

ISE Design Suite 10.1 Release Notes and Installation Guide



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About This Guide

This guide explains how to install ISE™ Design Suite 10.1, which includes the Integrated Software Environment (ISE), ChipScope™ Pro, Xilinx Embedded Development Kit (EDK), DSP Tools (including AccelDSP™ and System Generator), and PlanAhead™/PlanAhead Lite. It also describes how to use Xilinx® online documentation.

Information on technical support and known issues for ISE Design Suite 10.1 software are also included.

Guide Contents

This manual contains the following chapters:

- [Chapter 1, “What’s New in ISE Design Suite 10.1”](#)
- [Chapter 2, “Known Issues for ISE Design Suite Products”](#)
- [Chapter 3, “Operating System and Architecture Support”](#)
- [Chapter 4, “Using the Xilinx Product Registration and Download Site”](#)
- [Chapter 5, “Installation”](#)
- [Chapter 6, “Product-Specific Installation, Registration, and Usage Notes”](#)
- [Chapter 7, “Technical Services and Support”](#)
- [Appendix A, “License Agreements”](#)

Additional Resources

To find additional documentation, see the Xilinx website at:

http://www.xilinx.com/support/software_manuals.htm

To search the Answer Database of silicon, software, and IP questions and answers, or to create a technical support WebCase, see the Xilinx website at:

<http://www.xilinx.com/support>.

To obtain the current version of the USB Cable Installation Guide, see the Xilinx website at:

http://www.xilinx.com/support/documentation/user_guides/ug344.pdf

To obtain the current version of the data sheet for Platform Cable USB, see the Xilinx Website at:

http://www.xilinx.com/support/documentation/data_sheets/ds300.pdf

To obtain the current version of the data sheet for Parallel Cable IV, see the Xilinx Website at:

http://www.xilinx.com/support/documentation/data_sheets/ds097.pdf

Conventions

This document uses the following conventions. An example illustrates each convention.

Typographical

The following typographical conventions are used in this document:

Convention	Meaning or Use	Example
Courier font	Messages, prompts, and program files that the system displays	speed grade: - 100
Courier bold	Literal commands that you enter in a syntactical statement	ngdbuild <i>design_name</i>
Helvetica bold	Commands that you select from a menu	File →Open
	Keyboard shortcuts	Ctrl+C
Italic font	Variables in a syntax statement for which you must supply values	ngdbuild <i>design_name</i>
	References to other manuals	See the <i>Development System Reference Guide</i> for more information.
	Emphasis in text	If a wire is drawn so that it overlaps the pin of a symbol, the two nets are <i>not</i> connected.
Square brackets []	An optional entry or parameter. However, in bus specifications, such as bus [7 : 0] , they are required.	ngdbuild [<i>option_name</i>] <i>design_name</i>
Braces { }	A list of items from which you must choose one or more	lowpwr = { on off }
Vertical bar	Separates items in a list of choices	lowpwr = { on off }

Convention	Meaning or Use	Example
Vertical ellipsis . . .	Repetitive material that has been omitted	IOB #1: Name = QOUT' IOB #2: Name = CLKIN' . . .
Horizontal ellipsis ...	Repetitive material that has been omitted	allow block <i>block_name loc1 loc2 ... locn;</i>

Online Document

The following conventions are used in this document:

Convention	Meaning or Use	Example
Blue text	Cross-reference link to a location in the current document	See the section “ Additional Resources ” for details. Refer to “ Title Formats ” in Chapter 1 for details.
Red text	Cross-reference link to a location in another document	See Figure 2-5 in the <i>Virtex-II Platform FPGA User Guide</i> .
Blue, underlined text	Hyperlink to a website (URL)	Go to http://www.xilinx.com for the latest speed files.

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What's New in ISE Design Suite 10.1

This chapter describes how to access the list of new features that are included in the products that comprise ISE™ Design Suite 10.1.

What's New

MS Windows Only

You can view the What's New documentation by selecting **Start > Programs > Xilinx ISE Design Suite 10.1 > [product name] > Documentation > What's New**, where *[product name]* is the name of any of the products you have installed, such as ISE, ChipScope Pro™, DSP_Tools, EDK, and PlanAhead™.

MS Windows and Linux

The What's New documentation is contained in a file called `whatsnew.htm`, which is located in the home directory of each product that the ISE Design Suite 10.1 Installer creates under the ISE Design Suite 10.1 home directory (default: Xilinx10.1). Possible directory names are:

- ChipScope
- DSP_Tools
- EDK
- ISE
- PlanAhead

Note: All of the What's New files referenced above are identical, and contain information on all of the products included in ISE Design Suite 10.1.

Known Issues for ISE Design Suite Products

This chapter describes how to access the Known Issues for ISE™ Design Suite 10.1.

Known Issues

Xilinx Technical Publication 026 contains information on Known Issues for ISE Design Suite 10.1:

[Known Issues 10.1](#)

Operating System and Architecture Support

This chapter describes the operating systems and architectures ISE™ Design Suite 10.1 supports. This chapter comprises the following sections:

- “Operating Systems”
- “Architectures”

Operating Systems

ISE Design Suite 10.1 supports three operating systems, which are Microsoft Windows®, Red Hat® Enterprise Linux, and SUSE Linux Enterprise.

MS Windows

The following table lists MS Windows support.

Table 3-1: MS Windows Support

Product	XP Professional		Vista Business	
	32-bit	64-bit	32-bit	64-bit
ISE Foundation	Yes	Yes	Yes	Yes
ISE Foundation with ISE Simulator	Yes	Yes Note: To use ISE Simulator on 64-bit MS Windows, you must run the 32-bit version of Project Navigator, which is automatically installed with the 64-bit versions of ISE Design Suite.	Yes	Yes Note: To use ISE Simulator on 64-bit Vista, you must run the 32-bit version of Project Navigator, which is automatically installed with the 64-bit versions of ISE Design Suite.
ISE WebPACK	Yes	No	Yes	No
ChipScope™ Pro and Serial I/O Toolkit	Yes	Yes	Yes	Yes
PlanAhead™	Yes	Yes	Yes	Yes
Embedded Development Kit (EDK)	Yes	No	Yes	No
System Generator for DSP and AccelDSP™	Yes	No	No	No

Red Hat Enterprise Linux

The following table lists Red Hat Enterprise Linux support.

Table 3-2: Red Hat Enterprise Linux Support

Product	4 Workstation		5 Desktop	
	32-bit	64-bit	32-bit	64-bit
ISE Foundation	Yes	Yes	Yes	Yes
ISE Foundation with ISE Simulator	Yes	Yes	Yes	Yes
ISE WebPACK	Yes	No	Yes	No
ChipScope Pro and Serial I/O Toolkit	Yes	Yes	Yes	Yes
PlanAhead	Yes	Yes	Yes	Yes
Embedded Development Kit (EDK)	Yes	Yes	Yes	Yes
System Generator for DSP and AccelDSP	No	No	No	No

SUSE Linux Enterprise

The following table lists SUSE Linux Enterprise 10 support.

Table 3-3: SUSE Linux Enterprise 10 Support

Product	32-bit	64-bit
ISE Foundation	Yes	Yes
ISE Foundation with ISE Simulator	Yes	Yes
ISE WebPACK	Yes	No
ChipScope Pro and Serial I/O Toolkit	Yes	Yes
PlanAhead	Yes	Yes
Embedded Development Kit (EDK)	Yes	Yes
System Generator for DSP and AccelDSP	No	No

Architectures

ISE Design Suite 10.1 supports three architecture families, which are Virtex™, Spartan™, and CPLD.

Virtex

The following tables list Virtex support.

Table 3-4: Virtex Support

Product	Virtex	-E	-II	-II Pro	-II Pro X	-4	-5
ISE Foundation	Yes	Yes	Yes	Yes	Yes	Yes	Yes
ISE Foundation with ISE Simulator	Yes	Yes	Yes	Yes	Yes	Yes	Yes
WebPACK	V50, V100, V150, V200, V300, V400, V600	V50E, V100E, V200E, V300E, V400E, V405E, V600E	2V40, 2V80, 2V250, 2V500	2VP2, 2VP4, 2VP7, 2VP20, 2VP30	No	4VLX15, 4VLX25, 4VSX25, 4VFX12	5VLX20T, 5VLX30, 5VLX50, 5VLX30T, 5VLX50T, 5VFX30T
ChipScope Pro	Yes	Yes	Yes	Yes	Yes	Yes	Yes
ChipScope Pro Serial I/O Toolkit	No	No	No	No	No	Yes	Yes
PlanAhead	No	No	Yes	Yes	Yes	Yes	Yes
Embedded Development Kit (EDK)	Yes	Yes	2V250 or larger	Yes	No	Yes	Yes Note: FXT - Early Access Support with full support coming in a 10.1 Service Pack
System Generator for DSP and AccelDSP	Yes	Yes	Yes	Yes	Yes	Yes	Yes

Table 3-5: Virtex Aerospace and Defense Support

Product	Defense QPro					Aerospace QPro-R Radiation Tolerant		
	Virtex Q	-E Q	-II Q	-II Pro Q	-4 Q	Virtex QR	-II QR	-4 QR
ISE Foundation	Yes	Yes	Yes	Yes	Yes	Yes	Yes	4VLX200, 4VSX55, 4VGX60
ISE Foundation with ISE Simulator	Yes	Yes	Yes	Yes	Yes	Yes	Yes	4VLX200, 4VSX55, 4VGX60
ISE WebPACK	V100, V300, V600	V600E	No	No	No	VR300, VR600	No	No
ChipScope Pro	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
ChipScope Pro Serial I/O Toolkit	No	No	No	No	No	No	No	No
PlanAhead	No	No	Yes	Yes	Yes	No	Yes	4VLX200, 4VSX55, 4VGX60
Embedded Development Kit (EDK)	Yes	Yes	Yes	Yes	coming in a 10.1 Service Pack	Yes	Yes	coming in a 10.1 Service Pack
System Generator for DSP and AccelDSP	No	No	No	No	No	No	No	No

Spartan

The following tables list Spartan support.

Table 3-6: Spartan Support

Product	-II	-IIE	-3	-3E	-3L	-3A	-3AN	-3A DSP
ISE Foundation	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
ISE Foundation with ISE Simulator	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
ISE WebPACK	Yes	Yes	3S50, 3S200, 3S400, 3S1000, 3S1500	Yes	3S1000L, 3S1500L	Yes	Yes	Yes
ChipScope Pro	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
ChipScope Pro Serial I/O Toolkit	No	No	No	No	No	No	No	No
PlanAhead	No	No	Yes	Yes	Yes	Yes	Yes	Yes
Embedded Development Kit (EDK)	2S50 or larger	Yes	Yes	Yes	No	Yes	Yes	Yes
System Generator for DSP and AccelDSP	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes

Table 3-7: Spartan Automotive Support

Product	-IIE	-3	-3E	-3A	-3A DSP
ISE Foundation	Yes	Yes	Yes	coming in 10.1 Service Pack 1	coming in 10.1 Service Pack 1
ISE Foundation with ISE Simulator	Yes	Yes	Yes	coming in 10.1 Service Pack 1	coming in 10.1 Service Pack 1
ISE WebPACK	Yes	Yes	Yes	coming in 10.1 Service Pack 1	coming in 10.1 Service Pack 1
ChipScope Pro	Yes	Yes	Yes	coming in 10.1 Service Pack 1	coming in 10.1 Service Pack 1
ChipScope Pro Serial I/O Toolkit	No	No	No	No	No
PlanAhead	No	Yes	Yes	coming in 10.1 Service Pack 1	coming in 10.1 Service Pack 1
Embedded Development Kit (EDK)	Yes	Yes	Yes	coming in a 10.1 Service Pack	coming in a 10.1 Service Pack
System Generator for DSP and AccelDSP	coming in a 10.1 Service Pack	coming in a 10.1 Service Pack	coming in a 10.1 Service Pack	coming in a 10.1 Service Pack	coming in a 10.1 Service Pack

CPLD

The following tables list CPLD support.

Table 3-8: 9500 Support

Product	9500	9500XL	9500XV	Automotive 9500XL
ISE Foundation	Yes	Yes	Yes	Yes
ISE Foundation with ISE Simulator	Yes	Yes	Yes	Yes
ISE WebPACK	Yes	Yes	Yes	Yes
ChipScope Pro and Serial I/O Toolkit	No	No	No	No
PlanAhead	No	No	No	No
Embedded Development Kit (EDK)	No	No	No	No
System Generator for DSP and AccelDSP	No	No	No	No

Table 3-9: CoolRunner Support

Product	CoolRunner XPLA3	CoolRunner-II	Automotive CoolRunner-II
ISE Foundation	Yes	Yes	Yes
ISE Foundation with ISE Simulator	Yes	Yes	Yes
ISE WebPACK	Yes	Yes	Yes
ChipScope Pro and Serial I/O Toolkit	No	No	No
PlanAhead	No	No	No
Embedded Development Kit (EDK)	No	No	No
System Generator for DSP and AccelDSP	No	No	No

Using the Xilinx Product Registration and Download Site

This chapter describes the functionality of the Product Registration and Download Site. It includes the following sections:

- “User Types and Actions”
- “Accessing the Product Registration and Download Site”
- “Registering and Downloading Products”
- “Administering Accounts”

User Types and Actions

There are three user types for the Product Registration and Download Site, which are customer account administrator, end user, and evaluation user.

Note: Every account must have at least one customer account administrator, even if that account contains only one person.

Customer Account Administrator

An example of a typical customer account administrator is a CAD tools administrator. At least one customer account administrator is required for each account, but an account can have more than one customer account administrator.

A customer account administrator is the “Ship To” contact that is identified during the product ordering process. That person will receive an email with instructions on how to register and download the products that were purchased. It is important that the customer account administrator follow the link in the email, as it will ensure that he can obtain access to the purchased products.

Customer account administrators can manage multiple accounts, can assign account administration privileges to one or more end users of the account, and can act as an end user.

End User

An example of an end user is an engineer or design team member. An end user is added to the account by the customer account administrator and is entitled to a single seat of one or more of the ISE Design Suite products that have been purchased. End users can generate a Registration ID, download products electronically, and request an ISE™ Design Suite 10.1 DVD.

Evaluation User

An evaluation user is someone who would like to test-drive ISE Design Suite 10.1 products. Evaluation users can generate a Registration ID, download evaluation versions of products, and request an ISE Design Suite 10.1 DVD, at <http://www.xilinx.com/register>.

Note: A customer who is already licensed for ISE Design Suite products may test-drive other ISE Design Suite products by accessing their account on the Product Registration and Download Site and requesting one or more products to evaluate.

Accessing the Product Registration and Download Site

There are two ways to access the site.

- If you purchased products, follow the link included in your order confirmation email.
- If you want to evaluate ISE Design Suite 10.1 products, go to <http://www.xilinx.com/register>.

If you have not created an account, follow the instructions for creating an account. After signing in, you are taken to the Product Registration and Download main page.

Registering and Downloading Products

From the Product Registration and Download main page you begin the process to generate a Registration ID and download purchased, evaluation, or free ISE Design Suite products.

Figure 4-1: Select Products Screen

Note: If you are not a customer account administrator then you will not see the **Acct Admin** tab.

Registering 10.1 Products and Generating a Registration ID

To register 10.1 products and generate a Registration ID, perform the following steps:

1. Pull down the **Account** drop-down list and select your desired account. This selection will not be available if you are only entitled to evaluation or free products.
2. Pull down the **Release No.** drop-down list and select **10.1**. This selection will only be available if you are entitled to purchased products, since evaluation products are only available for the latest release. If you need older products, see [“Registering and Downloading Previous Releases”](#).

Your selected account and release number displays at the top of the **Select Products** section, which displays the products you can register and download.

3. Select the products you want to register.

Note: If you are not entitled to any purchased or licensed Xilinx products then you will not see the **Entitled Products** section.

4. Click the **Next** button.

A Registration ID is generated and an email confirmation will be sent to you. You are taken to the next page in the registration and download process, which displays your generated Registration ID. You will need the Registration ID during the installation process.

Downloading 10.1 Products

The screenshot displays the Xilinx website interface for downloading products. At the top, there is a navigation bar with links for Language, Documentation, Downloads, and Contact Us. Below this is a search bar with a 'Search' button and a 'Sign in to access account' link. The main navigation menu includes Technology Solutions, Product & Services, Market Solutions, Support, Online Store, and About Xilinx. The 'Support' menu is expanded, showing links for Troubleshoot, Contact Support, Downloads, Documentation, Quality, Answers, and Forums. The current page is titled 'Product Registration and Download' and shows the 'Software Reg' tab selected. The main content area is for 'ABC Design #123456 - Software Release 10.1'. It features a 'Download Products' section with a 'Download' button and a 'Registration ID: 111112222333334444455555'. Below this, there are 'Download Alternatives' for 'Download Files Individually' and 'Request a DVD'. The 'Included Products' section lists 'Entitled Products' (ISE Foundation 10.1, PlanAhead 10.1) and 'Evaluation Products' (Embedded Development Kit (EDK) 10.1). The 'Documentation' section provides links to release notes, installation guides, and 'Read Me First' documents in English and Japanese. A 'Previous' button is located at the bottom left of the main content area.

Figure 4-2: Download Products Screen

There are two methods available for downloading ISE Design Suite 10.1 products:

- WebInstall Client: downloads a single ~50 MB executable installer providing web based installation of all your included products.
- Files Individually: single-product, single-file downloads of your included products.

Downloading WebInstall Client

The WebInstall Client is the recommended method of installation. To download using this method, click the **DOWNLOAD** button.

Downloading Individual Products

To download products separately, follow these steps:

1. View the list of products by clicking the + button next to **Download Files Individually**.
2. Click the **Download** link next to the product you want to download.

The Download Manager opens.

3. Follow the Download Manager instructions.
4. Repeat the above steps for each product you want to download.

Ordering a DVD

To receive an ISE Design Suite 10.1 DVD, click the **Request a DVD** link in the **Download** section.

Note: If you purchased a product, you can receive the DVD free of charge. If you only registered evaluation or free (WebPACK) versions of the product, then there will be a charge for the DVD.

Accessing Documentation

To access the *ISE Design Suite 10.1 Release Notes and Installation Guide*, *What's New in ISE Design Suite 10.1*, and *Read Me First* documents, click on the provided links in the **Documentation** section.

Registering Additional Products

You can visit the Product Registration and Download Site at a later time to register and download additional ISE Design Suite products. The **Select Products** section displays all of your entitled, evaluation, and free products. A checkmark will be in the box beside the products already registered and the box will be empty for products not registered. After you add and register your new products, a new Registration ID will be regenerated for you. This new Registration ID comprehends the previously registered products plus the new products you just selected and registered. An updated registration confirmation email will be sent to you.

Registering and Downloading Previous Releases

If you have purchased products of version 9.2 or earlier, you can register and download them using the Product Registration and Download Site. To register and download the older products, perform the following steps:

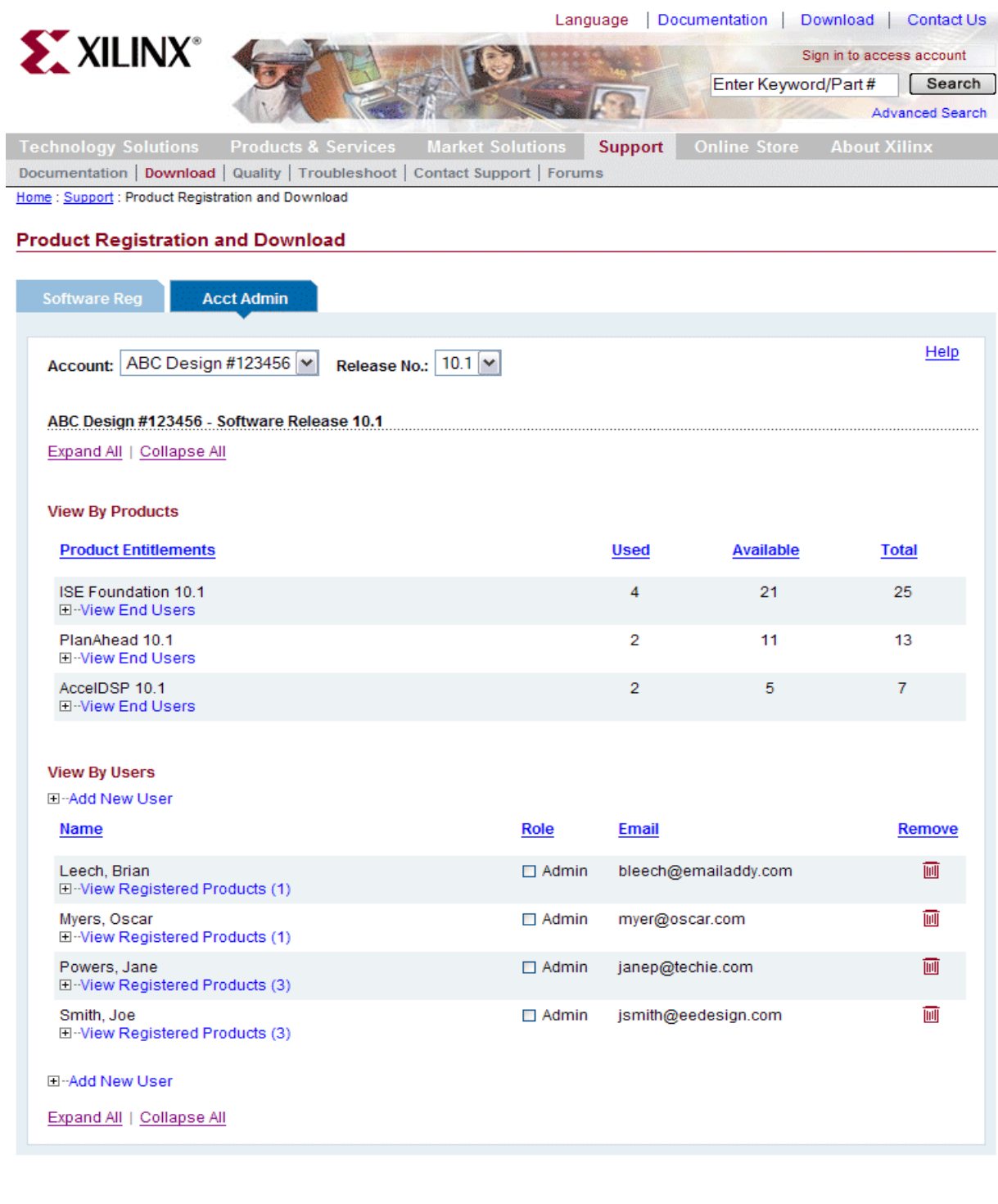
1. Pull down the **Account** drop-down list and select your desired account. This selection will not be available if you are only entitled to evaluation or free products.
2. Pull down the **Release No.** drop-down list and select the desired release.

Your selected account and release number displays at the top of the **Select Products** section, which displays the products you can register and download.

3. Click the link of the product you want to register.
A page appears that gives you the option to register your product and displays the available downloads associated with the product.
4. Click the **Get REG ID** button.
The Registration ID appears. You will need the Registration ID during the installation process.
5. In the **Available Downloads** section, click the link of the documentation or the single-product single-file download you want.
6. Repeat the above steps for each product you want to register and download.

Administering Accounts

To access customer account administration activities, click the **Acct Admin** tab on the main **Product Registration and Download** page.



The screenshot shows the Xilinx website header with navigation links: Language, Documentation, Download, Contact Us. A search bar is present with the text "Enter Keyword/Part#" and a "Search" button. Below the header is a navigation menu with tabs: Technology Solutions, Products & Services, Market Solutions, Support, Online Store, About Xilinx. The "Support" tab is active, and the breadcrumb trail is "Home : Support : Product Registration and Download".





The main content area is titled "Product Registration and Download" and has two tabs: "Software Reg" and "Acct Admin". The "Acct Admin" tab is selected. The account information is displayed as "Account: ABC Design #123456" and "Release No.: 10.1". There is a "Help" link.

Below the account information, there is a section for "ABC Design #123456 - Software Release 10.1" with "Expand All" and "Collapse All" links.

The "View By Products" section contains a table with the following data:

Product Entitlements	Used	Available	Total
ISE Foundation 10.1 View End Users	4	21	25
PlanAhead 10.1 View End Users	2	11	13
AccelDSP 10.1 View End Users	2	5	7

The "View By Users" section includes an "Add New User" link and a table with the following data:

Name	Role	Email	Remove
Leech, Brian View Registered Products (1)	<input type="checkbox"/> Admin	bleech@emailaddy.com	
Myers, Oscar View Registered Products (1)	<input type="checkbox"/> Admin	myer@oscar.com	
Powers, Jane View Registered Products (3)	<input type="checkbox"/> Admin	janep@techie.com	
Smith, Joe View Registered Products (3)	<input type="checkbox"/> Admin	jsmith@eedesign.com	

At the bottom of the "View By Users" section, there is an "Add New User" link and "Expand All" and "Collapse All" links.

Figure 4-3: Account Administrator Screen

To perform administrator activities, do the following steps:

1. Pull down the **Account** drop-down list and select your desired account.
2. Pull down the **Release No.** drop-down list and select your desired release.

Your selected account and release number displays at the top of the section detailing product usage.

Product Usage

Product usage is shown differently in two sections, **View By Products** and **View By Users**.

View By Products

The **View By Products** section enables you to determine which users have registered seats of software on a product-by-product basis. It displays:

Product Entitlements - name of the ISE Design Suite products you purchased

Used - number of seats registered

Available - number of seats available for registration

Total - number of seats purchased

You can sort in ascending or descending order by clicking on the respective column header. An arrow shows how rows are sorted.

To see who is registered for each product and the associated Registration ID, click the **View End Users** link below the product name.

View By Users

The **View By Users** section enables you to determine which seats of products a user has registered on a user-by-user basis. It displays:

Name - first and last name of each user

Role - role of the user (when the checkbox next to **Admin** is marked, it designates the user as an Administrator)

Email - email address

You can sort in ascending or descending order by clicking on the respective column header. An arrow shows how rows are sorted.

To see what products are registered to each user and the Registration IDs, click the **View Registered Products()** link. The number of products registered to a user is displayed in parenthesis, ().

If a user has not registered a product, the **Name** will appear as **New User**, **Role** will appear as designated, and the user's **Email** address will be present, but the **View Registered Products()** link will not be present.

Adding and Removing Users

Adding Users

By adding a user to an account, the new user will be able to register a seat of software and have download access to any of the products within the account.

To add users, perform the following steps:

1. Click the **Add New User** link.
The action area for adding a new user appears.
2. Enter the user's email address.
3. If you want the user to have administrator privileges, select **Admin - Designate user as administrator**.
4. If you want to add additional users, click the **Add Another User's Email** link.
A text box for the entry of an additional new user will appear each time the link is selected.
5. Click **Submit**.

Collapsing the **Add New User** action area will remove the area and cancel the operation.

Removing Users

To remove users, click the **Remove** trash can icon displayed next to the user's email address.

Modifying User Roles

To make a user an administrator, select **Admin** in the **Role** column in the **View By Users** section.

To remove administrator privileges from a user, deselect **Admin** in the **Role** column in the **View By Users** section.

Installation

This chapter describes how to install ISE™ Design Suite 10.1, as well as ModelSim Xilinx Edition 6.3c. It includes the following sections:

- [“Installing ISE Design Suite 10.1 - Overview for All Platforms”](#)
- [“Platform Specific Instructions”](#)
- [“Installation Flow”](#)
- [“Installing Standalone Programming Tools \(Lab Environment\)”](#)
- [“Network Installations”](#)
- [“Accessing ISE Design Suite 10.1 Documentation”](#)
- [“Obtaining Software Updates”](#)
- [“Uninstalling ISE Design Suite 10.1”](#)
- [“Installing ModelSim Xilinx Edition 6.3c Software \(MS Windows Only\) - Optional”](#)

Installing ISE Design Suite 10.1 - Overview for All Platforms

This section explains the installation process for all platforms for ISE Design Suite 10.1. Installation for each platform should be preceded by these steps:

1. Ensure that you have appropriate privileges on the system the software will be installed on. Some components, such as programming cable device drivers, require administrator-level permissions.
2. Close all programs before you begin installation.
3. Get the Registration ID number available from the Product Registration and Download site. See [Chapter 4, “Using the Xilinx Product Registration and Download Site”](#) for more information about obtaining a registration ID.
4. Ensure that your system meets the requirements described in [Chapter 3, “Operating System and Architecture Support.”](#)
5. Check [Chapter 2, “Known Issues for ISE Design Suite Products”](#) for any installation issues that pertain to your system or configuration.

After installation, if it has not already been done by the installer, manually set your XILINX Environment Variable before using the ISE Design Suite 10.1 software. See [“Platform Specific Instructions”](#) for more information

Platform Specific Instructions

This section explains the platform-specific details of the ISE Design Suite 10.1 installation.

MS Windows

This section describes how to start the installation for MS Windows.

To Start Installation

The method of starting the installation depends on how you have obtained the installation program. See the previous chapter for details on your options.

- a. If you have downloaded either the WebInstall Client, or have used the “Download Files Individually” option for a particular product, decompress that file and run the `setup.exe` program contained therein.
- b. If you have ordered and received an ISE Design Suite 10.1 DVD, load the DVD. If you have the auto-run feature of your DVD drive enabled, the setup program should start automatically. If it does not, browse to the DVD in Windows Explorer and run the `setup.exe` found at the root of the disc.

Linux

This section describes how to start the installation and set the environment variables for Linux.

To Start Installation

The method of starting the installation depends on how you have obtained the installation program. See the previous chapter for details on your options.

- a. If you have downloaded either the WebInstall Client, or have used the “Download Files Individually” option for a particular product, decompress that file and run the `setup` program contained therein.
- b. If you have ordered and received an ISE Design Suite 10.1 DVD, load the DVD. Click the setup file in your file manager or browse to the root of your DVD drive and type `./setup`.

To Set Environment Variables

At the completion of the installation process, the installation program creates an environment variables file for you. Go to your XILINX installation directory and type **`source settings32.(c)sh`** or **`source settings64.(c)sh`** appropriate to your shell.

To set your environment variables manually or from within your setup script, it is recommended that you copy the settings from the appropriate file for your Operating System, as listed above. Xilinx environment variables settings are specific to each Operating System platform.

Installation Flow

The following section describes the screens that you will encounter during the installation process.

Before you begin, you will need to obtain a Registration ID number. See [Chapter 4, “Using the Xilinx Product Registration and Download Site”](#) for details about product registration and account administration.

Note: For each of the following installation steps, you can click on the text of any item that has a checkbox next to it to obtain more information, which is displayed in the “Description of Highlighted Item Above” area near the bottom of the screen.

Welcome

The following figure shows the welcome screen:

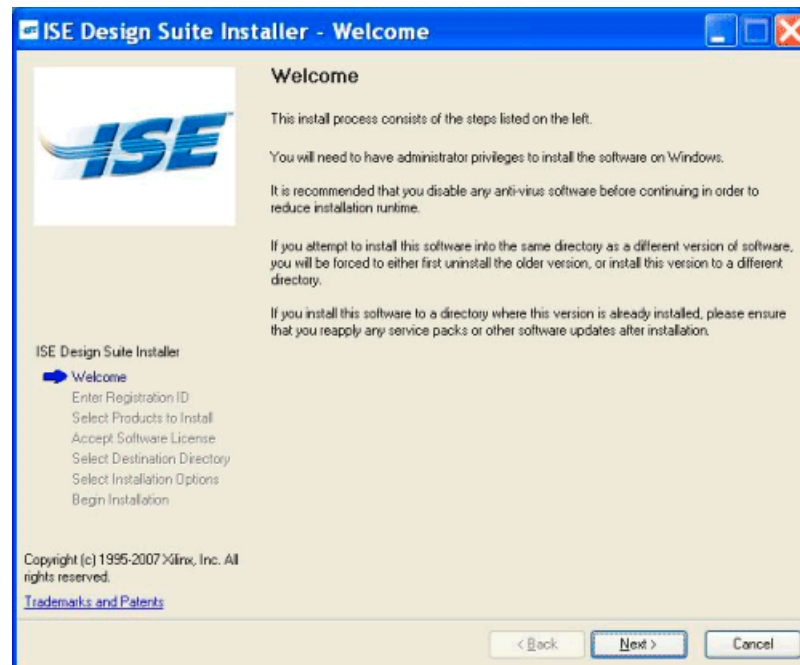


Figure 5-1: ISE Design Suite 10.1 Installation - Welcome Screen

Registration

Once you have obtained a Registration ID, enter it into the box provided as shown in the figure below.

Note: It is suggested that you use the copy and paste functionality of your system's operating system to copy the Registration ID from your web browser into the box. If you manually type it in, be sure to verify that you enter all characters and numbers correctly - do not confuse the number "1" for the character "l", etc.

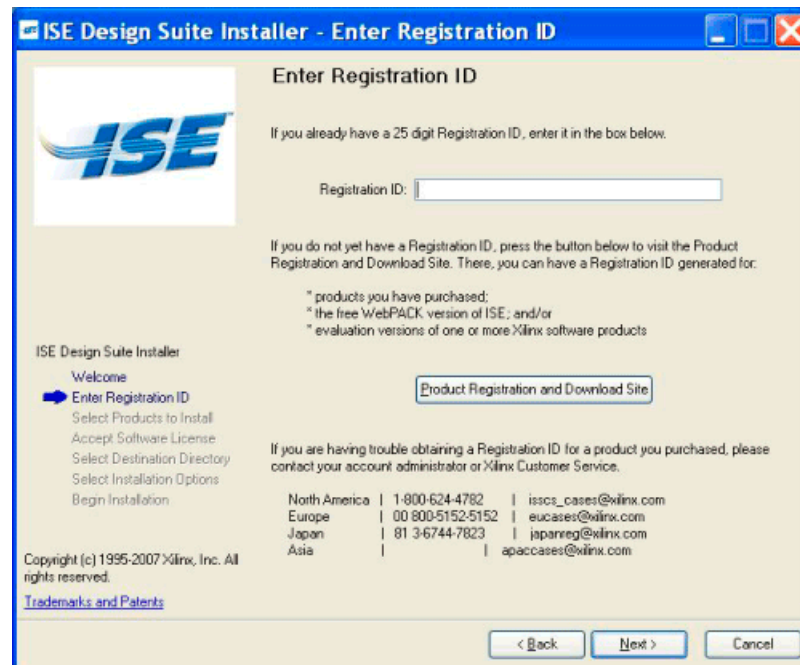


Figure 5-2: ISE Design Suite 10.1 Installation - Registration Screen

Selecting Xilinx Products

The following figure shows the screen that allows you to select the Xilinx Products you wish to install. (Only the products that you are entitled to install will be displayed.)

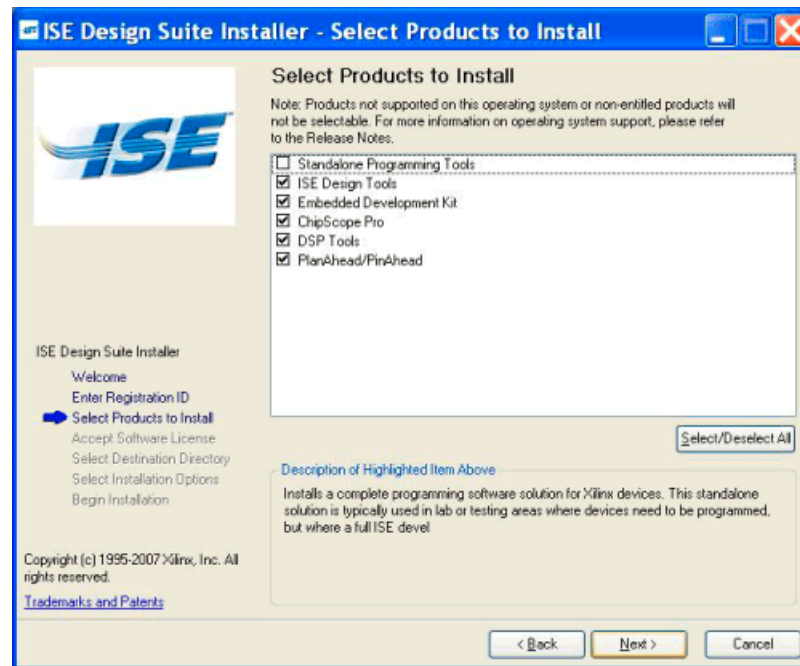


Figure 5-3: ISE Design Suite 10.1 Installation - Select Xilinx Products Screen

Accept Software Licenses

The following figures shows the two Accept Software License Agreement Screens you will have to click through. To proceed, click the **I accept the terms of this software agreement** checkbox and click **Next** on each screen.

Note: The order that the two screens are presented may not match that of the screenshots below.

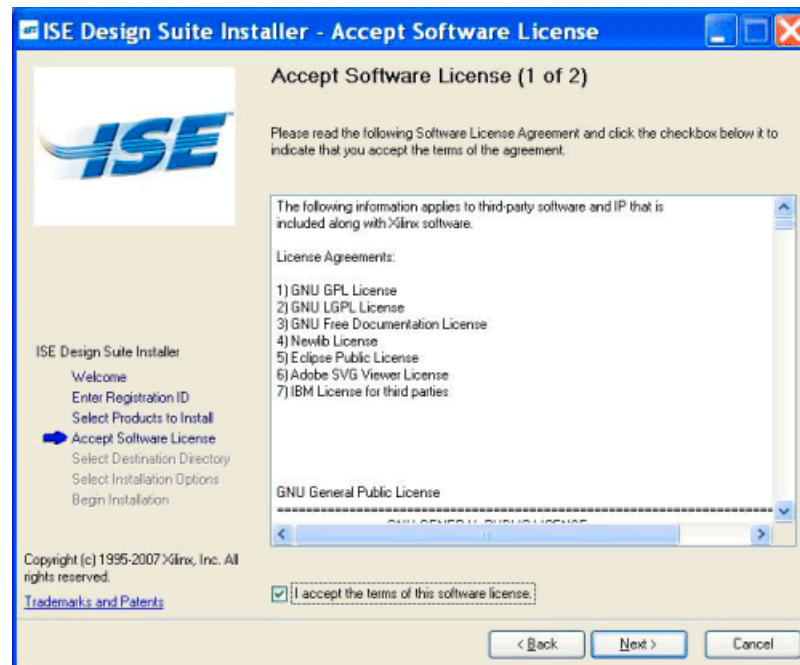


Figure 5-4: ISE Design Suite 10.1 Installation - First Accept Software License Screen

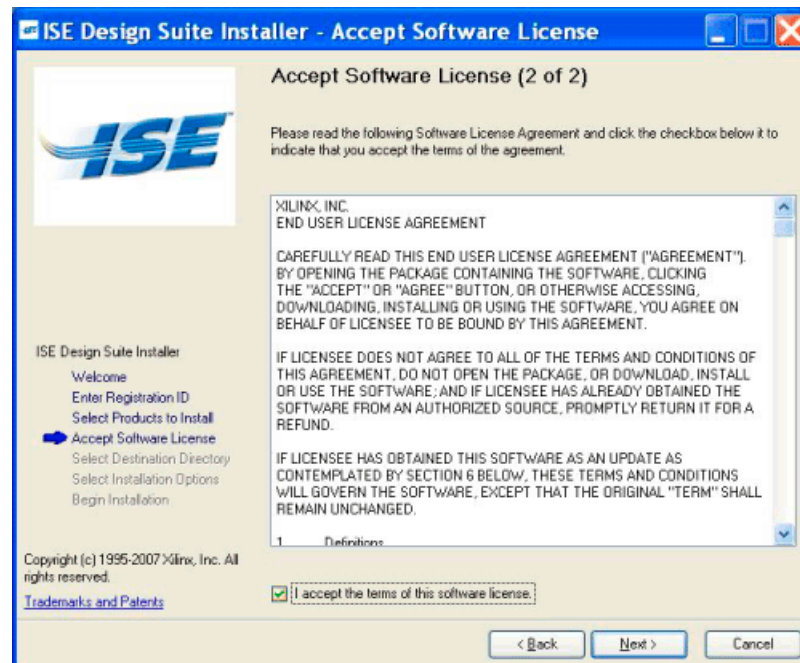


Figure 5-5: ISE Design Suite 10.1 Installation - Second Accept Software License Screen

Select Destination Directory

In the Select Destination Directory screen, select the directory where you want the software installed and enter a name for the Program Folders list. By default, the directory is set to C:\Xilinx\10.1 and the Program Folders Name is listed as Xilinx ISE Design Suite 10.1.

The following figure shows the Select Destination Directory Screen:

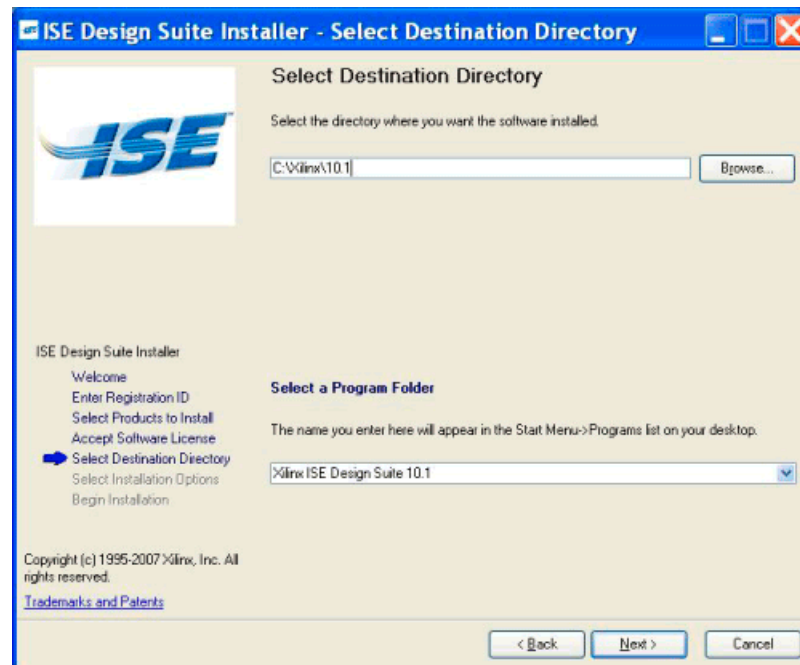


Figure 5-6: ISE Design Suite 10.1 Installation - Select Destination Directory Screen

Select Installation Options

There are three Select Installation Options screens which allow you to select Xilinx modules and devices, set environment variables, and choose additional install options.

Selecting Xilinx Modules and Devices

The following figure shows the screen from the Installation Software that allows you to select Xilinx products, modules, and Device Families you wish to install:

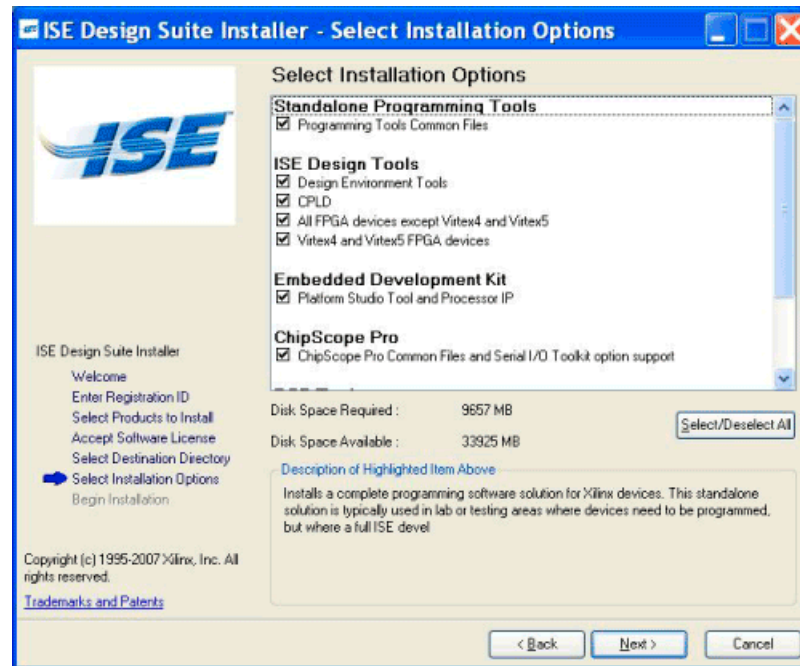


Figure 5-7: ISE Design Suite 10.1 Installation - Xilinx Modules and Devices

Set Environment Variables

The installer provides an option to have the environment variables required by each Xilinx Design Suite product, if any, set automatically to appropriate values.

The following figure shows the Select Installation option screen for setting environment variables:

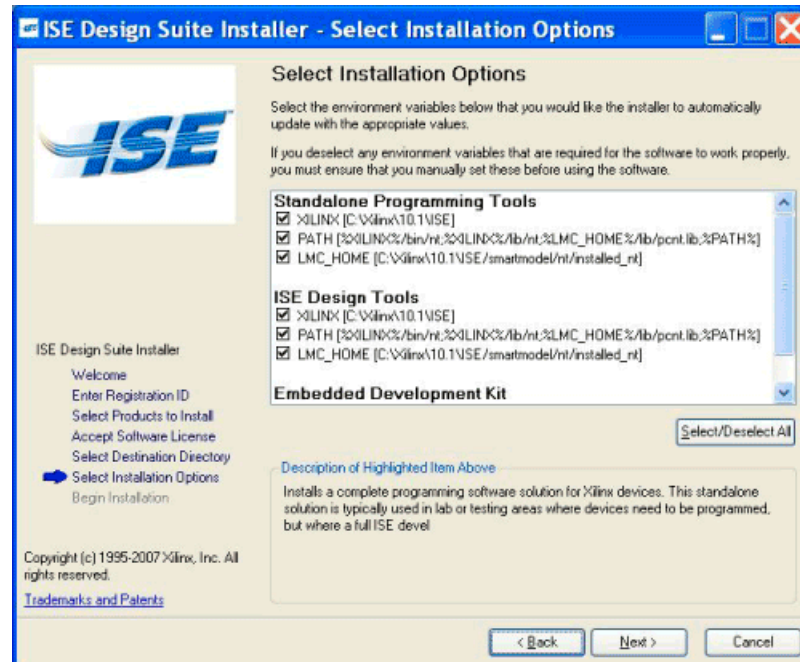


Figure 5-8: ISE Design Suite 10.1 Installation - Select Environment Variables Screen

Selecting Additional Options

Additional options can be selected from this screen. The following figure shows an example of how this screen will look:

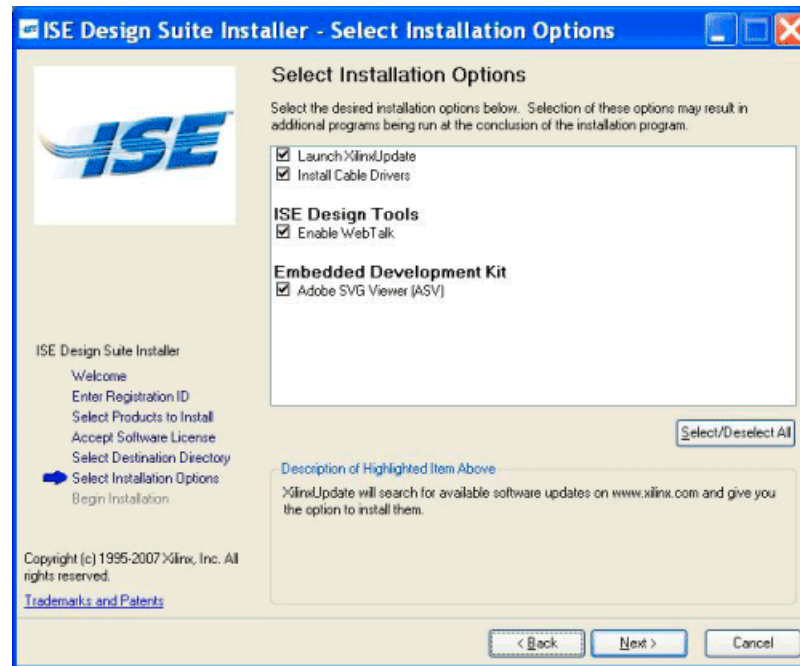


Figure 5-9: ISE Design Suite 10.1 Installation - Select Installation Options Screen

Begin Installation

The Begin Installation Screen gives you a summary of the tools, products, and options to be installed. If you want to change anything, select the **Back** button and make desired changes. To begin the installation, click **Install**. The following figure shows the Begin Installation screen:

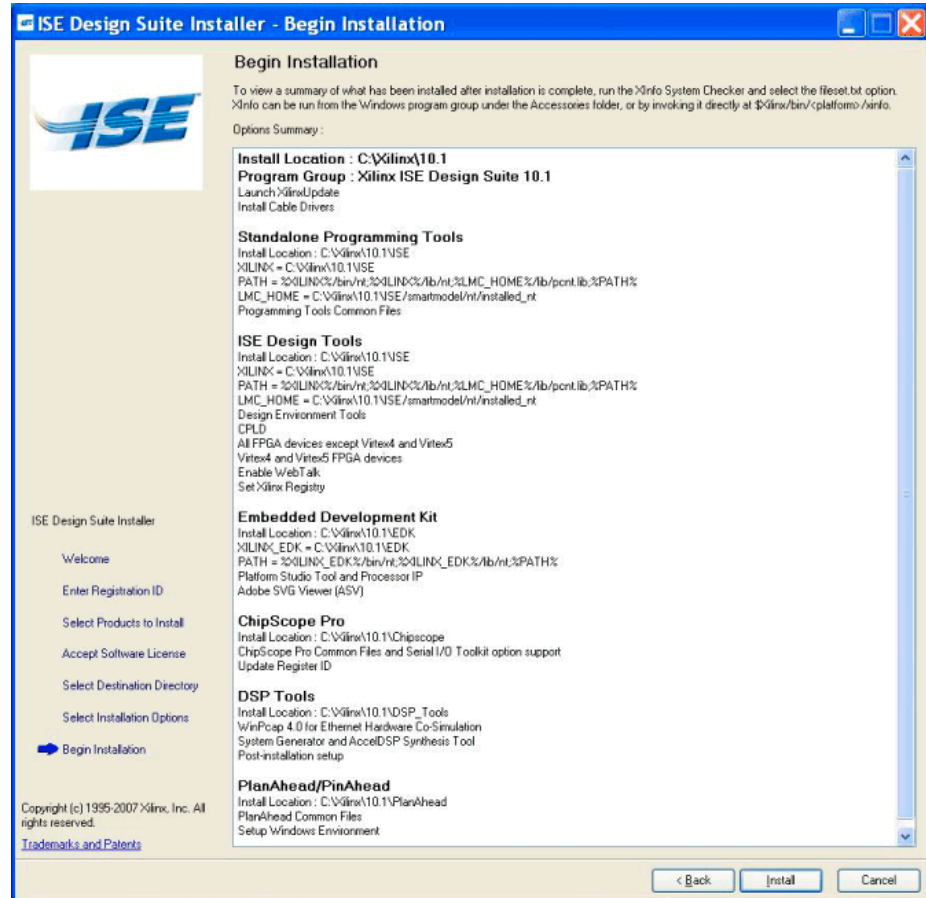


Figure 5-10: ISE Design Suite 10.1 Installation - Begin Installation Screen

Installing Standalone Programming Tools (Lab Environment)

ISE 10.1 allows you to install a subset of the software just for programming all Xilinx devices and formatting programming files. This option allows users to set up a PC in a bench-top or "lab" environment for programming devices without having to install the full version of the software.

To install:

1. In the Enter Registration ID screen, leave the Registration ID field blank and click **Next**
2. In the Select Products to Install screen, select **Standalone Programming Tools** and continue the installation process.

Network Installations

Installing software to a network location provides a way for client machines to access the software by pointing to it on the network drive. To run the software on the network, the client machines must be set up correctly to ensure that the environment variables, registry, and program groups all point to the network. The following sections describe the procedure for network setups.

UNIX Clients

Each software user must source the **settings32.(c)sh** or **settings64.(c)sh** (whichever is appropriate for your OS) from the \$XILINX area where the software is installed. This points the Xilinx environment variable, path and LD_LIBRARY_PATH to the installed location.

3. To run the software applications from a remotely installed location, you must also run an X Windows display manager, and you must include a DISPLAY environment variable. Define DISPLAY as the name of your display. DISPLAY is typically unix:0.0. For example, the following syntax allows you to run the software on the host named bigben and to display the graphics on the local monitor of the machine called mynode:

```
setenv DISPLAY mynode:0.0
xhost = bigbenPC Clients
```

MS Windows Clients

1. Install the ISE software tools to a PC network server. Make sure that your users know the location of the software tools and have access to the installation directory, and that they have Administrator privileges for the following steps.
2. From the local client machine, browse to the following directory:
network_install_location/bin/nt and run the program *setXenv.bat*.
Running this program sets up the environment and registry settings needed to run the Xilinx tools from the remote location.
3. From the client machine, launch the ISE tools via the Program Group or Desktop shortcuts, or by running the applications on the network drive.

Installing to a Mounted Network Drive

When installing to a mounted network drive without a subdirectory for Xilinx software. Xilinx software is designed to be installed in a directory under ROOT (typically C: \Xilinx). The installer presents this option normally when installing to a local driver, but when installing to a mounted network drive, a subdirectory might not be defined and it appears to the Installer as if it is installing to a ROOT directory.

To work around this issue, define your target installation directory as "\\Xilinx" under the network mount point (For example: "N:\Xilinx").

Accessing ISE Design Suite 10.1 Documentation

Documentation for the products that are part of ISE Design Suite 10.1 can be found at http://www.xilinx.com/support/software_manuels.htm.

Obtaining Software Updates

The following sections describe the ways to obtain software updates through XilinxUpdate and the Download Center.

XilinxUpdate

The XilinxUpdate tool is the preferred method of obtaining software updates. It provides the following features:

- Compares the latest version of software updates available on <http://www.xilinx.com/support> with what you have installed, and notifies you if a newer version is available.
- Downloads and installs the update in one step.
- Downloads only the files necessary to update your installation.

By default, XilinxUpdate automatically runs at the conclusion of the ISE Design Suite 10.1 installation process. In addition, it can run after installation in any of the following ways:

- Automatic periodic checks at Project Navigator startup time.
- **Help > XilinxUpdate...** from Project Navigator.
- **Start > Xilinx ISE Design Suite 10.1 > ISE > Accessories > XilinxUpdate**

Note: If you unchecked the option of running XilinxUpdate during the initial software installation, it is strongly recommended that you run it as soon as is practical, in order to ensure that you have the latest updates and enhancements.

The following figure displays the XilinxUpdate Screen:

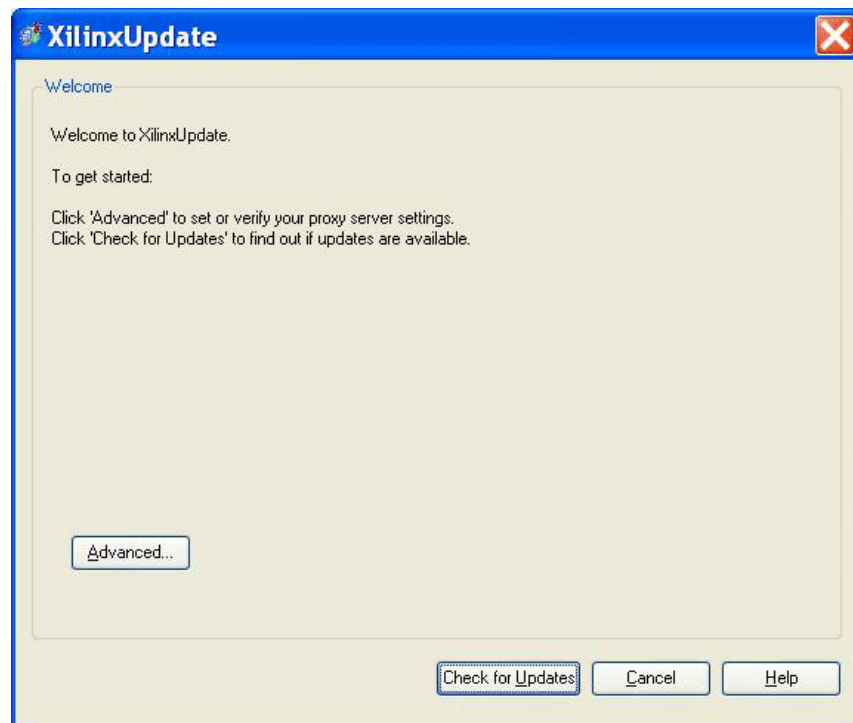


Figure 5-11: XilinxUpdate

The **Edit > Preferences** menu selection in Project Navigator allows you to control the frequency of the automatic checks that happen at Project Navigator startup time

XilinxUpdate Network Installations

By default, the **Automatically check for software updates** option at Project Navigator startup is enabled on the machine used to install the ISE software to the network location. All clients pointing to this network location have this option disabled by default. Client users have the option of enabling this option (**Edit > Preferences > XilinxUpdate** from Project Navigator) and also running manual checks.

Note: To perform a software update installation, you must have write permissions for the \$XILINX installation directory.

Download Center

Service Packs and other software updates for all platforms are regularly made available on the Download Center at: <http://www.xilinx.com/support/download/>.

Uninstalling ISE Design Suite 10.1

MS Windows

The following sections describe the how to uninstall the products that comprise ISE Design Suite 10.1 on MS Windows

To uninstall any Xilinx product, select the Uninstall item from that product's Start Menu folder. For instance, to uninstall ISE, select **Start > Programs > Xilinx Design Suite 10.1 > ISE > Uninstall Xilinx ISE**.

Alternatively, you can use the appropriate uninstall entry in the Add or Remove Programs dialog, accessed via the Windows Control Panel. Possible entries include:

- Xilinx ChipScope Pro 10.1
- Xilinx DSP Tools (System Generator, AccelDSP) 10.1
- Xilinx EDK 10.1
- Xilinx ISE 10.1
- Xilinx PlanAhead 10.1

Depending on what you have installed, some ancillary applications might need to also be uninstalled, e.g.

- WinPCap 4.0 (optional component of DSP Tools)

Linux

To uninstall a Xilinx Design Suite 10.1 product, you need to remove the appropriate product directory that is found in the Design Suite root directory.

Before uninstalling, be sure you have moved any project files you want to keep outside your Xilinx installation directory structure, or it will be deleted.

Installing ModelSim Xilinx Edition 6.3c Software (MS Windows Only) - Optional

If you have already purchased ModelSim Xilinx Edition (MXE) 6.3c, you will receive a license file after registering the MXE software after installation. For complete product and purchasing information for MXE, contact your local Xilinx representative or visit the following Xilinx Website:

http://www.xilinx.com/ise/optional_prod/mxe.html

To install MXE software, perform the following steps:

1. Insert the ModelSim Xilinx Edition CD.
2. If the DVD does not auto run, select **Start > Run > D:\setup.exe**.
3. Follow the instructions to complete the installation.
4. Follow the instructions provided to complete a license request. A license file will be e-mailed to you.
5. Put the license in a location pointed to by the LM_LICENSE_FILE variable as follows:

```
set LM_LICENSE_FILE=<path_to_license>\license.dat
```

You can also cut and paste the contents into your existing license.dat file.

Windows Vista

MXE 6.3c is not officially supported on Window Vista Machines by Mentor. There is however, a workaround that can be used on Vista machines which might allow you to run MXE 6.3c using either a USB dongle or Ethernet ID license. Please search for solution record with keyword "MXE 6.3c and VISTA" for more information. Parallel port dongle licenses are not supported on Windows Vista machines.

Product-Specific Installation, Registration, and Usage Notes

This chapter consists of product-specific sections, each of which specifies details that must be considered when installing and using each of the products contained in ISE™ Design Suite 10.1.

This chapter contains the following sections:

- “Integrated Software Environment (ISE)”
- “CORE Generator Intellectual Property”
- “ChipScope Pro and ChipScope Pro Serial I/O Toolkit”
- “Embedded Development ToolKit (EDK)”
- “DSP Tools (AccelDSP and System Generator) and PlanAhead/PlanAhead Lite”

Integrated Software Environment (ISE)

This section contains the following:

- “System Requirements”
- “Equipment and Permissions”
- “ISE Software Documentation”

System Requirements

This section provides information on supported operating systems, Web browser, cable installation, and system memory requirements.

Cable Installation Requirements

Platform Cable USB and Parallel Cable IV are high-performance cables that enable Xilinx design tools to program and configure target hardware.

To install Platform Cable USB, a system must have at least a USB 1.1 port. (For maximum performance, Xilinx recommends using Platform Cable USB with a USB 2.0 port.) To install Parallel Cable IV, a system must have a parallel port connector and support parallel port communication.

Cables are officially supported on the 32-bit and 64-bit versions of the following operating systems: Windows XP Professional, Windows Vista Business, Redhat Linux Enterprise, and SUSE Linux Enterprise 10. Additional platform specific notes are as follows:

- All Linux: Root privileges are required to install cable drivers on Linux
- SUSE Linux Enterprise 10: The fxload software package is required to ensure correct Platform Cable USB operation. The fxload package is not automatically installed on SUSE Linux Enterprise 10 distributions, and must be installed by the user or System Administrator.
- Linux LibUSB support: Preliminary support for Platform Cable USB based upon the LibUSB package is now available from the Xilinx website. See Answer Record # 25249 for details.

For additional information regarding Xilinx cables, refer to the following documents:

- USB Cable Installation Guide (UG344)
- Platform Cable USB Data Sheet (DS300)
- Parallel Cable IV Data Sheet (DS097)

System Memory Recommendations

This section gives the RAM and swap space needed to run ISE Design Suite 10.1 on your system.

While the following table lists the system recommendations for typical designs, the unique characteristics of each design affect the system resources required. Design complexity and constraints affect whether the design can be implemented using more or less memory. Each designer must monitor the system resources and adjust the systems resources, if necessary. For more information on memory recommendations, see: <http://www.xilinx.com/ise/products/memory.htm>.

Operating Systems and Available Memory

The MS Windows and Linux[®] operating system (OS) architectures have limitations on the maximum memory available to a Xilinx program. Users targeting the largest devices and most complex designs may encounter this limitation. ISE Design Suite 10.1 has optimized memory and enabled software support for applications to increase RAM memory available to Xilinx software.

Windows XP Professional 32-bit

Xilinx applications are enabled to take advantage of the memory increase feature on Windows 32-bit. You must then modify Windows setting to get access to this larger memory.

The standard Windows OS architecture limits the maximum memory available to a Xilinx process to 2 Gigabyte. In Windows XP Professional, Microsoft created an option to support the ability of an application to address 3 Gigabyte of RAM. Xilinx ISE applications have built-in support for this option. To take advantage of this capability, you must also modify your Windows XP OS to enable this feature, which requires that you modify your **boot.ini** file by adding a “/3GB” entry to the end of the “startup” line.

Before enabling 3GB support for Xilinx applications, please read Microsoft Knowledge Base Article #328269 at <http://support.microsoft.com/?kbid=328269>. If you upgrade your computer to Windows XP Service Pack 1 (SP1) and you are using the /3GB switch,

Windows may not restart without a patch from Microsoft. Please see (Xilinx Answer 17905) for more information.

Additionally, before making this change, please read:

- Microsoft Bulletin Q17193 <http://support.microsoft.com/default.aspx?scid=kb;en-us;Q17193>, which contains information on “Application Use of 4GT RAM Tuning”.
- Microsoft Bulletin Q289022 <http://support.microsoft.com/default.aspx?scid=kb;en-us;q289022>, contains instructions for editing your “boot.ini” file.

Linux

ISE Design Suite 10.1 supports both Linux 32-bit and Linux 64-bit, the latter allows greater memory allocation. Xilinx has documented Linux kernel modifications that allow a Xilinx application to address over 3 GB of memory.

For 32-bit Red Hat Enterprise Linux systems, the operating system can use the hugemem kernel to allocate 4GB to each process. More information can be found on the Red Hat support site: <http://www.redhat.com/docs/manuals/enterprise/>

ISE supports the 64-bit version of Red Hat Enterprise Linux, which allows greater memory allocation out of the box.

Equipment and Permissions

The following table lists related equipment, permissions, and network connections.

Table 6-1: Equipment and Permissions Requirements

Item	Requirement
Directory permissions	Write permissions must exist for all directories containing design files to be edited.
Monitor	16-bit color VGA with a minimum recommended resolution of 1024 by 768 pixels.
Drive	You must have a DVD-ROM for ISE Design Suite (if you have received a DVD, rather than downloading from the web), and CD-ROM for MXE on your system.
Ports	To program devices, you must have an available parallel, or USB port appropriate for your Xilinx programming cable. Specifications for ports are listed in the documentation for your cable. Note: Installation of the cable driver software requires Windows XP Pro SP1 (or later), or Windows Vista Business. If you are not using one of these operating systems, the cables may not work properly.

Note: X Servers/ Remote Desktop Servers such as Exceed, ReflectionX, and XWin32 are not supported.

Network Time Synchronization

When design files are located on a network machine, other than the machine with the installed software, the clock settings of both machines must be set the same. These times must be synchronized on a regular basis for continued proper functioning of the software.

ISE Software Documentation

Context-Sensitive Help

Context-sensitive online Help is available for most Xilinx ISE programs that are available with a graphical user interface (GUI). From Project Navigator, select **Help > Help Topics** to access the online Help.

Software Manuals

Detailed ISE Software Manuals are included as part of the software installation. After you install the software, you can select the **Help > Software Manuals** command in Project Navigator to access the Software Manuals collection.

Note: If you do not already have Adobe Acrobat Reader installed, you must do so to view the installed documentation.

Software Manuals Online

ISE Software Manuals are also available on the Xilinx Website. Refer to the ISE Design Suite 10.1 documentation collection at http://www.xilinx.com/support/software_manuals.htm.

CORE Generator Intellectual Property

This section contains the following information:

[“Installation Instructions”](#)

[“Release Notes”](#)

Installation Instructions

The first Intellectual Property (IP) Update for ISE 10.1 CORE Generator™ software, IP_10.1.0, is integrated into the initial ISE Design Suite 10.1 software release and is automatically installed with it.

Subsequent ISE 10.1-compatible updates are cumulative and will be advertised on the Xilinx Intellectual Property Center, <http://www.xilinx.com/ipcenter>, as they become available. These future updates will be downloadable from the [Xilinx Download Center](#), and will also usually require installation of specific ISE Service Packs.

Some IP cores might also require license purchase or installation of a license key to activate full access. IP-specific requirements along these lines are documented on the product page for each core in the [Xilinx Intellectual Property Center](#).

Release Notes

General information about this release can be found at:

http://www.xilinx.com/ipcenter/coregen/updates_101_ip0.htm,

and a complete listing of the IP included in this release can be found at:

http://www.xilinx.com/ipcenter/coregen/101_0_datasheets.htm

For IP-specific release note information related to IP Core Updates shipped in the ISE Design Suite 10.1 software release as well as updates shipped in earlier ISE releases, please refer to the IP Release Notes Guide:

http://www.xilinx.com/support/documentation/user_guides/xtp025.pdf

The ISE 10.1 CORE Generator initial IP release includes new and updated IP in the following categories:

- Audio, Video, & Image Processing (Color Space Converters)
- Automotive (CAN, MOST, FlexRay)
- Communications and Networking (Error Correction, Ethernet, SPI-4.2, Wireless)
- Debug & Verification (ChipScope Pro)
- Digital Signal Processing (Filters, Transforms, Waveform Synthesis)
- FPGA Features & Design (Aurora and RocketIO™)
- Memories and Storage (Memory Interface (MIG), Block Memory and Distributed Memory Generators)
- Standard Bus Interfaces (PCI Express, PCI, RapidIO)

ChipScope Pro and ChipScope Pro Serial I/O Toolkit

This section contains the following:

[“System Requirements”](#)

[“Architecture Support”](#)

[“Registering and Enabling ChipScope Pro Serial I/O Toolkit”](#)

System Requirements

This section provides information on cable installation and system memory requirements.

Cable Installation Requirements

For Linux, cable drivers require root privileges to install. To install platform cable USB for USB 2.0 port, you must have WinXP SP2. The platform cable USB is a high-performance download cable that attaches to user hardware for use with the ChipScope Pro Analyzer tool for device programming, configuring, and debugging.

System Memory Recommendations

The ChipScope Pro Analyzer requires 1024 mega bytes of system memory. The ChipScope Pro Core Inserter tool has the same requirements as ISE. For more information on ISE memory recommendations, see: <http://www.xilinx.com/ise/products/memory.htm>.

Architecture Support

The Agilent Trace Core 2 (ATC2) that is included in the ChipScope Pro 10.1 product supports the following architecture families:

- Virtex™/-II/-II Pro/-II Pro X/-4/-5
- QPro Virtex™/-II Pro Hi-Rel
- QPro Virtex™/-II Rad-Hard
- Spartan™-3/-3E/-3A/-3AN/-3ADSP
- Automotive Spartan™-3/-3E

Registering and Enabling ChipScope Pro Serial I/O Toolkit

The registration and download flow for the ChipScope Pro Serial I/O Toolkit add-on feature is slightly different than the ChipScope Pro process:

1. If you are entitled to the ChipScope Pro Serial I/O Toolkit 10.1 product, on the **Select Products** screen, select the ChipScope Pro Serial I/O Toolkit 10.1 product from the list of **Entitled Products** section. If you are not entitled to the ChipScope Pro Serial I/O Toolkit 10.1 product, you can select the ChipScope Pro with ChipScope Pro Serial I/O Toolkit License Key from the **Evaluation/Free Products** section to get a free 60-day license to both ChipScope Pro and the ChipScope Pro Serial I/O Toolkit add-on features.
2. Click the **Next** button.
3. On the **Download** page, note the Registration ID that was generated.
4. If ChipScope Pro has not already been installed, follow the instructions in the previous section. If it has been installed, go to the next session.

Note: There is no installer required to download and install the ChipScope Pro Serial I/O Toolkit add-on feature. The program and data files that make up the ChipScope Pro Serial I/O Toolkit add-on feature are installed at the same time that the ChipScope Pro product is installed.

5. Enable the ChipScope Pro Serial I/O Toolkit by entering the Registration ID noted in Step 3 above into the ChipScope Pro Update Software Product Configuration tool:

On Windows: **Start > All Programs > Xilinx ISE Design Suite 10.1 > ChipScope Pro > Accessories > Update Software Product Configuration**

Note: Do not use the Update Software Product Configuration utility that is located under other ISE Design Suite 10.1 product folders (such as ISE) as this will not correctly enable the ChipScope Pro Serial I/O Toolkit add-on feature.

On 32-bit Linux: \$CHIPSCOPE/bin/lin/setup -autoupgrade

On 64-bit Linux: \$CHIPSCOPE/bin/lin64/setup -autoupgrade

The ChipScope Pro Serial I/O Toolkit add-on feature is now ready for use.

Embedded Development ToolKit (EDK)

This section contains the following:

- [“EDK Contents”](#)
- [“EDK Requirements”](#)
- [“Xilinx EDK Development Boards”](#)
- [“Notes on Installing EDK on MS Windows”](#)
- [“Notes on Installing EDK on Linux”](#)
- [“EDK Installation Directory Structure”](#)
- [“EDK Documentation”](#)
- [“EDK Supported Software Versions”](#)
- [“Other EDK Information”](#)
- [“About Example User Constraint Files”](#)

EDK Contents

The components of EDK are:

- Hardware IP for the Xilinx embedded processors and their peripherals
- Drivers, Libraries, and a MicroKernel for Embedded Software Development
- Xilinx Platform Studio (XPS) tools
- Software Development Kit (SDK), Eclipse-based IDE
- GNU Compiler and Debugger for C development for MicroBlaze™ and PowerPC® (405 and 440) processors
- Documentation
- Sample projects

Except for these release notes, EDK does not include printed documentation material. Refer to the [“EDK Documentation”](#) section for a list of documents available. Also not included but available as separate products are FPGA development boards and the Xilinx FPGA implementation tools package, ISE™ 10.1. Refer to the [“EDK Requirements”](#) and the [“Xilinx EDK Development Boards”](#) sections for further details.

EDK Requirements

- Xilinx ISE 10.1
The Xilinx FPGA design implementation tools, ISE 10.1 (WebPACK or Foundation), are required to implement embedded designs generated with the XPS tools. Several EDK tools use functionality delivered with tools contained in ISE 10.1.
Note: Updates to ISE 10.1 including service packs are available at: <http://www.xilinx.com/support/mysupport.htm>.
- Development Board
To test your MicroBlaze processor or PowerPC processor system on an FPGA, you must have access to a development board that contains a Xilinx FPGA and several other components as well as standard download, configuration, and debug connectors.

Operating system specific requirements:

- Linux–Bash shell

Xilinx EDK Development Boards

Development boards are available from Xilinx and Xilinx partners. Xilinx boards that are currently available include:

- Xilinx ML300 (supported in an upcoming Service Pack)
- Xilinx ML310
- Xilinx ML401
- Xilinx ML402
- Xilinx ML403
- Xilinx ML405
- Xilinx ML410
- Xilinx ML501
- Xilinx ML505
- Xilinx ML506
- Xilinx ML507 support when FXT becomes full access.
- Xilinx Spartan-3 Starter Kit
- Xilinx Spartan-3E Starter Board
- Xilinx Spartan-3E 1600E MicroBlaze Development Board
- Xilinx Spartan-3A Starter Kit
- Xilinx Spartan-3AN Starter Kit

Contact your local Avnet, Memec, Nu Horizons or other authorized distributor to obtain any partner board.

Notes on Installing EDK on MS Windows

This section summarizes the EDK installation process on the Windows platform.

EDK Windows Environment Variables and Registry Settings

The EDK installer creates or modifies the following variables on your machine. These variables are added to the system settings.

- ◆ `XILINX_EDK`
Sets the value of this variable to the EDK installation directory.
- ◆ `PATH`
Prefixes the `PATH` environment variable with
`%XILINX_EDK%\bin\nt;%XILINX_EDK%\lib\nt`

EDK tools require the Cygwin tools distributed by Red Hat. A copy of these tools is distributed with the EDK installation. When you run XPS, the SDK IDE, or Xilinx Shell, your registry is checked for the entry:

`My Computer\HKEY_CURRENT_USER\SOFTWARE\Cygnus Solutions\Cygwin.`

If a compatible version of Cygwin is found pre-installed on your machine, the EDK tools use it. Otherwise, the registry is set up to point to the Cygwin tools distributed in the EDK installation area.

Note: When you install EDK, Cygwin installation files are copied to your system. Whether or not the copied files are installed depends on the state of existing Cygwin installations on the machine. If you already have Cygwin installed, and if the existing Cygwin installation meets requirements, EDK does not install Cygwin (and the existing Cygwin installation is used). Otherwise, EDK installs Cygwin from the installation area. For more information, refer to the “EDK Shell” Chapter in the *Embedded System Tools Reference Manual*, available at http://www.xilinx.com/ise/embedded/edk_docs.htm.

Notes on Installing EDK on Linux

This section summarizes the EDK installation process on the Linux platform.

Linux EDK Environment Variables

EDK installer creates `settings.csh` and `settings.sh` files in the EDK installation directory. These files set up the environment for using the EDK tools.

- ◆ `$XILINX_EDK`
Sets the value of this variable to the installation direction.
- ◆ `$PATH`
Prefixes the `$PATH` environment variable with:
 - `$XILINX_EDK/gnu/microblaze/lin/bin`
 - `$XILINX_EDK/gnu/powerpc-eabi/lin/bin/`
- ◆ `$LD_LIBRARY_PATH`
Prefixes the `$LD_LIBRARY_PATH` environment variable with `$XILINX_EDK/bin/lin`.

Note: While executing the script, make sure that the `$XILINX_EDK/bin/lin` appears before `$XILINX/bin/lin` in the `$LD_LIBRARY_PATH` variable.

EDK Installation Directory Structure

The installed image of EDK is organized into the following directories, where `<edk_install_dir>` is the location of the root of the EDK image.

Table 7: EDK Directories

Directory	Description
<code>\$XILINX_EDK/</code>	This directory is the EDK installation root directory.
<code>bin/</code>	This directory contains the embedded system tools application executables. The EDK installer has already set up your environment variables to include the executables of the embedded system tools that reside in the <code>bin</code> directory.
<code>board/</code>	This directory contains board description files. The <code>boards</code> directory provides board files for Xilinx boards, which are required by the Base System Builder for creating embedded systems. Board files for partner boards must be obtained directly from the partners.

Table 7: EDK Directories (Cont'd)

Directory	Description
cygwin/	This directory contains the Cygwin portability layer (available only on Windows platforms).
doc/	This directory contains the EDK documentation. EDK-related documentation resides in the /doc directory. Refer to “ EDK Documentation ”.
data/	This directory has default option files required by ISE tools.
eclipse/	This directory contains files for the XPS Software Development Kit (Eclipse-based).
EDKexamples/	This directory contains sample projects.
gnu/	This directory contains the EST GNU Tools.
hw/	This directory contains MicroBlaze processor and peripheral hardware components. The hw/ directory contains the HDL sources for the hardware IP.
java/	This directory contains Java Runtime 1.4.2 required by SDK.
sw/	This directory contains drivers, BSPs, and software services. The sw/ directory contains the drivers required by the IP installed in the hw/ directory, the board support packages. It also contains the source for various modules of the Xilinx MicroKernel, such as the Networking library and the file system. Software libraries and initialization files are also contained in the sw/ directory.
third_party/	This directory contains the IBM Instruction Set Simulator.

EDK Documentation

This subsection describes how to locate the EDK documentation in the software and on web and provides an overview of the available EDK documents.

Locating EDK Documentation

Use index.htm to Find EDK Documentation

A comprehensive set of links to EDK-related documents are provided in your EDK installation directory at `$XILINX_EDK/doc/usenglish/index.htm`.

EDK Documentation on the Web

You can find most EDK documentation on the Xilinx web. Look under the heading “Documentation” at:

http://www.xilinx.com/ise/embedded_design_prod/platform_studio.htm.

In addition to providing links to the documents listed below, this web page provides links to application notes, reference designs, design examples, and a product brief.

EDK Documentation Set

The EDK documentation set includes:

- This chapter of the *ISE Design Suite 10.1 Release Notes*
- Tools documentation and processor IP reference guides
- Processor reference guides
- Online help for XPS and SDK.

Note: The *Processor IP Reference Guide (Xilinx Processor IP Library)* and the *Driver Reference Guide* are available only from the `$XILINX_EDK/doc/usenglish` folder. The *SDK Online Help* is published only in the SDK GUI.

User Guides

EDK Profiling User Guide

The *EDK Profiling User Guide* provides information about profiling software running on embedded systems built with EDK. Profiling is software-intrusive and is based on the GNU *gprof* tool. This document details how profiling works, how to set up the hardware and software systems to perform profiling, and how to view the resulting profile data.

EDK Concepts, Tools, and Techniques

The *EDK Concepts, Tools, and Techniques* book gives you a hands-on tour of the product. Each section describes an aspect of embedded design creation and provides an opportunity for you to take a “Test Drive” using XPS tools.

Tools and IP References

EDK provides reference guides that cover the basic usage of the various tools that are included.

Tools Reference Manuals

- *Embedded System Tools Reference Manual*

This manual provides detailed information about all the tools available in the EDK suite, including XPS, Xilinx Microprocessor Debugger (XMD), Libgen, Simgen, Platgen, GNU compiler (GCC) and debuggers.

- *IBM PowerPC ISS Reference Guide*

EDK provides a third party tool for simulation of PowerPC™ (405 and 440) processor systems. The documentation for this is included in a separate guide, the *IBM PowerPC ISS Reference Guide*.

Libraries and Drivers Reference Documents

- *OS and Libraries Document Collection*

This document set details the information about the libraries which are shipped as a part of EDK. It details the API that is required for customers who intend to use the provided libraries. The document collection includes a Standalone Board Support Package (BSP) document, the Xilinx Xilkernel document, the FAT File System (FATFS) and Memory File System (MFS), as well as the Flash library, and the open source light weight IP (lwIP) library.

- *Driver Reference Guide*

This guide provides detailed API and other information for each driver provided in the EDK installation. The guide is presented as a web page with links to a set of web-based documentation.

IP Reference Guides

- *Processor IP Reference Guide (Xilinx Processor IP Library)*

Processor IP is an important part of the EDK distribution. Its documentation consists of individual data sheets with important information about parameters and port connections for each IP. This information is required by hardware designers for designing their system. For systems created through the Base System Builder, some of the basic connections are done by a wizard, but for advanced connections and other peripherals, refer to the *Processor IP Reference Guide*.

This guide also provides easy access to the core data-sheet, modification history, architecture support information and ready access to purchase information for pay cores. It is presented as a web page with links to a set of web-based documentation.

- *PLB46 Interface Simplifications (SP026 v1.0)*

Describes the simplifications to the PLB v4.6 specification in the Xilinx implementation of the bus. The document also provides guidance for designing masters and slaves that connect to the bus.

- *PLB v3.4 and OPB to PLB v4.6 System and Core Migration User Guide (UB443 v1.0)*

This user guide provides an overview of the Xilinx implementation of the PLB v4.6 bus. It then explains how both MicroBlaze and PowerPC (405 and 440) systems can be migrated to use the new interconnect. Instructions are also provided on how to migrate user-designed slave and master peripheral cores.

Processor References

PowerPC Processors

- *PowerPC[®] Processor Reference Guide*

This document is intended to serve as a stand-alone reference for application and system programmers of the PowerPC 405D5 processor. This document also contains the API and the instruction set architecture of PowerPC405.

- *PowerPC 405 Processor Block Reference Guide*

This manual details the Xilinx implementation of the PowerPC[®] 405 processor. It is targeted to hardware and system designers.

- *PowerPC 440 Processor Block Reference Guide*

This manual details the Xilinx implementation of the PowerPC[®] 440 processor. It is targeted to hardware and system designers.

- *PowerPC 405 Processor ISA Extensions for Virtex-4 FPGAs*

This is addendum documentation listing the new instructions provided for the Fabric Co-processor Module interface in Virtex-4 FX FPGAs.

MicroBlaze Processor

- *MicroBlaze Processor Reference Guide*

This document is intended to serve as a stand-alone reference for application and system programmers of the MicroBlaze processor. The detailed ISA and the ABI for the MicroBlaze processor are also described in this document.

XPS and SDK Online Help

Online help is available from the XPS and SDK GUIs.

EDK Supported Software Versions

The following table provides the software version which are included or which are supported in EDK 10.1:

Table 6-1: EDK Supported Software Versions

Software	Vendor Release Version	Xilinx Release Number
ISE Version	n/a	10.1
lwIP Library	n/a	v 3.00.a
Standalone Board Support Package	n/a	v2.00.a
Xilkernel	n/a	v4.00.a
Automatic Generation of Tornado 2.x (VxWorks 5.x) Board Support Packages	VxWorks 5.x	n/a
Automatic Generation of Wind River VxWorks 6.1 Board Support Packages	VxWorks 6.1	n/a
Automatic Generation of Wind River VxWorks 6.3 Board Support Packages	VxWorks 6.3	n/a
Automatic Generation of Wind River VxWorks 6.5 Board Support Packages	VxWorks 6.5	n/a
LibXil Flash	n/a	v1.00.a
Automatic Generation of Linux 2.4 (MontaVista Linux 3.1) Board Support Packages	(MontaVista Linux 3.1)	n/a
Automatic Generation of Linux 2.6 Board Support Packages	Linux 2.6	n/a
MicroBlaze GNU Tools	v 2.10.1	n/a

Table 6-1: EDK Supported Software Versions (Cont'd)

Software	Vendor Release Version	Xilinx Release Number
GNU Tools for MicroBlaze and PowerPC (405 and 440) processors	v 2.16	n/a
GCC compiler tools for MicroBlaze and PowerPC (405 and 440) processors	GCC 4.1.1	n/a
Cygwin	v 1.5.17 for Windows v 1.5.24 or higher for Vista	n/a
Eclipse	3.1.2	10.1

Other EDK Information

Migrating Old Projects

The IP Core Version Management Wizard migrates older projects to the current version of XPS. It will point out changes to the cores, and in some cases, help you upgrade to newer revisions of cores currently in your project. Migration instructions can also be found in the *Embedded Systems Tools Reference Manual*.

About Example User Constraint Files

There are some IPs, such as the PLB RapidIO LVDS and the OPB PCI, which need certain example user constraints files (UCFs) to be available in your project area. When such IPs are used in an EDK project, tools give out the following ALERT message:

```
An example UCF is available for this core and must be modified for use
in the system. Please refer to the EDK Getting Started guide for the
location of this file.
```

The UCF file for the IP can be found at:

```
$XILINX_EDK/hw/XilinxProcessorIPLib/pcores/peripheral_name/data/
```

where \$XILINX_EDK is the installation area.

Third Party Tools

EDK is designed to work with some third party tools that you can obtain and set up separately. This subsection provides some information on these tools.

IBM CoreConnect Toolkit

EDK is designed to integrate seamlessly with the IBM® CoreConnect™ Toolkit. This toolkit is not included with EDK, but is required if bus functional simulation is desired.

The toolkit provides a number of features that enhance design productivity. To obtain the toolkit, you must have a license for the IBM CoreConnect Bus Architecture. Licensing CoreConnect provides access to a wealth of documentation, Bus Functional Models, Hardware IP, and the CoreConnect Toolkit.

Xilinx provides a Web-based licensing mechanism that allows you to obtain the CoreConnect Toolkit from the Xilinx website. You can license CoreConnect online at http://www.xilinx.com/products/ipcenter/dr_pcentral_coreconnect.htm.

Once the request is approved (typically within 24 hours), you will receive an email granting access to the protected web site. You can then download the toolkit.

You can also get the CoreConnect license directly from IBM.

For further documentation on the CoreConnect Bus Architecture, refer to the IBM CoreConnect website at http://www-01.ibm.com/chips/techlib/techlib.nsf/products/CoreConnect_Bus_Architecture.

Setting Up the EDK Simulation Environment

For simulation of embedded designs, you must set up your simulation environment. This is required every time you install a new release or a service pack of EDK. For information about setting up simulation environments, refer to the XPS Help.

EDK tools support ModelSim PE/SE & NCSim LDV/IUS versions as supported by ISE 10.1 tools. The verification of EDK tools and processor IP is done using:

- Modelsim SE/PE 6.3c
- NCSim IUS 6.1 or later (NCSim 6.1 is not available on Windows)

Using EDK with ChipScope Pro

EDK enables hardware designers to create processor systems rapidly using the ChipScope Pro CoreConnect Bus Analyzer cores and the Virtual IO (VIO) core. EDK supports the following ChipScope Pro cores:

- chipscope_icon
- chipscope_plbv46_iba
- chipscope_ila
- chipscope_vio
- chipscope_plb_iba
- chipscope_opb_iba

To instantiate these cores in an EDK design, you must have a valid ChipScope Pro Installation.

DSP Tools (AccelDSP and System Generator) and PlanAhead/PlanAhead Lite

The DSP Tools and PlanAhead™/PlanAhead Lite are included in the ISE Design Suite for 10.1. For more information on each product, see the What's New file located at:

<http://toolbox.xilinx.com/docsan/xilinx10/swcol/whatsnew.htm>

Technical Services and Support

This chapter describes how to contact Xilinx for Customer Support and Services, and how to find up-to-date information about Xilinx products. This chapter contains the following sections:

- [“Accessing Technical Services and Support”](#)
- [“Software Customer Service”](#)
- [“Customer Education”](#)

Accessing Technical Services and Support

This section describes some of the features available from the Website.

Support by Product

Please visit the Xilinx Support site at <http://www.xilinx.com/support>, where you can find support information arranged by Device Family. If you would like to view the support page in the MySupport view, you need to login.

Design and Education Services

Visit the Design and Education Services Website at <http://www.xilinx.com/support/gsd/index.htm> for information on Xilinx® Support Services, Titanium Technical Service, Design Services, Education Services, and the Xilinx Productivity Advantage (XPA) program.

Technical Support

This section describes some of the support features available from the Website.

Download Center

Visit the Download Center at <http://www.xilinx.com/support/download/index.htm> to access the latest software Service Packs, IP Updates, and more.

Answer Records

Use our Answer Records to help troubleshoot issues or find solutions to common technical issues. You can search through the Answer Record database from any Xilinx.com page. Additionally, you can use Advanced Search at:

<http://www.xilinx.com/company/advanced-search.htm>

Software Manuals

To access the Software Manuals and Help collection on the web go to:

<http://toolbox.xilinx.com/docsan/xilinx10/books/manuals.pdf>

The software manuals available from this collection provide detailed information about the ISE software applications and command-line functions. The Help available from this collection provides procedural information for using the ISE software applications.

Note: The *Libraries Guide* and *Constraints Guide* on the Web are updated periodically with the latest device-specific information. Check the Software Manuals Website for the most up-to-date information.

WebCase

Visit WebCase at <http://www.xilinx.com/support/clearexpress/websupport.htm> to create a technical support case or to monitor the status of a case.

Contact Technical Support and Services

This section describes how to contact Xilinx for additional information and assistance.

Technical Support Hotline

Contact the Technical Support Hotline at one of the numbers listed in the following table.

Note: For the most up-to-date contact information, visit the Technical Support Web page at http://www.xilinx.com/support/services/contact_info.htm.

Region	Language	Phone*	WebCase	Support Hours
North America	EN	1 800-255-7778 or +1 408-879-5199	Please open a case via WebCase: http://www.xilinx.com/support/clearexpress/websupport.htm	M-F 7:00 - 17:00 PST
Europe, Middle East, and Africa	EN, DE, FR	00 800-5152-5152*** or +353 1-461-5700	WebCase: http://www.xilinx.com/support/clearexpress/websupport.htm	M-F 8:00 - 17:00 GMT
Japan	JP	+81 3-6744-7800	Japan WebCase: http://japan.xilinx.com/support/clearexpress/websupport.htm	M-F 9:00 - 17:30 JST
Korea	EN	+82 2-3144-0255	WebCase: http://www.xilinx.com/support/clearexpress/websupport.htm	M-F 10:00 - 19:00 KST
China	CH (Mandarin), EN	+86 800-988-0218 (China mainland) +86 400-880-0218 (Cell phone user)	China WebCase: http://china.xilinx.com/support/clearexpress/websupport.htm	M-F 9:00 - 18:00 CST

Region	Language	Phone*	WebCase	Support Hours
Taiwan	CH (Mandarin), EN	+886 2-8176-1060	WebCase: http://www.xilinx.com/support/clearexpress/websupport.htm	M-F 9:00 - 18:00 CST
Hong Kong	CH (Mandarin), EN	+852 3187-3855	WebCase: http://www.xilinx.com/support/clearexpress/websupport.htm	M-F 9:00 - 18:00 CST
Singapore	CH (Mandarin), EN	+65 6544-8998	WebCase: http://www.xilinx.com/support/clearexpress/websupport.htm	M-F 9:00 - 18:00 CST
Rest of Asia	CH (Mandarin), EN	+86 21-3318-4757	WebCase: http://www.xilinx.com/support/clearexpress/websupport.htm	M-F 9:00 - 18:00 CST

Corporate Switchboard + 1-408-559-7778

* For the numbers listed, '+' represents the International Direct Dialing (IDD) prefix of the country from which you are calling. Consult your local telephone service provider for more information on the IDD codes for the country from which you are calling.

** Support Hours listed apply for both standard and daylight savings time.

** 00 800-5152-5152 is a international free phone (toll free) toll free number available in the following countries: Austria, Belgium, Denmark, Finland, France, Germany, Ireland, Israel, Italy, Luxembourg, Netherlands, Norway, Portugal, Spain, Sweden, Switzerland, and the United Kingdom. When dialing from other countries, use the alternate number provided, which is charged at international direct-dial rates.

Education Services

To take advantage of the latest ISE software features, go to the Xilinx Website, and click **Design and Education Services > Education Services** to download e-learning modules and to sign up for updated ISE software training classes that help you maximize productivity and increase your skill set while lowering your overall development costs.

Order Management

Go to the Xilinx Website and click **Online Store** to visit the Xilinx Online Store or contact your local Xilinx distributor for products and services available through Xilinx.

Software Customer Service

Visit http://www.xilinx.com/company/sales/ww_reps.htm to find sales and distributor contact information for your region

Customer Education

This section describes the ways you can learn to use the Xilinx software tools, including using the software manuals and online help, taking a customer education course, or taking an online tutorial.

Training Classes

Xilinx offers specialized training modules and software update classes at many different locations.

For more information about customer training classes and software training for Xilinx products, use the Xilinx Support Website at:

<http://www.xilinx.com/support/education-home.htm>

You can also contact a Xilinx Training Administrator at the following toll-free number:

1-877-XLX-CLASS

International customers please contact your local sales representative or distributor for area-specific training programs.

User Tutorials

All tutorials on the Web can be found at:

<http://www.xilinx.com/support/techsup/tutorials/index.htm>

Software Manuals Online and Online Help

All manuals and Online Help on the Web can be found at:

<http://toolbox.xilinx.com/docsan/xilinx10/books/manuals.pdf>

E-learning

This is a system that provides in-depth technical training sessions on Xilinx® programmable logic products over the Web. For more information, use the following Website:

<http://www.xilinx.com/support/training/free-courses.htm>

License Agreements

The following licenses govern the Xilinx use of some third-party vendor software in ISE™ Design Suite 10.1. Each license applies only to the named vendor's software, and not to ISE Design Suite 10.1 as a whole. Your use of the ISE Design Suite 10.1 software is governed by the click licenses accepted during installation.

PERL License Agreement

XILPERL is a modified version of PERL licensed to Xilinx® and to you under the Artistic license. The text of the artistic license may be seen at:

<http://www.perl.com/language/misc/Artistic.html>

XILPERL is invoked implicitly by ISE release 10.1 applications when it is needed and there is no need for the user to invoke it directly. The only difference between XILPERL and unmodified PERL is that XILPERL picks up its input script file from the location specified in the Xilinx environment variable, and not from STDIN.

XILPERL is not packaged in ISE release 10.1 to be used as a standalone PERL by the end user. The unmodified version of PERL may be obtained in source or executable form from <http://www.perl.com>.

Scintilla and SciTE License Agreement

The ISE Design Suite 10.1 Graphical User Interface software uses the Scintilla Source Code Editor whose license follows:

Copyright 1998-2003 by Neil Hodgson <neilh@scintilla.org>

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Regex License Agreement

ISE release 10.1 contains the Regex software from the Boost libraries licensed under the following terms:

Copyright (c) 1998-2000

Dr John Maddock

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Integer Traits License Agreement

ISE release 10.1 contains the Integer Traits software from the Boost libraries licensed under the following terms:

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The Apache Software License, Version 1.1

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```
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zlib.h -- interface of the 'zlib' general purpose compression library
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