The solution for each is described in this appendix.

- [Error: Could not locate the Motif library in LD_LIBRARY_PATH](#)
- [Warning: Unknown locale](#)
- [Wind/U X-toolkit Error: wuDisplay: Can't open display](#)
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- [Missing libncurses.so.5 libraries \(ModelSim\)](#)
- [Missing libXrender libraries](#)
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6.1 Wind/U Error: Failed to connect to the registry on server

Symptoms: Wind/U Error: Failed to connect to the registry on server [server_name]

Cause: This Error may indicate that there is a Linux security setting that prevents Libero from connecting to the Wind/U Registry. This connection is typically made using a TCP port.

Solution: Resolve this error by modifying the Linux Security settings. For example, on RHEL5, navigate to the desktop menu **System > Administration > Login Screen > Security Tab** and Uncheck the Security Setting Deny TCP connections to Xserver. After making this change you must restart your computer for the changes to take effect.

Run the `actel_wuclean` command to clean up any left-over processes. At the command prompt:

```
% ./actel_wuclean -R -D
```

6.2 Warning: Unknown locale

Symptoms: Warning (241): Unknown locale specified locale:en_US.iso885915 LANGUAGE: UNDEFINED
 SUBLANGUAGE: Wind/U Warning (241): Unknown locale specified locale: en_US.iso885915
 LANGUAGE:UNDEFINED SUBLANGUAGE:

The four tabs on the lower left of the GUI are also displayed incorrectly.

Cause: This is caused by incorrect language setting on the Operating System.

Solution: Set the locale [elcap] with the following command:

```
% setenv LANG en_US
```

Note: If you experience this problem often, add the above command to your shell setup (such as .cshrc or .bashc) file.

6.3 Warning: Failed to contact web Repositories

The warning message "Failed to contact Web Repositories" appears in the Libero catalog window if any one of the following conditions is true:

- You do not have a connection to the Internet.
- You do not have write permission to the disk location you have set your vault to.
- Your vault location runs out of disk space. (For the Linux environment, Libero's vault location is set by default to your user directory in ~/.actel/vault. If your work site imposes quota restrictions on the size of user directories, you user directory may run out of disk space).
- A firewall prevents access to the Web Repositories.

To correct the problem:

- 4.1. Check that you have an Internet connection.
- 4.2. Check that you have write permission to the vault location or change your vault location setting to a location that you have write permission (Project > Vault/Repositories Settings > Vault location).
- 4.3. Increase the disk space for the vault location to a minimum of 850 MB.
- 4.4. Contact your IT department about the firewall issue.

6.4 Error: Could not Locate the Motif Library in LD_LIBRARY_PATH

Cause: Libero uses Motif Graphical Toolkit Library for its Graphical Interface on Linux. RHEL OS installation may not include a Motif Library.

Solution: If you have the Motif Library Installed, there should be an Environment Variable called LD_LIBRARY_PATH that points to the location of the Motif Library. Ensure that the path of the Motif Library is contained in the LD_LIBRARY_PATH Environment Variable. You can add the path with the command:

```
set LD_LIBRARY_PATH = (<path to Motif Library> $LD_LIBRARY_PATH)
```

If you are not sure whether you have the Motif Library Installed, try the following commands: The command "rpm -qa | grep -i motif" lists which Motif Library is installed.

The command "rpm -qal | grep -i motif" lists the files and paths associated with the motif library listed above (notice the extra "l" in the second command).

If you do not have a Motif Library Installed, consider downloading and installing OPEN Motif for free from <http://www.openmotif.org/>.

Libero Linux tools expect to see the libXm.so.3 package of the Motif Library. Different versions of OPEN Motif could potentially install libXm.so.4 or others that are not compatible with Libero. Ensure that the version of OPEN Motif used installs libXm.so.3. One example version that provides libXm.so.3 is openmotif v2.2.3. As Libero is a 32-bit application, the 32-bit Motif Library must be used even if the computer is running a 64-bit Operating System.

6.5 Wind/U X-toolkit Error: wuDisplay: Can't open display

Set the \$DISPLAY environment variable to:0 using the command:

```
setenv DISPLAY :0
```

Then run the command:

```
<Libero_Installation_Folder>/Libero/bin/actel_wuclean -R to clean up any processes
left over from the first invocation of Libero
```

6.6 Wind/U Error: A fatal registry I/O failure has occurred

Symptoms: Wind/U Error (251): Function RegPingDaemon - A fatal registry I/O failure has occurred. A registry daemon may not be running. Restart your application and verify that a registry daemon is running:

Wind/U Error (251): Function RegOpenKeyExA - A fatal registry I/O failure has occurred. A registry daemon may not be running. Restart your application and verify that a registry daemon is running.

Solution/Workaround: Run the 'actel_wuclean' utility found in the bin folder. Use the '-R' option as follows:

```
.../bin/actel_wuclean -R
```

The following messages may appear:

```
Shutting down Actel applications.
All actgen_bin processes are shut down.

All smartgen_bin processes are shut down.
All expert_bin processes are shut down.
All mvn_bin processes are shut down.
All libero_bin processes are shut down.
Shutting down Wind/U daemons...
All windu_scmd processes are shut down.
All windu_serviced processes are shut down.
All windu_registryd processes are shut down.
Removing Wind/U temporary files from the temporary directories...
Removing cached Wind/U files from the home directory...
Done
```

The actel_wuclean utility shuts down any Microsemi tools running on the same host by the same user. Save any work you may have before invoking actel_wuclean.

6.7 Segmentation fault "\$exedir/\$exename" "\$@" message

Scenario 1: When trying to invoke Libero SoC 10.1 on Linux Red Hat 5.4 (32bit or 64-bit), Libero may crash with segmentation fault message

Description: When you invoke Libero SoC v10.1 on Linux Red Hat 5.4 machine, Libero does not come up and a crash with segmentation fault message is issued. For example:

```
<line 67: 10617 Segmentation fault "$exedir/$exename" "$@">
```

Solution/Workaround: The templates file at <Installation-path-to-libero-10.1>/data/catalogs/ templates.xml may get corrupted and cause the crash. To resolve this issue, rename the file at

```
<Installation-path-to-libero-version>/data/catalogs/templates.xml to templates.xml.ori. Make
sure that there is enough disk space in the user's home directory, ~<user_name>.
```

Run the "check_linux_req" script to make sure that all required packages have been installed on the system.

Scenario 2: Multiview Navigator errors are reported upon opening the Constraints Editor.

Description: The following messages are displayed on the Linux terminal when the Floorplan Constraints Editor is opened:

```
Start Server 1
Start Server 2
Failed to open Def Table: 9 Failed to open Def Table: 8 Failed to open Def Table: 12
Running in orphan mode!
```

The following message appears on exiting MVN and a core file is created: .../bin/mvn: line 69: 1675 Segmentation fault (core dumped) "\$exedir/./lib/\$exename" "\$@"

Solution/Workaround: These errors can be ignored.

6.8 Designer GUI Appears Stretched When Running On Linux

Note: Designer is for IGLOO®, SmartFusion®, Fusion, and ProASIC3® devices only.

Scenario: Log onto a Linux machine, then run Designer software.

Symptoms: Some of the GUIs appear stretched.

Description: Some Designer GUIs appear stretched on Linux when directly logged into the machine. This is due to issues with mismatched color depths on the GUI and desktop.

Solution/Workaround: Change the desktop color depth to resolve the issue. For Linux access via VNC, change the color depth of the vncserver to 8, 16 or 24. See the vncserver manual pages for details.

6.9 Libero GUI is Distorted on Older Versions of Red Hat 5 Through VNC

Scenario: The Libero GUI may appear distorted when VNC is used with Linux Red Hat versions older than 5.3.

Description: When using VNC and Linux RH 5.2 or older, Libero GUI, fonts and background colors may appear slightly faded or fuzzy. This issue is not unique to Libero but affects all Qt based software including Synplify Pro. The problem is caused by the VNC server (Xvnc) not loading Xrender by default in these older versions of RHEL 5.

Note: There should be no issue when using Linux RHEL 5 (Tikanga) 5.3 to 5.75 (32-bit and 64-bit).

Workaround/ Solution:

When using RHEL 5.2 (and older) with VNC:

- Microchip has tested and recommends using Exceed 11, if possible. This version of Exceed is still on the support list at OpenText.

Or

- Upgrade to a newer version of VNC server (Xvnc) that enables Xrender by default. One version that has been tested is Tiger (an open source vncserver that is available from <http://sourceforge.net/projects/tigervnc/files/tigervnc/>) VNC v1.2.0 instead of the default VNC server on RHEL 5.2.

6.10 Libero GUI Fails to Start When Pre-loading a Project

Scenario: Your most recent project file may have been corrupted and causes Libero to crash trying to open the corrupted project file.

Solution: To change your user settings to prevent Libero from automatically opening your last project when it invokes:

1. Open `~/actel/libero.def`.
2. Add the following line to the file: `data IDE_OPEN_MRU_PROJECT 0`.
3. Start Libero using `<path_to_libero_install>/bin/Libero`.

6.11 Viewing PDF Files and Online Help Files

To view online Help files and PDF files, you may need to set environment variables `LINUX_HTMLREADER` to the full path of your web browser in your terminal before invoking Libero. For example:

`csh (C-shell):`

```
setenv LINUX_HTMLREADER /usr/bin/firefox
```

`sh (Borne Shell)/ ksh (Korn Shell):`

```
LINUX_HTMLREADER=/usr/bin/firefox; export LINUX_HTMLREADER
```

If you do not set the environment variable, some HTML files (such as the online help) will not be viewable from within Libero.

6.12 JRE libraries are missing or not compatible

This is a Libero Installer Error message.

Description: The Installer script requires some Java Libraries to run and the libraries are missing.

Solution:

1. Go to the following Java Download website and install the missing Java libraries:
<http://www.java.com/en/download/manual.jsp#lin>
2. To download the 32-bit version, select "Linux RPM". The Instructions on how to install the RPM are under "Instructions" link located to the right of the "Linux RPM" link.
3. To download the 64-bit version, select "Linux x64 RPM". The Instructions on how to install the RPM are under "Instructions" link located to the right of the "Linux x64 RPM" link.

Figure 6-1. Java Download Website



Note: Alternatively, you may install the latest OpenJDK JRE as follows:

```
% su
```

```
% yum install java
```

4. If the installer still fails and you are using CentOS 6, run the installer as follows:
`LiberoSoc_v<version>Linux_bin LAX_VM <path_to_JRE>/java.exe` This forces the Libero Linux Installer to use the Java executable in the specified path.

6.13 Libero Installer stalled on Red Hat/CentOS 6.x

Description: Installation starts but then stalls half-way through installation when installing Libero on Red Hat/CentOS 6.x machines. In the System Monitor, the Waiting Channel of the process is `futex_wait_queue_me`.

Solution: Update the system kernel to version 2.6.32-504.16.2.el6.x86_64

6.14 Error when Installing Linux Packages

Description: Error Message while installing Linux packages: Protected multilib versions

Cause: There is package incompatibility between i686 (32-bit) and x86_64 (64-bit) packages when 32-bit Linux packages are installed.

Solution: First upgrade the packages to 64-bit and then install the 32-bit package, e.g., for the gtk2 package, the commands are:

```
% sudo yum upgrade gtk2
```

```
% sudo yum install gtk2.i686
```

6.15 During Installation Warning Message appears: /tmp does not have enough disk space

Cause: The Installer runs out of disk space in /tmp and tries to use /home/user instead, which also has less disk space than required.

Solution: At the Linux prompt, set the environment variable IATEMPDIR to a disk location with enough disk space as follows:

- For Borne Shell (sh), Korn Shell (ksh), bash and zsh users:

```
% IATEMPDIR=/your/free/space/directory
```



```
% export IATEMPDIR
```
- For C-shell (csh) and tcsh users:

```
setenv IATEMPDIR= /your/free/space directory
```

6.16 X libraries not in LD_LIBRARY_PATH (Libero)

Description: Libero has a dependency on the X Libraries but cannot find it.

Solution: Install libXft package:

```
% sudo yum install libXft.i686
```

6.17 Missing libgthread-2.0.so.0 libraries (Libero)

Description: Libero has a dependency on the glib2 Libraries but cannot find it.

Solution: Install glib2 package:

```
% sudo yum install glib2.i686
```

Note: If the yum install command errors out because of a version conflict with x86_64 version already installed, use the yum update command instead:

```
% sudo yum update glib2
```

6.18 Missing MOTIF libraries (Libero)

Description: Libero has a dependency on the MOTIF libraries but cannot find them.

Solution: Install the MOTIF libraries:

```
% sudo yum install openmotif (for CentOS 5/RedHat)
% sudo yum install openmotif22 (for CentOS 6/RedHat)
% sudo yum install motif (for CentOS7/RedHat 7)
```

6.19 Missing libncurses.so.5 libraries (ModelSim)

Description: ModelSim Simulator has a dependency on the libncurses.so.5 libraries but cannot find them.

Solution: Install the current package version of ncurses libraries:

```
% sudo yum install ncurses-libs.i686
```

6.20 Missing libXrender libraries

Description: Libero has a dependency for libXrender libraries but cannot find them.

Solution: Install the current libXrender libraries:

```
% sudo yum install libXrender.i686
```

6.21 Missing libfontconfig.sol.1 libraries

Description: Libero has a dependency for libfontconfig libraries but cannot find them.

Solution: Install the libfontconfig libraries:

```
% sudo yum install fontconfig-2.8.0-3.el6.i686 (for Red Hat)
```

```
% sudo yum install fontconfig-2.8.0-5.el6.i686 (for CentOS)
```

6.22 Missing libfreetype.so.6 libraries

Description: Libero has a dependency for libfreetype libraries but cannot find them.

Solution: Install the current freetype libraries:

```
% sudo yum install freetype-2.3.11-14.el6_3.1.i686
```

6.23 Missing libpng.so.6 libraries

Description: Libero v12.2 and earlier requires the installation of libpng12.x86_64 system package.

Solution: Install libpng12.x86_64 library:

```
% sudo yum install libpng12.x86_64
```

6.24 Double Quotes around Vault Location Path on Linux Installation

Symptom: After console mode installation on Linux, the vault location displayed under Project > vault/ repositories setting shows <path install libero>/bin "<path common directory>/vault." The double quotes around the vault path location should be removed.

Problem: The install.def file has double quotes around the variable for the vault location.

Workaround: Exit Libero, update the install.def file, and restart Libero.

1. Exit Libero.
2. At the Linux shell prompt, go to <Libero_installed_path>/data directory:

```
% cd <Libero_installed_path>/data
```
3. At the Linux shell prompt, apply the sed command to remove the double quotes in the install.def file:

```
% sed 's/"//g' install.def > tmp.def
% cp tmp.def install.def
% rm tmp.def
```

4. Restart Libero to check that the double quotes around the vault location path are removed.

6.25 Script "udev_install" to set up FlashPro fails on Linux

Symptom: When running the "udev_install" script to set up FlashPro on Linux, the script fails with error message:

```
% ./udev_install
```

```
/bin/sh^M: bad interpreter: No such file or directory
```

Problem: The script uses Windows CR/LF line termination instead of Unix/Linux LF only line termination and, as such, is not a valid shell script for Linux.

Workaround: Users must run dos2unix command on the script "udev_install" to convert Windows CR/ LF line termination to Linux LF only line termination and run the script again. At the Linux shell prompt:

```
% dos2unix udev_install
% ./udev_install
```

Note: If dos2unix is not available, run the following command to install dos2unix, then run dos2unix:

```
% sudo yum install dos2unix
```

6.26 Starting the License Manager gives Error on Linux

Symptom: When running lmgrd to start the License Manager on Linux, the system gives this error message:

```
12:39:28 (actlmgrd) Vendor daemon can't talk to lmgrd (License server machine is down
or not responding. (-96,7:2 "No such file or directory"))
```

```
12:39:28 (actlmgrd) EXITING DUE TO SIGNAL 37 Exit reason 5
```

Problem: The host is not recognized due to a problem in the /etc/hosts file on the Linux system.

Solution:

1. At the Linux prompt, edit the /etc/hosts file and add the following lines:

```
# IP address Hostname Alias
127.0.0.1 localhost <hostname>
```

Note: <hostname> is the name of the Linux system.

2. Restart lmgrd.

6.27 Missing libXtst library during Libero installation

Symptom: Libero installer crashes with the following message:

```
Invocation of this Java Application has caused an InvocationTargetException. This application
will now exit. (LAX)
Stack Trace: java.lang.UnsatisfiedLinkError:
/tmp/install.dir.8046/Linux/resource/jre/lib/i386/xawt/libmawt.so: libXtst.so.6: cannot open
shared object file: No such file or directory
```

Problem: libXtst system library is missing.

Solution: Install libXtst.i686 library:

```
% sudo yum install libXtst.i686
```

Note: This issue exists only for Libero SoC v12.0, v12.1, and v12.2.

6.28 Libero installation registry file still shows installed directories even though they had been uninstalled

Symptom: Libero installer dialog still shows existing installation instances even though such instances had been uninstalled.

Problem: Libero installer keeps installation instances in its registry file kept at the user home location by the name '.com.zerog.registry.xml'. After the uninstallation of each instance, the instance properties lines in the registry file do not get deleted as expected. Upon subsequent installation, the installer shows the previous installations as existed.

Workaround: Users must manually remove the installation properties lines in the registry file.

Example of the registry file:

```
<product name="Libero SoC v11.8" id="11d9aae4-1f0b-11b2-ad7a-efd5e774d882"
version="11.8.0.119" copyright="2013" info_url="" support_url="" location="/home/mikej/prod/
Libero_v11.8" last_modified="2020-01-24 02:37:58">
<![CDATA[]]>
<vendor name="Microsemi Corp." id="11d9b6f2-1f0b-11b2-ad7a-efd5e774d882" home_page="http://
www.actel.com" email=""/>
```



```
...  
</product>
```

Carefully remove the above lines from the registry file. Save and exit. Restart Libero installer. The previous installation will not show up again.

6.29 Possible errors related to Linux SSSD

Description: Customers on RHEL/CentOS 6.8 or higher and who use System Security Services Daemon (SSSD) for authentication should install system package sssd-client.i686. Further information is available here:

https://access.redhat.com/documentation/en-us/red_hat_enterprise_linux/6/html/deployment_guide/SSSD-Troubleshooting#idm139666065990896

Problem: If you configure SSSD for central authentication, several applications, such as Firefox or Adobe, might not start.

Workaround: Even on 64-bit systems, 32-bit applications require a 32-bit version of SSSD to use to access the password and identity cache. If a 32-bit version of SSSD is not available, but the system is configured to use the SSSD cache, then 32-bit applications can fail to start.

Recommended Action:

```
% sudo yum install sssd-client.i686
```

For example, customers may see the following errors when running Designer:

```
Wind/U Error (251): Function RegPingDaemon - A fatal registry I/O failure has occurred. A registry daemon may not be running. Restart your application and verify that a registry daemon is running.  
Wind/U Error (251): Function RegOpenKeyExA - A fatal registry I/O failure has occurred. A registry daemon may not be running. Restart your application and verify that a registry daemon is running.  
Wind/U Error (251): Function RegPingDaemon - A fatal registry I/O failure has occurred. A registry daemon may not be running. Restart your application and verify that a registry daemon is running.  
Wind/U Error (251): Function RegOpenKeyExA - A fatal registry I/O failure has occurred. A registry daemon may not be running. Restart your application and verify that a registry daemon is running.
```

7. References

The following document is referenced in this user guide.

- [Libero Software Installation and Licensing Guide](#)

8. Revision History

Revision	Date	Description
C	08/2021	3. Libero SoC Installation Instructions in Ubuntu : Added an instruction to install the 'lsb' package.
B	04/2021	Introduction : Updated the Linux Operating Systems
A	11/2020	The document is converted to Microchip template. Initial Revision

9. Microchip FPGA Technical Support

Microchip FPGA Products Group backs its products with various support services, including Customer Service, Customer Technical Support Center, a website, and worldwide sales offices. This section provides information about contacting Microchip FPGA Products Group and using these support services.

9.1 Customer Service

Contact Customer Service for non-technical product support, such as product pricing, product upgrades, update information, order status, and authorization.

- From North America, call **800.262.1060**
- From the rest of the world, call **650.318.4460**
- Fax, from anywhere in the world, **650.318.8044**

9.2 Customer Technical Support

Microchip FPGA Products Group staffs its Customer Technical Support Center with highly skilled engineers who can help answer your hardware, software, and design questions about Microchip FPGA Products. The Customer Technical Support Center spends a great deal of time creating application notes, answers to common design cycle questions, documentation of known issues, and various FAQs. So, before you contact us, please visit our online resources. It is very likely we have already answered your questions.

You can communicate your technical questions through our Web portal and receive answers back by email, fax, or phone. Also, if you have design problems, you can upload your design files to receive assistance. We constantly monitor the cases created from the web portal throughout the day. When sending your request to us, please be sure to include your full name, company name, and your contact information for efficient processing of your request.

Technical support can be reached at soc.microsemi.com/Portal/Default.aspx.

For technical support on RH and RT FPGAs that are regulated by International Traffic in Arms Regulations (ITAR), log in at soc.microsemi.com/Portal/Default.aspx, go to the **My Cases** tab, and select **Yes** in the ITAR drop-down list when creating a new case. For a complete list of ITAR-regulated Microchip FPGAs, visit the ITAR web page.

You can track technical cases online by going to [My Cases](#).

9.3 Website

You can browse a variety of technical and non-technical information on the Microchip FPGA Products Group [home page](#), at www.microsemi.com/soc.

9.4 Outside the U.S.

Customers needing assistance outside the US time zones can either contact technical support at (<https://soc.microsemi.com/Portal/Default.aspx>) or contact a local sales office.

Visit [About Us](#) for [sales office listings](#) and [corporate contacts](#).

The Microchip Website

Microchip provides online support via our website at www.microchip.com/. This website is used to make files and information easily available to customers. Some of the content available includes:

- **Product Support** – Data sheets and errata, application notes and sample programs, design resources, user's guides and hardware support documents, latest software releases and archived software
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To register, go to www.microchip.com/pcn and follow the registration instructions.

Customer Support

Users of Microchip products can receive assistance through several channels:

- Distributor or Representative
- Local Sales Office
- Embedded Solutions Engineer (ESE)
- Technical Support

Customers should contact their distributor, representative or ESE for support. Local sales offices are also available to help customers. A listing of sales offices and locations is included in this document.

Technical support is available through the website at: www.microchip.com/support

Microchip Devices Code Protection Feature

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- Microchip is willing to work with any customer who is concerned about the integrity of its code.
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