

# CodeWarrior®

# QuickStart Professional

Windows® | Mac® | Solaris™ | Linux

Because of last-minute changes to CodeWarrior, some of the information in this manual may be inaccurate. Please read the Release Notes on the CodeWarrior CD for the latest up-to-date information.

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# Table of Contents



<b>1 Welcome</b>	<b>5</b>
Get Started, Quick! . . . . .	6
About this Book . . . . .	7
Registering CodeWarrior . . . . .	9
What's New . . . . .	9
CodeWarrior Year 2000 Compliance . . . . .	10
What You Should Know . . . . .	10
<b>2 Overview</b>	<b>11</b>
The CodeWarrior IDE . . . . .	11
Multiple Programming Hosts . . . . .	13
Multiple Languages . . . . .	14
Multiple Programming Targets . . . . .	15
Libraries and Application Frameworks . . . . .	15
CodeWarrior Documentation . . . . .	16
<b>3 Windows® Installation and Programming of CodeWarrior®</b>	<b>19</b>
Windows System Requirements . . . . .	19
Installation Overview on Windows . . . . .	20
Creating a Windows Application . . . . .	24
<b>4 Mac® Installation and Programming of CodeWarrior®</b>	<b>27</b>
Mac System Requirements . . . . .	27
Installing CodeWarrior on Mac . . . . .	28
Creating a Mac Application . . . . .	32
<b>5 Solaris™ Installation and Programming of CodeWarrior®</b>	<b>35</b>
Solaris System Requirements . . . . .	35
Installing CodeWarrior on Solaris . . . . .	36
Creating a Solaris Application . . . . .	39
<b>6 Linux Installation and Programming of CodeWarrior®</b>	<b>43</b>
Linux System Requirements . . . . .	43
Installing CodeWarrior on Linux . . . . .	44
Creating a Linux Application . . . . .	49

<b>7 A Quick Tour of CodeWarrior</b>	<b>53</b>
Guided Tour Overview . . . . .	53
Launching the CodeWarrior IDE . . . . .	54
Opening a CodeWarrior Project. . . . .	55
Using the Project Window . . . . .	55
Setting IDE Preferences . . . . .	60
Using the CodeWarrior Editor . . . . .	63
Target Settings Options . . . . .	65
Building Projects with CodeWarrior. . . . .	67
Where to Go From Here . . . . .	69
<b>8 CodeWarrior Documentation</b>	<b>71</b>
CodeWarrior Online Help . . . . .	71
Documentation. . . . .	73
Web Sites of Interest. . . . .	77
Beginner's Resources . . . . .	77
Factory Updates . . . . .	78
<b>A Metrowerks Support</b>	<b>79</b>
Contacting Metrowerks . . . . .	79
Registering a CodeWarrior Product . . . . .	80
Technical Support. . . . .	81
Sales, Renewals, and Site Licensing . . . . .	82
Worldwide Distributors . . . . .	83
CodeWarrior Factory Store. . . . .	83
<b>B Metrowerks Software License Agreement</b>	<b>85</b>

# Welcome



Welcome to CodeWarrior Professional from Metrowerks, a flexible, powerful, and easy to use programming package for Windows®, Mac®, Solaris™, Linux, and Java™. Use CodeWarrior Professional to write software in C, C++, or Java for Windows, Mac, Solaris, Linux, or Java VM.

Whether you're new to programming or an experienced programmer using CodeWarrior for the first time, we want your programming experience to be good. For a start, read this guide as an introduction to CodeWarrior Professional.

## Getting started

If you can't wait to dive in and get started using CodeWarrior, see [“Get Started, Quick!” on page 6](#).

## What's in this book

To find out the contents of this book, see [“About this Book” on page 7](#).

## Getting help

Got a problem you can't solve? See [“Metrowerks Support” on page 79](#) for information on contacting Metrowerks for technical and customer support.

## Get Started, Quick!

The quickest way to learn about CodeWarrior is to follow the steps below.

**1. Read the software license.**

Please read the [“Metrowerks Software License Agreement” on page 85](#) and make sure you understand and agree with it before installing your new software.

**2. Register CodeWarrior.**

Make sure you’ve registered your software to receive technical support and any factory updates you might be entitled to. See [“Registering CodeWarrior” on page 9](#) for more information.

**3. Introduce yourself to CodeWarrior.**

See [“Overview” on page 11](#) to learn about using the different parts of CodeWarrior to develop software.

**4. Install CodeWarrior.**

To install your new software on your computer, follow the directions for your computer system:

- see [“Windows® Installation and Programming of CodeWarrior®” on page 19](#) to install CodeWarrior on Windows and create a small application.
- see [“Mac® Installation and Programming of CodeWarrior®” on page 27](#) to install CodeWarrior on the Mac and write a small application.
- see [“Solaris™ Installation and Programming of CodeWarrior®” on page 35](#) to install CodeWarrior for Solaris and create an application.
- see [“Linux Installation and Programming of CodeWarrior®” on page 43](#) to install CodeWarrior for Linux and create an application.

**5. Take a tour of the CodeWarrior IDE.**

Turn to [“A Quick Tour of CodeWarrior” on page 53](#) for a short, step-by-step exploration of the CodeWarrior IDE (Integrated Development Environment), the center of CodeWarrior software development.

6. **Learn about the rest of CodeWarrior.**

See [“CodeWarrior Documentation” on page 71](#) to learn more about other features of CodeWarrior and its documentation.

## About this Book

*QuickStart Professional* covers:

- what’s in the CodeWarrior Professional software package
- how to install CodeWarrior Professional
- a brief introduction to the CodeWarrior IDE (Integrated Development Environment), the center of CodeWarrior software development
- where to find more information on using CodeWarrior
- getting technical and customer support from Metrowerks
- Information about [CodeWarrior Year 2000 Compliance](#)

The chapters in *QuickStart Professional* cover the topics shown in [Table 1.1](#).

**Table 1.1 Chapters in this book and the topics they cover**

<b>This chapter...</b>	<b>covers these topics</b>
<a href="#">“Welcome” on page 5</a>	introduction to this book, the CodeWarrior Reference Web Site, getting started, eligibility for free and discounted updates, Metrowerks Year 2000 policy, what’s new, what you should know before using CodeWarrior
<a href="#">“Overview” on page 11</a>	programming tools, host platforms, programming languages, target platforms, application frameworks, introduction to documentation and example projects
<a href="#">“Windows® Installation and Programming of CodeWarrior®” on page 19</a>	system requirements and steps to install CodeWarrior on Microsoft Windows
<a href="#">“Mac® Installation and Programming of CodeWarrior®” on page 27</a>	system requirements and steps to install CodeWarrior on the Mac
<a href="#">“Solaris™ Installation and Programming of CodeWarrior®” on page 35</a>	system requirements, steps to install CodeWarrior on machines running Solaris
<a href="#">“Linux Installation and Programming of CodeWarrior®” on page 43</a>	system requirements, steps to install CodeWarrior on machines running Linux
<a href="#">“A Quick Tour of CodeWarrior” on page 53</a>	brief introduction to the CodeWarrior IDE, the center of CodeWarrior software development
<a href="#">“CodeWarrior Documentation” on page 71</a>	covers detailed information about CodeWarrior Online Help, documentation, and third-party references and books
<a href="#">“Metrowerks Support” on page 79</a>	contacting Metrowerks and its distributors for technical support, customer support, and other services
<a href="#">“Metrowerks Software License Agreement” on page 85</a>	the conditions to using this software



## Registering CodeWarrior

### Did you just buy this software?

If this is the first time you've purchased CodeWarrior, fill in the registration card and send it to Metrowerks to be eligible for receiving our world class technical support.

See ["Registering a CodeWarrior Product" on page 80](#) for details on registering your new Metrowerks product.

See ["Technical Support" on page 81](#) for more information on the technical support options available to you.

## What's New

To find out what's new with CodeWarrior Professional, see:

- What's New release note

The What's New release note is located in the top directory of the CodeWarrior CD-ROM. It contains a broad overview of the major changes offered in this release of CodeWarrior.

- Release Notes folder

The Release Notes folder on the CD contains detailed release notes for the software in this product.

- Metrowerks documentation

Finally, many of the Metrowerks documentation manuals contain a **What's New** section describing new features.

## **CodeWarrior Year 2000 Compliance**

The Products provided by Metrowerks under the License agreement process dates only to the extent that the Products use date data provided by the host or target operating system for date representations used in internal processes, such as file modifications. Any Year 2000 Compliance issues resulting from the operation of the Products are therefore necessarily subject to the Year 2000 Compliance of the relevant host or target operating system. Metrowerks directs you to the relevant statements of Microsoft Corporation, Sun Microsystems, Inc., Apple Computer, Inc., and other host or target operating systems relating to the Year 2000 Compliance of their operating systems. Except as expressly described above, the Products, in themselves, do not process date data and therefore do not implicate Year 2000 Compliance issues.

For additional information, visit:

<http://www.metrowerks.com/about/y2k.html>

## **What You Should Know**

To get the most out of this software, you should be familiar with operating your computer, using the mouse, menus, buttons, windows, clicking, dragging, and so on. If you're not familiar with these terms or the actions associated with them, please refer to the instructions in the user's guide or the on-line help system that come with your computer.

# Overview



This chapter introduces you to the CodeWarrior development universe. With CodeWarrior, no programming project is out of your reach. The overview covers the following topics:

- [The CodeWarrior IDE](#)
- [Multiple Programming Hosts](#)
- [Multiple Languages](#)
- [Multiple Programming Targets](#)
- [Libraries and Application Frameworks](#)
- [CodeWarrior Documentation](#)

## The CodeWarrior IDE

The CodeWarrior IDE (Integrated Development Environment) is the center of CodeWarrior software development. The IDE offers:

- **Power** – From the IDE you can edit, browse, compile, link, and run your project. The IDE includes a text editor, class browser, and a project manager to help you do all your programming tasks easily and quickly.
- **Flexibility** – Plug-in compilers and linkers support many different platforms and processors. The same powerful IDE is used to develop and generate software for such targets as Win32®/Intel, Mac OS®, Solaris, MIPS™, Motorola® 680x0, PowerPC™, and Linux.
- **Convenience** – The IDE running both on Windows, Mac OS, Solaris, and Linux are based on the same technology. Because the IDE and its plug-ins operate identically for all platforms, developers who program on multiple platforms save time and effort using the familiar CodeWarrior tools for all their projects.

## Overview

### The CodeWarrior IDE

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The IDE's core tools are the tightly and transparently integrated primary components used to write code. [Table 2.1](#) describes some of the individual components included with the CodeWarrior IDE.

**Table 2.1 The IDE's core tools**

This tool...	Provides these features and functions
project manager	Use the commands in the IDE's <b>Project</b> menu to gather all the files of a program together along with configurable sets of options into a project file. It also decides the plugin compilers and linkers to create the final program.
rapid application development	CodeWarrior now offers tools to automate new applications to handle the coding of generic initialization routines and the drawing of user interface elements.
source code editor	Use the commands in the <b>Edit</b> and <b>Search</b> menus, and the controls in the IDE's editor windows to edit source code and text. Some of the editor's features are: <ul style="list-style-type: none"><li>• edit, search, and replace text in one file or several files</li><li>• split an editor window into multiple panes</li><li>• toggle between a source file and its related interface file</li><li>• open an interface file referred to by a source file</li><li>• set markers at arbitrary locations in a text file</li><li>• jump to any routine in any file instantly</li><li>• customize the source code display</li></ul>
browser	Use the commands in the <b>Window</b> menu, features in any source code view, and controls in the browser's window to get quick, intuitive access to the definitions of classes, variables, routines, enumerations, and other source code elements.

<b>This tool...</b>	<b>Provides these features and functions</b>
compilers and linkers	Thanks to its plugin architecture, the IDE is able to play host to a limitless variety of compilers and linkers to generate software for several operating system and processor platforms.
debugger	Use the commands in the <b>Window</b> , <b>Debug</b> , and <b>Data</b> menus to control your program, step through its source code or assembly statements, set breakpoints, set watchpoints, and examine its data while it executes. The IDE's debugger works with all kinds of code in all the supported languages—C, C++, Pascal, and Java. Use the debugger to debug libraries, executables, multiple threads, and processes. The debugger also supports debugging code running on multiple processors.

Some Metrowerks products do not include support for all available core tools. See the documentation to determine which core tools are included in your package.

## Multiple Programming Hosts

Metrowerks CodeWarrior is currently hosted on these platforms:

- Windows 95 or Windows NT
- Mac OS (68K or PowerPC)
- Solaris
- Linux

This makes it easy to switch to another platform as your programming requirements change while retaining the familiar CodeWarrior development environment. Furthermore, projects from one host can be opened by any of the other hosts. This feature provides an enormous boost in productivity when developing on multiple platforms.

## Multiple Languages

CodeWarrior Professional supports development with the most common languages used by professional programmers today: C, C++, Java, and Pascal. [Table 2.2](#) shows the list of compilers Metrowerks provides to generate software for its target platforms.

**Table 2.2** Language supported for targets

Target platform	C	C++	Java
Java Virtual Machine			•
Linux	•	•	
Mac OS (68K and PowerPC)	•	•	•
Palm OS	•	•	
Solaris	•	•	•
Sony PlayStation or Net Yaroze	•	•	
Win32/Intel	•	•	•

Some Metrowerks products do not include support for all available languages. See the documentation to determine which language(s) are included in your package.

## Multiple Programming Targets

Use CodeWarrior on your host system to write software for many operating system and processor platforms (targets). [Table 2.3](#) shows you some of the major targets supported by each host.

**Table 2.3** Programming targets and their host development platforms

Target platform	Windows	Mac OS	Solaris	Linux
Java Virtual Machine	•	•	•	
Mac OS (68K & PPC)	•	•		
Palm OS	•	•		
Solaris			•	
Sony PlayStation or Net Yaroze	•	•		
Win32/Intel	•	•		•

The CodeWarrior product you purchased does not include compilers and linkers for every possible target. Check [“CodeWarrior Documentation” on page 71](#) and the appropriate manual for a list of targets supported by the product.

## Libraries and Application Frameworks

### Standard libraries

CodeWarrior includes standard libraries with its compilers, when appropriate for a target platform. CodeWarrior Professional includes MSL (Metrowerks Standard Library) for C and C++ for Win32/Intel and Mac OS. MSL C and MSL C++ are ANSI-conformant standard libraries.

### Target libraries

To access the services and features of a target platform’s operating system, the CodeWarrior IDE/Integrated Debugger also includes libraries and interface files from the target platform’s manufacturer. For example, CodeWarrior Professional comes with Microsoft’s

Win32 SDK header files to develop software for the Win32/Intel platform.

### Application frameworks

Programming for modern, graphical operating systems like Windows 95/98/NT, Mac OS, and Java is non-trivial, and that's where an application framework helps. A framework supplies standardized code to handle many common programming tasks, making the creation and design of a new application much easier and faster.

The CodeWarrior comes with several complete application frameworks, one for each major CodeWarrior target.

**Table 2.4 Frameworks supported**

Framework	Target platform
AWT (Abstract Windowing Toolkit)	Java
Swing	Java
MFC (Microsoft Foundation Classes)	Windows
PowerPlant	Mac OS

## CodeWarrior Documentation

CodeWarrior comes with a wealth of online documentation. This is found in the `Documentation` folder on the CodeWarrior CD-ROM. For more information on using the documentation to learn about CodeWarrior, see [“CodeWarrior Documentation” on page 71](#).

### Finding information for a specific target platform

To learn the use of CodeWarrior to develop software for a particular target platform, refer to the appropriate *Targeting* manual that comes with CodeWarrior Professional. For example, to learn and develop an application or DLL for Win32/Intel using CodeWarrior, read *Targeting Win32*.



Every *Targeting* manual has the following:

- a description of the tools you'll use to develop software for the target platform it covers
- a tutorial project
- steps to configure different kinds of projects for the platform
- relevant libraries and other useful information

### **Getting printed documentation**

Some manuals titled *Inside CodeWarrior* are available as printed books. Contact your local distributor or browse the Metrowerks Web page (<http://www.metrowerks.com/geekware/>) for information.

### **Example Projects**

CodeWarrior Professional comes with lots of sample source code and projects to give you an insight into how others use CodeWarrior to develop software. You'll find this sample software in the `CodeWarrior Examples` folder on your CodeWarrior CD.

**Overview**

*CodeWarrior Documentation*

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# Windows<sup>®</sup> Installation and Programming of CodeWarrior<sup>®</sup>

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This chapter explains the installation procedure for the CodeWarrior Professional software package on PCs running Windows<sup>®</sup>. The chapter also provides you with an example program to create a simple console application using CodeWarrior. The topics in this chapter are:

- [Windows System Requirements](#)
- [Windows Installation Procedure](#)
- [Creating a Windows Application](#)

## Windows System Requirements

The CodeWarrior IDE requires the following hardware and software:

**Table 3.1 Windows Requirements**

<b>Hardware</b>	Intel <sup>®</sup> Pentium <sup>®</sup> or AMD K6 –class microprocessor, 32 megabytes of RAM, CD-ROM drive
<b>Software</b>	Windows NT 4.0 or greater (recommended) or Windows 95 or later
<b>Other</b>	90 MB free hard disk space (minimum install), 450 MB for a full install

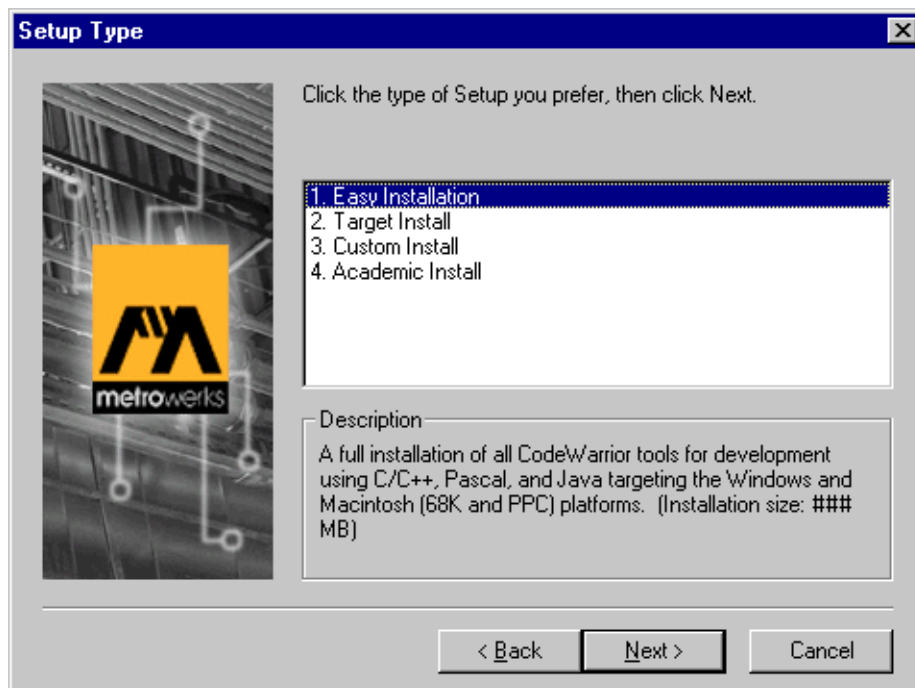
## Installation Overview on Windows

The installation software on the *CodeWarrior Professional Windows Tools* CD-ROM installs all the necessary components you will need to use CodeWarrior.

### Before You Install

Before installing the software on your Windows computer, you should:

**Figure 3.1** Metrowerks installation options



1. **Read the CodeWarrior/Metrowerks Software License.**  
Make sure you understand and agree with the [“Metrowerks Software License Agreement” on page 85](#) before installing the software.
2. **Make sure your software package is complete.**

This software package should contain:

1. *QuickStart Professional* guide (optional on some products)

2. A CodeWarrior Professional Windows Tools CD
3. A CodeWarrior Professional Reference CD
4. A registration card
5. Geekware catalog

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**NOTE** If any of these items are missing, contact your local distributor or Metrowerks sales ([sales@metrowerks.com](mailto:sales@metrowerks.com)). See [“Metrowerks Support” on page 79](#) for more information.

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3. **Make sure your computer system meets the specified hardware and software requirements.**

See [“Windows System Requirements” on page 19](#).

4. **Quit all running applications before installing.**

To avoid installation problems, it is highly recommended that you quit all running applications before launching the CodeWarrior installation software.

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**WARNING!** Be sure to turn off all virus protection software before running the installation software.

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## Windows Installation Procedure

To install *CodeWarrior Professional* on a computer running Windows:

**1. Back up and remove previous versions of CodeWarrior.**

The installation software on CodeWarrior Professional can't successfully install a new version of CodeWarrior if an older version of CodeWarrior already exists on your computer. To remove the old version of CodeWarrior, launch the **Uninstall CodeWarrior** program. This program is available from the **Start** menu.

**2. Launch the CodeWarrior installation program.**

Insert the *CodeWarrior Professional Windows Tools* CD into your CD-ROM drive.

If the **Auto Insert Notification** setting for your CD-ROM drive is enabled, a dialog box will appear automatically when the CD is inserted or when you double-click the CD icon. Click **Launch CodeWarrior Setup** to begin installing CodeWarrior.

Alternately, double-click the CD icon, then double-click the file named *Setup.exe* in the CD's top folder to begin installing CodeWarrior.

In a moment a window appears, welcoming you to CodeWarrior Setup. Click **Next** to continue to the software license.

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**TIP** You can click **Cancel** anytime during the setup process to stop the installation and exit the installation program.

---

**3. Read and agree to the software license.**

When the software license appears, please read it. If you agree to its terms, click **Yes** to continue installation. If you do not agree, click **No** to exit the setup program.

**4. Read the installation notes.**

When the installation note appears, please read it for any last minute information on this release. Click **Yes** to continue.

**5. Set your CodeWarrior options.**

The CodeWarrior Installer will now walk you through a series of dialogs, asking questions to determine what should be installed, where it should be installed, and various other installation options

before installation begins. Just follow along, answering the questions until you reach the summary window.

**6. Review your choices.**

Review all your installation choices. If you aren't satisfied, use the **Back** button to make changes. Otherwise, click **Next** to start the install operation. The Setup.exe program installs the chosen CodeWarrior components on your hard disk. You are required to **Restart** your computer at this point.

**7. After installation, read the release notes.**

After installation, please read the file "**What's New**" for the latest release information, and refer to the Release Notes directory for additional release details. For information on CodeWarrior's Y2K compliance, please read the note on "[CodeWarrior Year 2000 Compliance](#)" on page 10.

**8. Install CodeWarrior documentation and examples.**

Repeat steps 1 through 8 using the *CodeWarrior Professional Reference* CD to install the CodeWarrior documentation, programming examples, third-party books, and other programming goodies.

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**TIP** Some of the documentation on the Reference CD exists in uncompressed format to allow direct viewing on the CD.

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**9. Install a browser.**

A browser, like *Microsoft Internet Explorer* (MSIE) is required to access the HTML documentation. If you don't already have a browser on your hard disk, the MSIE installer can be found in the Documentation\Viewers folder on the *CodeWarrior Professional Reference* CD.

**10. Install Adobe Acrobat.**

To read the PDF documentation, Adobe's *Acrobat Reader* must be installed on your hard disk. If you don't already have *Acrobat* on your hard disk, launch its installation software in the Documentation\Viewers folder on the *CodeWarrior Professional Reference* CD.

## What's Installed

Once the installation software is finished, you will have a `Metrowerks` folder installed on your hard disk. Inside will be all the components you chose during installation. See the documentation for information on what has been installed.

## Creating a Windows Application

With CodeWarrior up and running on your PC, follow the steps below to create a simple console application.

1. **Choose the File→New menu item.**

A **New** window appears.

2. **Select the "C Console App" stationery.**

The filename is highlighted.

3. **Enter project name.**

Type in a project name (we used `Test.mcp`) and give it the `.mcp` extension. This enables the IDE to recognize the project as a CodeWarrior project.

4. **Select the location to save the project.**

5. **Click OK.**

The **New Project** window closes and the **Name New Project As** window appears

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**NOTE** Enable the **Create Folder** box in the **New Project** window to create a new folder for your project in the selected location

---

6. **Click Save.**

The **Name New Project As** window closes and a new project based upon the chosen stationery is created.

7. **Choose the File→New menu item.**

A new empty editor window opens.



**8. Choose File→Save.**

The **Save** dialog box appears. Name the source file as `Hello.c` and click **Save**. The `.c` extension enables the CodeWarrior IDE to recognize it as a source code file.

**9. Enter the example code.**

```
/* hello.c */
#include <stdio.h>
main(){
    printf("Hello Metrowerks\n");
    return 0;
}
```

---

**NOTE** A `hello.c` file exists in the new project. Please ignore the existing file and proceed with the steps to create a new file with the example code.

---

**10. With the editor window frontmost, choose Project→Add Window.**

The **Add Files** window appears. Use this window to specify which build targets should use the `Hello.c` file.

**11. Click OK.**

The `Hello.c` file is added to all build targets in the project window.

**12. Select `main.c` in the project window.**

The `main.c` filename is highlighted.

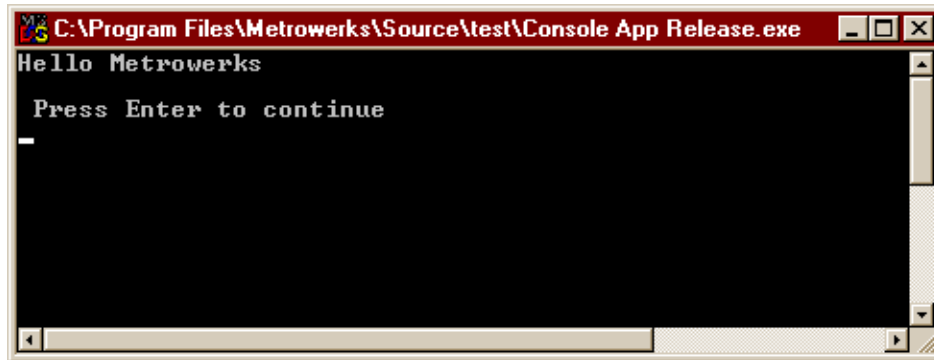
**13. Choose Project→Removing Selected Items.**

The `main.c` file is removed from the window.

**14. Choose Project→Run.**

The console project is compiled, linked, and run ([Figure 3.2](#)).

**Figure 3.2** Console output for Windows.



Congratulations! You just created a program using the CodeWarrior IDE on Windows. For information on programming resources, please refer to [“CodeWarrior Documentation” on page 71.](#)

# Mac<sup>®</sup> Installation and Programming of CodeWarrior<sup>®</sup>

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This chapter explains the installation procedure for the CodeWarrior Professional software package on Mac<sup>®</sup> computers. The chapter also provides you with an example program to create a console application using CodeWarrior. The topics in this chapter are:

- [Mac System Requirements](#)
- [Installing CodeWarrior on Mac](#)
- [Creating a Mac Application](#)

## Mac System Requirements

CodeWarrior requires the following hardware and software setup.

**Table 4.1** Mac requirements

<b>Hardware</b>	PowerPC (recommended) or MC68040 processor, 32 megabytes of RAM, a CD-ROM drive
<b>Software</b>	Mac OS System 8.1 or later, 68K-based Mac OS computers require CFM 68K Enabler 4.0 (provided by the CodeWarrior installation software for system software before Mac OS 8)
<b>Other</b>	120 MB free hard disk space (minimum install), 400 MB for a full install

## Installing CodeWarrior on Mac

The installation software on the *CodeWarrior Professional Mac Tools* CD-ROM installs all the necessary components you need to use CodeWarrior. The installation software presents the options listed in [Table 4.2](#).

**Table 4.2** Installation options for Mac

This option...	Installs these items on your hard disk
<b>Full Mac Install</b>	all CodeWarrior development tools, compilers, linkers, libraries, and help files for developing software for Mac OS
<b>Full Java Install</b>	all CodeWarrior development tools, compilers, linkers, libraries, and help files for developing software for Java™ VM (Virtual Machine)
<b>Win32/x86 Install</b>	all CodeWarrior development tools, compilers, linkers, libraries, and help files for developing software for the Microsoft® Win32 API running on Intel®-compatible x86 processors
<b>Academic Minimal Install for 68K</b>	only essential CodeWarrior development tools, compilers, linkers, libraries, and help files for developing software for Mac OS 68K
<b>Academic Minimal Install for PPC</b>	only essential CodeWarrior development tools, compilers, linkers, libraries, and help files for developing software for PPC
<b>Custom Options</b>	Enables you to customize installation and choose options based on project requirements.

## Before You Install

Before installing the software on your Mac OS computer, you should:

**1. Read the CodeWarrior Software License.**

Make sure you understand and agree with the [“Metrowerks Software License Agreement” on page 85](#) before installing the software.

**2. Make sure your software package is complete.**

This software package should contain:

1. *QuickStart Professional* guide (optional on some products)
2. A *CodeWarrior Professional Mac OS Tools* CD
3. A *CodeWarrior Professional Reference* CD
4. A registration card
5. Geekware catalog

---

**NOTE** If any of these items are missing, contact your local distributor or Metrowerks sales ([sales@metrowerks.com](mailto:sales@metrowerks.com)). See [“Metrowerks Support” on page 79](#) for more information.

---

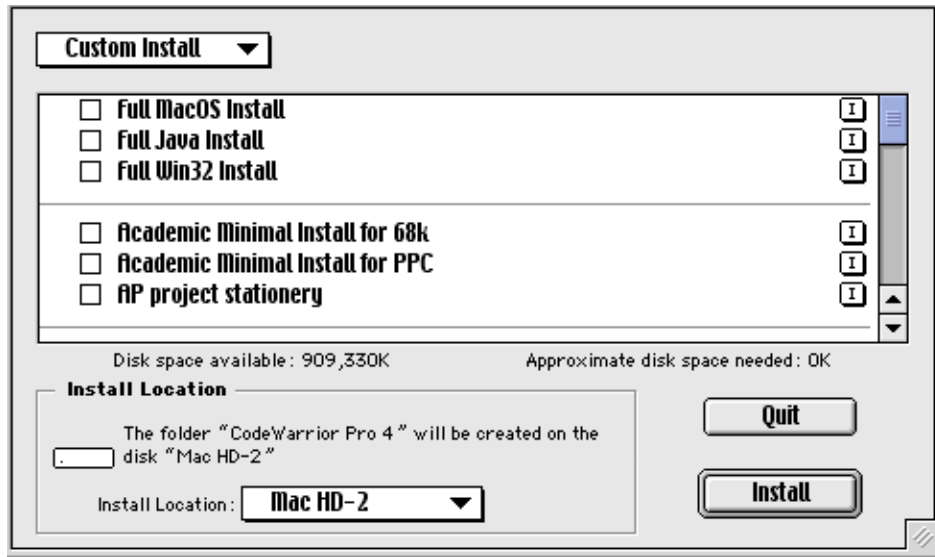
**3. Make sure your computer system meets the specified hardware and software requirements.**

See [“Mac System Requirements” on page 27](#).

**4. Quit all running applications before installing.**

To avoid installation problems, it is highly recommended that you quit all running applications before running the Metrowerks software installer.

Figure 4.1 CodeWarrior installer options



---

**WARNING!** Be sure to turn off all virus protection and file sharing before running the installer.

---

**TIP** To get more information about an option, click the **I** button to the item's right. A dialog will appear displaying the option's size and content.

---

## Mac Installation Procedure

To install CodeWarrior Professional on your Mac computer:

1. **Launch the CodeWarrior installation software.**

Insert the *CodeWarrior Professional Mac OS Tools* CD-ROM into your CD-ROM drive and wait for the CD's icon to appear on the computer's desktop.

Double-click on the CD's icon. Then double-click the file named *CWPro 5 Tools Installer* in the CD's top folder to launch the application and display the welcome screen.

Click **Continue** to display the software license for CodeWarrior Professional.

2. **Read the software license.**

If you agree with the license, click **Accept** to display the release notes message.

3. **Read the release notes.**

When the release notes appear, please read them. Then click **Continue** to display the options window. For information on CodeWarrior's Y2K compliance, please read the note on ["CodeWarrior Year 2000 Compliance" on page 10.](#)

4. **Select a destination for the files.**

Choose location to install CodeWarrior on your hard disk using the Install Location popup menu ([Figure 4.2](#)).

**Figure 4.2 Install Location**



Choose the **Select Folder** from the popup menu to install to a specific folder on the currently selected disk drive. Click **Switch Disk** to choose the next available disk drive.

5. **Choose your installation options.**

See ["Installing CodeWarrior on Mac" on page 28](#) for descriptions of the installable items. After choosing the components to place on your computer, click **Install**. The CodeWarrior installation process may take several minutes.

6. **After installation, read the release notes.**

If the installation software recommends restarting your computer, do so to make sure any system extensions are properly initialized before using CodeWarrior. Then please read the file "What's New" for the latest release information, and refer to the CW Release Notes folder for additional release details.

7. **Install CodeWarrior documentation and examples.**

Repeat steps 1 through 6 using the "CWPro Reference Installer" application on the *CodeWarrior Professional Reference* CD to install the

CodeWarrior documentation, programming examples, third-party books, and other programming goodies.

---

TIP Some of the documentation on the exists in uncompressed format to allow direct viewing on the CD.

---

**8. Install Microsoft Internet Explorer.**

A browser, like *Microsoft Internet Explorer* (MSIE) is required to access the HTML documentation. If you don't already have a browser on your hard disk, the MSIE installer can be found in the `Documentation:Viewers` folder on the *CodeWarrior Professional Reference* CD.

**9. Install Adobe Acrobat.**

To read the PDF documentation, Adobe's *Acrobat Reader* must be installed on your hard disk. If you don't already have *Acrobat* on your hard disk, launch its installation software in the `Documentation:Viewers` folder on the *CodeWarrior Professional Reference* CD.

## What's Installed

Once the installation software is finished, you will have a `Metrowerks` folder installed on your hard disk. Inside will be all the components you chose during installation. See the documentation for information on what has been installed.

## Creating a Mac Application

With CodeWarrior up and running on your Macintosh, follow the steps below to create a simple console application.

**1. Choose File→New Project.**

The **New Project** window and a list of options appear.

**2. Click the triangle on the left.**

A submenu appears with a sub-stationery list.



3. **Select "Std C Console Multi-Target" from the stationery list.**

The "Std C Console Multi-Target" stationery is located in the MacOS->C\_C++->Standard Console folder. Use the disclosure triangles to view the contents of the stationery subfolders.

4. **Click OK.**

The **Name New Project As** window appears.

5. **Enter the project name.**

Type in a project name and give it the .mcp extension. This enables the IDE to recognize the project as a CodeWarrior project. Also, use the standard navigation controls to specify the folder where the project file should be saved.

6. **Click Save.**

The **Name New Project As** window closes and a new project based upon the chosen stationery is created.

7. **Choose File →New.**

A new empty editor window appears.

8. **Enter the example code.**

In the empty editor window, enter the following source code:

```
/* hello.c */
#include <stdio.h>
main() {
    printf("Hello Metrowerks\n");
    return 0;
}
```

---

**NOTE** A hello.c file exists in the new project. Please ignore the existing file and proceed with the steps to create a new file with the example code.

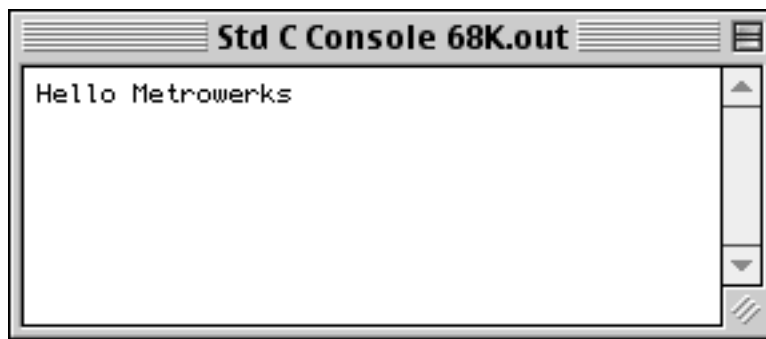
---

9. **Choose File →Save.**

The **Save** dialog box appears. Name the source file `Hello.c` and click **Save**. The .c extension enables the CodeWarrior IDE to recognize it as a source code file.

10. **With the editor window frontmost, choose Project→Add Window.**  
The **Add Files** window appears. Use this window to specify which build targets should use the `Hello.c` file.
11. **Click OK.**  
The `Hello.c` file is added to all build targets in the project window.
12. **Select `HelloWorld.cp` in the project window.**  
The `HelloWorld.cp` filename is highlighted.
13. **Choose Project→Removing Selected Items.**  
The `HelloWorld.cp` file is deleted.
14. **Choose Project→Run.**  
The project is compiled, linked, and run ([Figure 4.3](#)).

**Figure 4.3** Console output for Mac.



Congratulations! You just created a program using the CodeWarrior IDE on your Mac. For information on programming resources, please refer to [“CodeWarrior Documentation” on page 71](#).

# Solaris™ Installation and Programming of CodeWarrior®

This chapter explains the CodeWarrior Professional system requirements for operating on Sun™ Solaris™, how to install the CodeWarrior software, and walks you through the creation of a console application. The topics in this chapter are:

- [Solaris System Requirements](#)
- [Installing CodeWarrior on Solaris](#)
- [Creating a Solaris Application](#)

## Solaris System Requirements

The CodeWarrior IDE requires the following hardware and software:

**Table 5.1 Solaris Requirements**

<b>Hardware</b>	Sparc-based machine, at least 64 megabytes of RAM, CD-ROM drive
<b>Software</b>	Solaris version 2.5.1 or later, an X11-R5 server or later, a CDE window manager that is vX11-r5 or later, Motif 1.2 or later
<b>Other</b>	80 MB free hard disk space

## Installing CodeWarrior on Solaris

The installation software on the CodeWarrior Professional Solaris CD-ROM installs all the necessary components you will need to use CodeWarrior. The installation software presents the options listed in [Table 5.2](#).

**Table 5.2** Installation types for Solaris

This option...	Installs these items on your hard disk
CodeWarrior IDE & Java Support	all CodeWarrior development tools, compilers, linkers, libraries, and help files, as well as the Sun JDK version 1.1.6 and 1.2
GCC 2.8.1 Support	configures the IDE for GCC 2.8.1 (which must be previously installed)
CodeWarrior Documentation	documentation on functions and features the CodeWarrior IDE and using the IDE to write code for the Java VM on Solaris
CodeWarrior Examples	a set of example CodeWarrior projects and tutorials

### Before You Install

Before installing the software on your computer, you should:

1. **Read the CodeWarrior/Metrowerks Software License.**

Make sure you understand and agree with the [“Metrowerks Software License Agreement” on page 85](#) before installing the software.

2. **Make sure your software package is complete.**

This software package should contain:

1. *QuickStart Professional* guide (optional on some products)
2. A *CodeWarrior Professional Solaris Tools* CD
3. A registration card
4. Geekware catalog

**NOTE** If any of these items are missing, contact your local distributor or Metrowerks sales ([sales@metrowerks.com](mailto:sales@metrowerks.com)). See [“Metrowerks Support” on page 79](#) for more information.

---

3. **Make sure your computer system meets the specified hardware and software requirements.**

See [“Solaris System Requirements” on page 35](#).

## Solaris Installation Procedure

To install CodeWarrior Professional:

1. **Launch the CodeWarrior installation program.**

Insert the *CodeWarrior Professional Solaris* CD-ROM into your CD-ROM drive.

The installer program can be found in the following directory: /cdrom/cwpro\_solaris/. Open a terminal window and run the installer like so:

```
cd /cdrom/cwpro_solaris
./install-sh
```

The installer will display a welcome message. Read it and press space to continue. However, you must first ensure you have “write” privileges.

The installer will check your environment to verify that it is compatible, and notify you if any incompatibilities are found. Type “y” (without the quotes) to continue once the check is complete.

---

**TIP** You can type “q” (without the quotes) at most prompts during the setup process to stop the installation and exit the installation program.

---

2. **Read the software license.**

When the software license appears, please read it. If you agree, type “y” when you are asked if you accept the terms of the agreement.

**3. Select destination for the files.**

By default, the installer will set the install path to `/usr/local`. If you would like to install to another directory, type “n” to this prompt. Otherwise, type “y” to continue.

**4. Choose components to install.**

See [“Installing CodeWarrior on Solaris” on page 36](#) for a description of components that can be installed with this installer. The installer will ask you whether you want to install each one of these components. Type “y” to install a component, or “n” to skip it.

---

**NOTE** If you choose to install GCC support, the installer will ask you to locate the GCC directory at this point.

---

**5. Review your choices.**

The installer will list the components you selected, and ask you if this is correct. Type “y” to continue, or “n” to make changes.

**6. After installation, read the release notes.**

After installation, please read the release notes for the latest release information. For information on CodeWarrior’s Y2K compliance, please read the note on [“CodeWarrior Year 2000 Compliance” on page 10](#).

**7. Install Adobe Acrobat.**

To read CodeWarrior’s documentation, you must have Adobe Acrobat Reader installed on your system. Open the `Documentation_Viewers` directory in the `cdrom` directory and untar the `acrdsrch_solaris_301.tar.gz` file to install Acrobat Reader.

## **What’s Installed**

Once the installation software is finished, you will have a `cwpro4` directory installed on your system. Inside will be all the components you chose during installation. See `INSTALL.LOG` for information on what has been installed.

## Creating a Solaris Application

Follow these steps to create a simple console application.

1. **Choose File →New Project.**  
The **New Project** dialog box appears.
2. **Click the expansion control next to C\_C++**  
The C\_C++ group opens.
3. **Click C to select the C stationery.**
4. **Click OK.**  
The **File Save** dialog box appears.

---

**NOTE** Check the **Create Folder** box in the **New Project** window to create a new folder for your project in the selected location

---

5. **Enter the project name.**  
Type in a project name and give it file extension .mcp (we used test.mcp). This enables the IDE to recognize the project file as a CodeWarrior project.
6. **Use the standard navigation controls to specify and save the new project.**
7. **Click Save.**  
The **File Save** window closes and a new project based on the chosen stationery is created.
8. **Choose File →New.**  
A new empty editor window opens.
9. **Choose File →Save.**  
The **File Save** dialog box appears. Name the file HelloWorld.c and click **Save**. The .c extension enables the IDE to recognize this file as a source code file.

**10. Enter the sample code:**

```
/* helloworld.c */
#include <stdio.h>
int main(void){
    printf("Hello world, this is CodeWarrior!\n");
    return 0;
}
```

---

**NOTE** A `hello.c` file exists in the new project. Please ignore the existing file and proceed with the steps to create a new file with the example code.

---

**11. Select the Sources group in the project window**

The **Sources** group is highlighted.

**12. With the editor window frontmost, choose Project→Add Window.**

The `HelloWorld.c` file is added to the project window.

**13. Select the file named "hello.c" in the project window**

The `hello.c` file is highlighted.

**14. Choose Project→Remove Selected Items.**

The `hello.c` file is removed from the project window.

**15. Choose Project→Build .**

The project is compiled and the executable is built.

**16. Run the executable. It is named "a.out", and is in the same folder as the project.**

The executable runs and the console output appears ([Figure 5.1](#)).

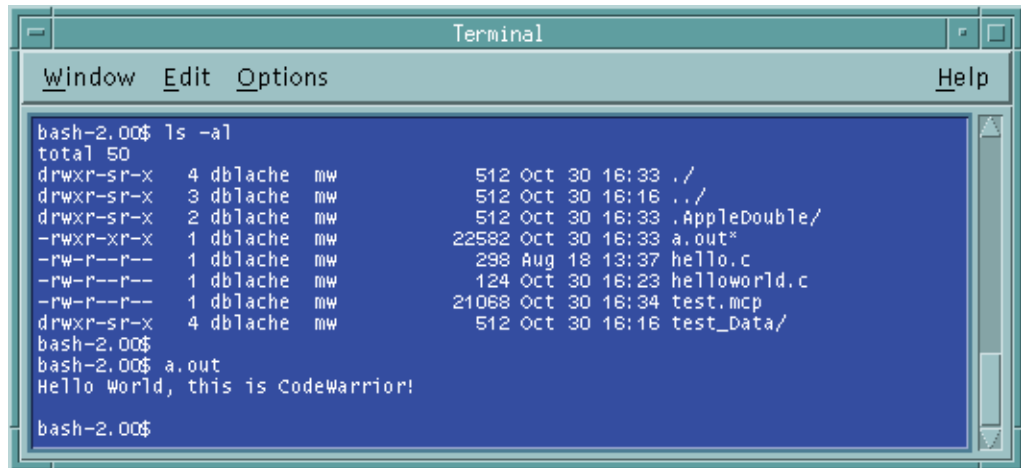
---

**NOTE** This must be run from a terminal window or the File Manager.

---



Figure 5.1 Console output for Solaris



```
Terminal
Window Edit Options Help
bash-2.00$ ls -al
total 50
drwxr-sr-x  4 dblache  mw           512 Oct 30 16:33 ./
drwxr-sr-x  3 dblache  mw           512 Oct 30 16:16 ../
drwxr-sr-x  2 dblache  mw           512 Oct 30 16:33 .AppleDouble/
-rwxr-xr-x  1 dblache  mw        22582 Oct 30 16:33 a.out*
-rw-r--r--  1 dblache  mw          298 Aug 18 13:37 hello.c
-rw-r--r--  1 dblache  mw          124 Oct 30 16:23 helloworld.c
-rw-r--r--  1 dblache  mw        21068 Oct 30 16:34 test.mcp
drwxr-sr-x  4 dblache  mw           512 Oct 30 16:16 test_Data/
bash-2.00$
bash-2.00$ a.out
Hello World, this is CodeWarrior!
bash-2.00$
```

Congratulations! You just created a program using the CodeWarrior IDE on Solaris. For information on programming resources, please refer to [“CodeWarrior Documentation” on page 71](#).



# Linux Installation and Programming of CodeWarrior®



This chapter explains the CodeWarrior Professional for Linux system requirements, how to install the CodeWarrior software, and walks you through the creation of a console application. The topics in this chapter are:

- [Linux System Requirements](#)
- [Installing CodeWarrior on Linux](#)
- [Creating a Linux Application](#)

## Linux System Requirements

The CodeWarrior IDE requires the following hardware and software:

**Table 6.1 Linux Requirements**

<b>Hardware</b>	Intel® Pentium® or AMD K6®-class microprocessor, at least 64 megabytes of RAM, CD-ROM drive
<b>Software</b>	Red Hat® Linux for x86 version 5.2 or later, an X11-R5 display server
<b>Other</b>	40 MB free hard disk space

## Installing CodeWarrior on Linux

The installation software on the CodeWarrior Professional for Linux CD-ROM installs all the necessary components you will need to use CodeWarrior.

There are a couple things you should be aware of before running the CodeWarrior install script. This section discusses the following topics:

- [Metrowerks Software License](#)
- [Software Package Contents](#)
- [EGCS for C++ Development](#)
- [About DDD](#)
- [Installing CodeWarrior](#)

### Metrowerks Software License

Make sure you understand and agree with the software license before installing the software. The software license can be found on the root level of the CodeWarrior CD, in a file named LICENSE.

### Software Package Contents

This software package should contain:

1. *QuickStart Professional* guide (optional on some products)
2. A *CodeWarrior Professional* CD-ROM
3. A registration card
4. Geekware catalog

---

**NOTE:** If any of these items are missing, contact your local distributor or Metrowerks sales ([sales@metrowerks.com](mailto:sales@metrowerks.com)).

---

## EGCS for C++ Development

The stock Red Hat 5.2 C/C++ development installation does not contain everything needed to do C++ development with CodeWarrior. If you wish to use CodeWarrior for C++ development, you need to build and install your own copy of GCC or EGCS. It is best if this is done before you run the CodeWarrior install script. If you install EGCS after you have installed CodeWarrior, you will need to run the `config_gcc_links.sh` script manually so that CodeWarrior will be able to use it.

---

**NOTE** This process will not remove the copy of `gcc` that is installed into `/bin` in the stock RedHat install.

---

In the `Third_Party` directory you will find the EGCS archive named `egcs-1.1.2.tar.gz`. Following are brief instructions on how to install it.

---

**NOTE** You will likely need to be `root` for step three to work correctly.

---

**1. Copy and decompress the archive.**

Copy the `egcs-1.1.2.tar.gz` archive to your hard drive from the `Third_Party` directory on the CodeWarrior CD and decompress the archive.

**2. Create the EGCS build directory.**

Create a directory at the same level as the decompressed files called `egcs-linux-build` (or something similar).

**3. Configure and install egcs.**

`cd` to the build directory and enter the following commands:

```
./egcs-1.1.1/configure --enable-shared
make bootstrap
make install
```

The two `make` steps will take some time. EGCS will be installed in `/usr/local`. Make sure that `/usr/local` comes before `/bin` in your `PATH` environment variable so that CodeWarrior finds the correct version of `gcc`. Typing which `gcc` or `gcc -v` after

installation is complete will help you verify that CodeWarrior will find the correct version of gcc.

The latest EGCS C/C++ development releases can be found here:

`ftp://egcs.cygnus.com/pub/egcs/releases`

For more info about egcs see:

`http://egcs.cygnus.com/`

## About DDD

We have included ddd, a visual front-end to the popular debugger, gdb. The ddd package is an optional install, and is not required by CodeWarrior to operate. However, the tutorial in this manual shows ddd windows. So, you may want to install ddd before taking the tutorial.

---

**NOTE** You will likely need to be `root` for `rpm` to work correctly.

---

Copy the `ddd-static-3.1.3-1.i386.rpm` file to your hard drive from the `Third_Party` directory on the CodeWarrior CD and type the following command:

```
rpm -i ddd-static-3.1.3-1.i386.rpm
```

To use ddd in your projects, see the section on third party debuggers under in the *Targeting Linux* manual.

## Installing CodeWarrior

The CodeWarrior installer is a script named `install-sh` that installs the CodeWarrior IDE, and optionally the documentation and example projects. After installation is complete, a configuration script named `config_gcc_links.sh` creates soft links in CodeWarrior's directory that point to the directories that the gcc compiler looks in to find system header files.

Perform the following steps to install CodeWarrior onto your Linux system:

**1. Launch the CodeWarrior installation program.**

Insert the *CodeWarrior Professional* CD-ROM into your CD-ROM drive.

The install script can be found in root directory of the *CodeWarrior Professional* CD-ROM. Open a terminal window, cd to the directory you mounted the CD in, and run the installer like so:

```
./install-sh
```

---

**TIP:** You can type “q” (without the quotes) at most prompts during the setup process to stop the installation and exit the installation program.

---

**2. Read the software license.**

The install script uses more to display the Metrowerks Software License. When the software license appears, please read it. If you agree, type “y” when you are asked if you accept the terms of the agreement.

**3. Choose components to install.**

There are two components that can be installed with this installer: the CodeWarrior IDE, and the CodeWarrior documentation and examples. The installer will ask you whether you want to install each one of these components. Type “y” to install a component, or “n” to skip it.

**4. Select destination for the files.**

By default, the installer will set the install path to `/usr/local`. The installer will ask you if you would like to change the installation directory. If you would like to change it, type “y”; otherwise, type “n” to continue.

If you answered “y”, the installer will ask you to specify the full path of the directory into which you would like CodeWarrior to be installed.

**5. After installation, read the release notes.**

After installation, please read the release notes for the latest release information.

## 6. Install Adobe Acrobat.

CodeWarrior's documentation is provided in both postscript format and acrobat PDF format. To view the acrobat PDF format, you must have Adobe Acrobat Reader installed on your system. Open the `Documentation_Viewers` directory in the CD-ROM directory and untar the `arobat.reader.3021.installer.tar` file to install Acrobat Reader.

To launch CodeWarrior you execute the `cwide` script found in the following location:

```
metrowerks/CodeWarrior3.3/
```

You may wish to place a softlink to this script in a directory in your `PATH`. For example:

```
ln -s /usr/local/metrowerks/CodeWarrior3.3/cwide  
/usr/local/bin/cwide
```

This way you can launch the IDE with the simple command: `cwide` from any terminal.

See the `INSTALL` readme file on your *CodeWarrior Professional* CD-ROM for more information.

## What's Installed on Linux

Once the installation software is finished, you will have a `cwpro` directory installed on your system. Inside will be all the components you chose during installation. See `INSTALL.LOG` for information on what has been installed.



## Creating a Linux Application

Follow these steps to create a simple console application.

1. **Choose File →New Project.**

The **New Project** dialog box appears.

2. **Click the expansion control next to C\_C++.**

The C\_C++ group opens.

3. **Select C to select the C stationery.**

4. **Click OK.**

The **File Save** dialog box appears.

---

**NOTE** Check the **Create Folder** box in the **New Project** window to create a new folder for your project in the selected location

---

5. **Enter the project name.**

Type in a project name and give it file extension .mcp (we used test.mcp). This enables the IDE to recognize the project file as a CodeWarrior project.

6. **Use the standard navigation controls to specify and save the new project.**

7. **Click Save.**

The **File Save** window closes and a new project based on the chosen stationery is created.

8. **Choose File→New.**

A new empty editor window opens.

9. **Choose File→Save .**

The **File Save** dialog box appears. Name the file HelloWorld.c and click **Save**. The .c extension enables the IDE to recognize this file as a source code file.

**10. Enter the sample code:**

```
/* helloworld.c */
#include <stdio.h>
int main(void){
    printf("Hello world, this is CodeWarrior!\n");
    return 0;
}
```

---

**NOTE** A `hello.c` file exists in the new project. Please ignore the existing file and proceed with the steps to create a new file with the example code.

---

**11. Select the Sources group in the project window**

The **Sources** group is highlighted.

**12. With the editor window frontmost, choose Project→Add Window.**

The `HelloWorld.c` file is added to the project window.

**13. Select the file named "hello.c" in the project window**

The `hello.c` file is highlighted.

**14. Choose Project→Remove Selected Items.**

The `hello.c` file is removed from the project window.

**15. Choose Project→Build.**

The project compiles and the executable built.

**16. Run the executable. It is named "a.out", and is in the same folder as the project.**

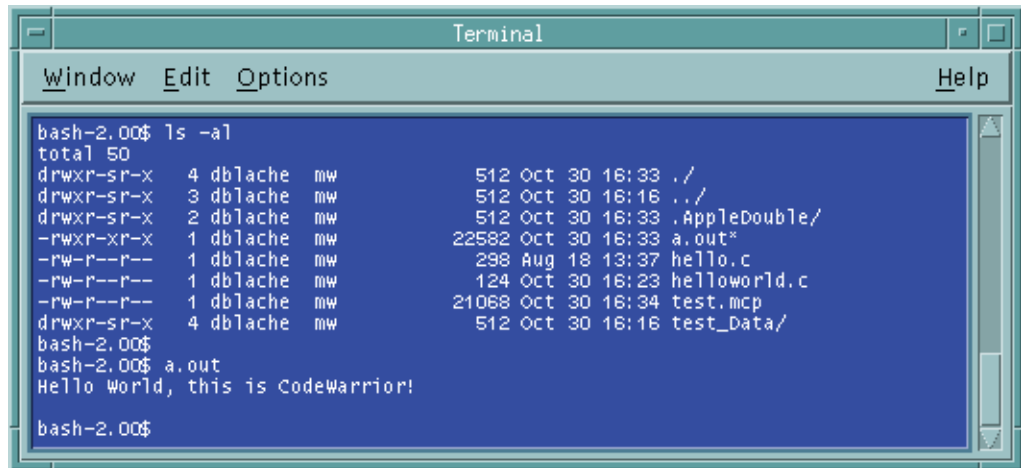
The executable runs and the console output (shown in [Figure 6.1](#)) appears.

---

**NOTE** This must be run from a terminal window or the File Manager.

---

Figure 6.1 Console output for Linux



```
Terminal
Window Edit Options Help
bash-2.00$ ls -a
total 50
drwxr-sr-x  4 dblache  mw           512 Oct 30 16:33 ./
drwxr-sr-x  3 dblache  mw           512 Oct 30 16:16 ../
drwxr-sr-x  2 dblache  mw           512 Oct 30 16:33 .AppleDouble/
-rwxr-xr-x  1 dblache  mw        22582 Oct 30 16:33 a.out*
-rw-r--r--  1 dblache  mw          298 Aug 18 13:37 hello.c
-rw-r--r--  1 dblache  mw          124 Oct 30 16:23 helloworld.c
-rw-r--r--  1 dblache  mw        21068 Oct 30 16:34 test.mcp
drwxr-sr-x  4 dblache  mw           512 Oct 30 16:16 test_Data/
bash-2.00$
bash-2.00$ a.out
Hello World, this is CodeWarrior!
bash-2.00$
```

Congratulations! You just created a program using the CodeWarrior IDE on Linux. For information on programming resources, please refer to [“CodeWarrior Documentation” on page 71](#).



# A Quick Tour of CodeWarrior



This short tour gives new users a glimpse of the CodeWarrior Integrated Development Environment (IDE).

## Guided Tour Overview

The CodeWarrior IDE is the center of CodeWarrior software development. From the IDE you edit, browse, compile, link, debug, and do many other programming tasks.

In this quick tour, you'll learn to do these tasks while working on an example project, `gnu_go.mcp`:

- [Launching the CodeWarrior IDE](#)
- [Setting IDE Preferences](#)
- [Opening a CodeWarrior Project](#)
- [Using the Project Window](#)
- [Using the CodeWarrior Editor](#)
- [Target Settings Options](#)
- [Building Projects with CodeWarrior](#)
- [Where to Go From Here](#)

## Launching the CodeWarrior IDE

In this section you learn how simple it is to launch the CodeWarrior IDE, thereby opening the gateway to a powerful set of programming tools and beginning your career as a code warrior.

Before you can begin learning about the CodeWarrior IDE, you'll need to launch it.

Windows Click the **Start** button in the Task bar, choose **Programs**, choose **CodeWarrior Pro5**, then choose the **CodeWarrior IDE** item.

---

**NOTE** The CodeWarrior IDE item will be in a different place in the Start menu if you didn't use the Start menu default setting while installing CodeWarrior.

---

Mac OS Double-click the CodeWarrior IDE icon in the `Metrowerks CodeWarrior` folder. The CodeWarrior IDE application launches, and its menu bar appears at the top of the screen.

Solaris /Linux Type `cwide` in any terminal window. An action/run dialog box appears. Click OK. The IDE is launched on a Run terminal window.

---

**NOTE** This procedure of launching the IDE on Solaris assumes that the CodeWarrior directory has been included in your path.

---

The next section shows you how to customize the IDE.

## Opening a CodeWarrior Project

Open a project file in exactly the same way you open any other file from within an application on your computer. In this step you open the `gnu_go.mcp` project file.

---

**NOTE** The `gnu_go.mcp` project is stored on the CD in compressed form, either as a `.zip` (Windows) or a `.sit` (Mac) file. You will need to uncompress the archive associated with your platform to use the project files.

---

A project is a collection of files and settings that the IDE's compilers and linkers use to create a program or other piece of software.

To open a project choose the **File**→**Open** menu item to display a file dialog box. Then locate and select the `gnu_go.mcp` project file and click Open. This file is in the `CodeWarrior Examples` folder in the `CoreTutorials` folder on the *CodeWarrior Professional Reference* CD.

The IDE opens the project file and displays a Project window.

Now that you have a project open, let's explore the features of the Project window.

## Using the Project Window

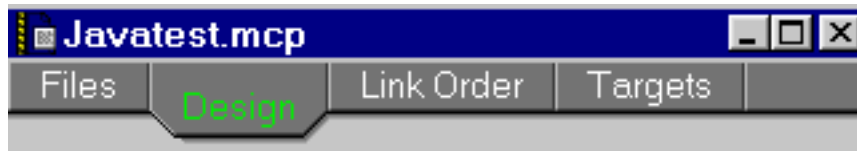
To effectively use the CodeWarrior IDE, you should be familiar with the Project window. The window displays lots of information about a project, so identifying and understanding that information is our next step. The Project window has these items:

- [View Tabs](#)
- [Toolbar](#)
- [Project Window Columns](#)
- [Groups](#)
- [Interface Pop-ups](#)
- [Context Pop-ups](#)

## View Tabs

The Project window uses view tabs to present different faces of information in the project. Click a view tab to change the information displayed in the Project window.

**Figure 7.1** View tabs in the project window



The Project window uses these view tabs:

- **Files**—enables you to inspect file information in a project.
- **Design** - enables you to create and use multiple designs for a project. Please see the *IDE User Guide* for a detailed description of RAD features.
- **Link Order/Segments**—enables you to specify the order in which files are compiled.
- **Targets**— enables you configure the targets a project will build and the order in which the targets are built.

---

**NOTE** The Link Order view sometimes has a different name. For example, when working with Mac OS 68K projects, the Link Order view becomes the Segment view and in embedded projects it displays as Overlays.

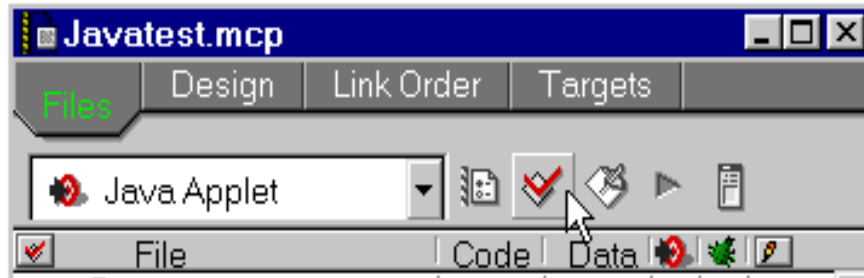
---

## Toolbar

The Toolbar shows icon buttons that correspond to CodeWarrior IDE commands and functions.



**Figure 7.2** The default toolbar in the Project window



The toolbar appears in two formats:

- **Window Toolbar**—present in several windows within CodeWarrior, including the Project window. An example appears in [Figure 7.2](#).
- **Floating Toolbar**—appears as a floating palette that may optionally be anchored under the IDE's menu bar.

For information on customizing, hiding, and showing toolbars, see the *IDE User Guide*.

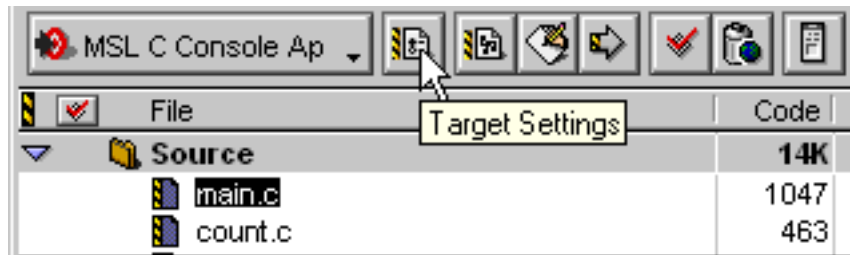
## Toolbar Tooltips

Use Tooltips to identify a button in a toolbar.

Windows	To view a Tooltip, position the mouse pointer over the button without moving it for a moment.
Mac OS	To view a Tooltip, press the Control key and position the mouse pointer over a toolbar button.
Solaris/Linux	Toolbar Tooltips are currently unavailable for Solaris.

The Tooltip appears, describing the icon underneath the mouse pointer ([Figure 7.3](#)).

**Figure 7.3 Viewing a Tooltip (on Windows)**





## Project Window Columns

The columns that appear in the Project window's File view are listed in the following table.

**Table 7.1 Columns in the Project window**

This column...	presents this information
	The Touch column indicates whether a file needs to be compiled.
<b>File</b>	The File column identifies the names of files and groups in the project.
<b>Code</b>	The Code column shows the size of the compiled executable code.
<b>Data</b>	The Data column shows the size of non-executable data.
	The Target column indicates whether an item is in the project's current target.
	The Debug column indicates whether debugging information will be generated for an item.

This column...	presents this information
	The Checkout Status column indicates the current status of an item in a version control system. This column only appears if a version control system is active.
	The Link column indicates whether the object code generated from an item will be linked into the target. This column only appears in the <b>Targets</b> view.

## Groups

Groups in the File view provide a way to organize project files into logical categories to help you keep track of your files. Groups do not affect the binary code produced by the compilers, only the organization of files within the Project window. Groups can be expanded to display their contents, collapsed to hide their contents, rearranged, added, and deleted from a project.

---

**TIP** Groups in the **Link Order New/Segments** view might have an effect on how object code is arranged in your program. Please refer the appropriate *Targeting* manual for the platform specific details

---

## Interface Pop-ups

Interface Pop-ups reveal additional information about the group or files associated with it. The two types of interface pop-ups are:

- **Group's Interface Pop-up**—displays a list of all files in that group.
- **File's Interface Pop-up**—displays a list of interface files required to compile the file, and allows you to “touch” the file which forces it to recompile on the next update or make operation.

To view an Interface pop-up click on the pop-up menu to the extreme right of the file or group name. The file or group interface pop-up appears. Please refer to [Figure 7.7 on page 64](#).

## Context Pop-ups

The two forms of Context Pop-ups available in the Project window include:

- **Group Context Pop-up**—enables you to check syntax, preprocess, precompile, compile, disassemble, or remove it from the project.
- **File Context Pop-up**—does everything the Group Context Pop-up does as well as showing the File Path, and Reveal in Finder the file's location.

To view a Context Pop-up, position the cursor over a file or group name, then click and hold the mouse button down without moving the mouse (Macintosh) or right-click(Windows). In a moment the File context pop-up appears.

Now that you have a better understanding of the Project Manager, let's move onto the next section on setting preferences.

## Setting IDE Preferences

With the CodeWarrior IDE up and running, let's introduce you to the Preferences dialog box. You use the Preferences dialog box to set options that apply to all projects with which you will work with in the CodeWarrior IDE.

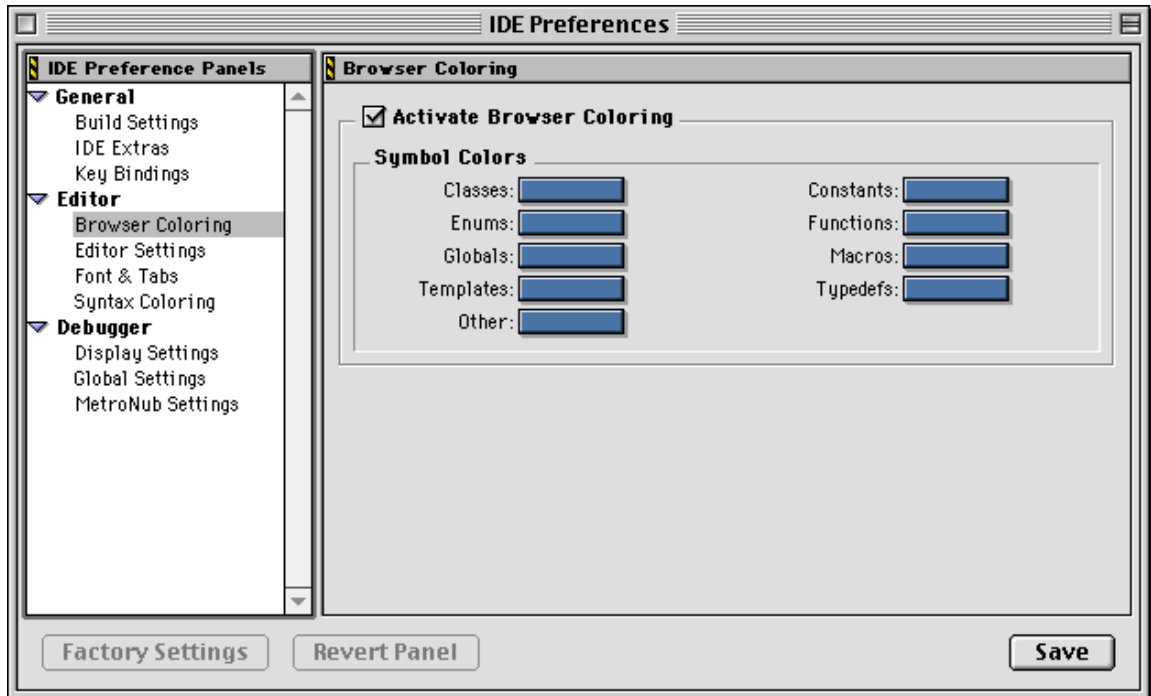
This section shows you how to do these tasks with the Preferences dialog box:

- [Opening the Preferences Dialog Box](#)
- [Viewing and Setting Options in Preference Panel](#)
- [Closing the Preferences Dialog Box](#)

### Opening the Preferences Dialog Box

To change a preference, the Preferences dialog box must be open. To open the Preferences dialog box choose **Edit**→**Preferences**. The Preferences dialog box appears on the screen ([Figure 7.4](#))

Figure 7.4 .The Preferences dialog box



Let's take a moment to identify some of the items in the Preferences dialog box.

- **IDE Preference Panels** list in the **Edit** menu appears on the left side of the window. It shows a list of available **preference panels**. Selecting an item in this list displays its corresponding panel on the right side of the window.
- **Preference Panel is a subpanel and** displays the panel selected in the **IDE Preference Panels** list. Changes made in the panel are reflected in all new projects you create afterward.

---

**NOTE** The preference panels are fully discussed in the *IDE User Guide* in the chapters *Configuring IDE Options* and *Configuring Target Options*.

---

The Preferences dialog box has three buttons that are always available to assist you in setting the various preference panel options ([Figure 7.5](#)).

**Figure 7.5** The Preference window's buttons



These buttons are:

- **Factory Settings** button resets the current panel to the default settings. Using Factory Settings only affects the current panel's settings.
- **Revert Panel** button restores the current panel settings to its initial state, i.e., when the panel was first opened. Click this button if, after making changes to a panel's options, you decide the original settings were just fine.
- **Save** button commits any changes made in the preference panel. Once you're satisfied with the settings in the panel, click Save to commit to the changes.

## Viewing and Setting Options in Preference Panel

There are several different preference panels available in the Preference Panels list. To set a particular preference, you must choose its panel.

To view a Preference panel, click the panel name in the Preference Panel list or use the Up and Down arrow keys to change the selection. The selected panel name is highlighted in the Preference Panel List and the panel appears to the right of the list.

## Closing the Preferences Dialog Box

Once you finish setting your global preferences, just close the window. To close the Preferences dialog box, click the Preference window's close box or choose **Close** from the **File** menu. The Preferences dialog box closes.

Now that you understand the use of the Preferences dialog box, let's explore the process of opening a CodeWarrior project.

## Using the CodeWarrior Editor

The CodeWarrior Editor window is where you will spend most of your time creating, editing, and navigating through source code for your project. This section introduces you to these editing tasks:

- [Creating a New Text File](#)
- [Opening a File](#)
- [Entering Text into a File](#)
- [Saving Changes to a File](#)

### Creating a New Text File

To create a new text file, just choose **File**→**New Text File**. A new untitled editor window will appear, ready for you to enter, edit, and save text or source code.

### Opening a File

There are a variety of ways to open a source code or text file from within a project.

#### Opening a file from the Project window

You can open any editable text file listed in the Project window. In this step you open the `main.c` file from the `gnu_go.mcp` project.

To open the `main.c` file in the Project window double-click its name in the Project window ([Figure 7.6](#)).

**Figure 7.6** Opening a file from the Project window



The file opens and appears in its own window.

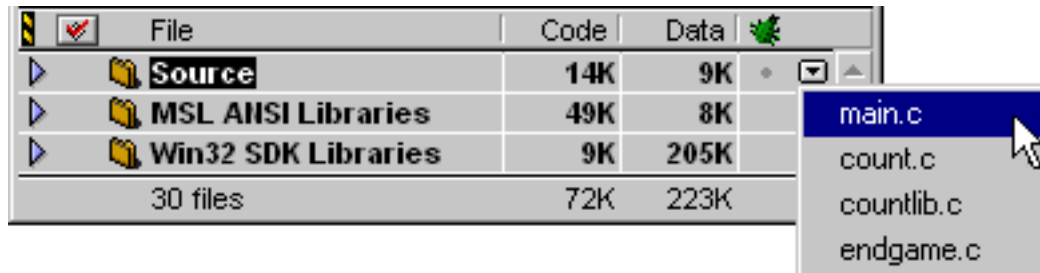
**TIP** You can also select a file in the Project window using the arrow keys and press the **Enter/Return** key to open it.

---

### Opening a file with a group pop-up

You can also open an editable text file within a group by using the group pop-up that appears to the right of the group name. To open a file from a pop-up menu select the file from a group pop-up in the Project window ([Figure 7.7](#)).

**Figure 7.7** Opening a file within a group pop-up



The file opens and appears in its own window.

### Opening a file from the File menu

You can use this method to open any text file, whether it is included in the project or not. In this step you open the file `endgame.c` using the **File** menu.

To open the `endgame.c` source code file choose **File**→**Open** to display a file dialog box. Locate and select the `endgame.c` file, then click **Open**. The file appears in its own editor window.

### Entering Text into a File

Now that you have a file open in the editor, you can enter text or source code. The CodeWarrior Editor operates like a regular text editor, with many special features designed to ease navigation that are beyond the scope of this short tour.



To enter text, position the cursor at the point where you want to insert text, click the mouse button to place the insertion point, then begin typing. Your keystrokes appear at the insertion point.

## Saving Changes to a File

As you modify your source code files, it's a good idea to save the changes to disk to prevent data loss. To save a file choose **File**→**Save**. If the file has never been saved before, a file dialog box will appear prompting you for a location and a name for the file. Click **Save** when you are done.

The IDE saves the file.

Now that you are comfortable with the IDE's Editor, it's time to explore the Target Settings dialog box.

# Target Settings Options

What is a Target?

Before we begin our Targets tour, let's get familiar with the term 'Target'. The term Target has two distinct meanings in CodeWarrior terminology. "Target" refers to either the:

- **Platform Target** - the particular operating system or microprocessor for which you are writing code. For example, if you choose to write code for a particular processor running a desktop OS, you are specifying a platform target.
- **Build Target** - the particular collection of settings and files that determine what is in your code, and how your code is compiled and linked into the final output. For example, if you choose to compile code with certain language features enabled, then you change the settings in the build target. If you choose to add or remove a file from a particular build, you are changing the build target.

The Build Target settings apply only to the current target of the current project. Settings in one project or target in a project do not affect settings in another project or target. The Build Target Settings dialog box appears very similar to the Preferences dialog box, with many common features.

Projects can contain one or more build targets. Every target in the project has its own unique settings. For example, you can have a debug target and a production target. You use the Build Target Settings dialog box to set a target's options.

This section shows you how to do these tasks with the Target Settings dialog box:

- [Opening the Target Settings Dialog Box](#)
- [Viewing and Setting Options in a Settings Panel](#)
- [Closing the Target Settings Dialog Box](#)

## Opening the Target Settings Dialog Box

To change a target option, the Target Settings dialog box must be open. In this step you open the Target Settings dialog box.

To open the Target Settings dialog box choose **Edit**→**Target Settings**. *Target* will be replaced by the name of the current target in the project file. On a PC running Windows for example, the targets include: gnu\_go x86, and go\_debug. On the Mac OS the targets include: gnu\_go 68K, gnu\_go PPC, and gnu\_go FAT.

The Target Settings dialog box opens on the screen.

---

**TIP** You can also double-click a target name in the Targets view to open the Target Settings dialog box.

---

## Viewing and Setting Options in a Settings Panel

There are several different settings panels available in the Target Settings list. To set a particular target option, you must choose its panel.

To view a settings panel, click the panel name in the Target Settings list, or use the Up and Down arrow keys to change the selection. The selected settings panel appears to the right of the list.

To learn about setting options in settings panels, consult the *Targeting* manual for the platform on which your program will run.

## Closing the Target Settings Dialog Box

Once you finish setting the target options, just close the window. To close the Target Settings dialog box click its close box or choose **File**→**Close**. The Target Settings dialog box closes.

Now that you can set Target Settings for projects, it's time to build a compiled application from the `gnu_go.mcp` project.

## Building Projects with CodeWarrior

In this section we'll introduce you to ways of building a project. Among the tasks the IDE provides for compiling, linking, running, and debugging your project are:

- [Updating a Project](#)
- [Making a Project](#)
- [Running a Project](#)
- [Debugging a Project](#)
- [Building a Program](#)

---

**TIP** Before using a command in the Project menu to compile or link your project, make sure the IDE will operate on the right target by choosing it from the **Set Current Target** sub-menu in the **Project** menu.

---

### Updating a Project

Use **Project**→**Bring Up To Date** to compile all modified or "touched" files. This process creates object code for compiled files, but does not link the code into a binary file.

### Making a Project

Use **Project**→**Make** to link a project into a binary file. Make only creates binary files on the hard disk, it does not interactively run the final application.

## Running a Project

Use **Project**→**Run** to launch the application created by your project. If the project type is not an application, the **Run** command is disabled. **Run** will update and link the code if necessary.

## Debugging a Project

Use **Project**→**Debug** to launch the application under control of the Debugger. You can then debug your code. **Debug** will also update and link the code if necessary.

## Building a Program

In this step you name the output application for the `gnu_go.mcp` project, then compile, link, and run it.

### To set the application name

1. **Open the *Target Settings* window.**
2. **Choose the appropriate target for your platform.**

Windows Choose **x86 Target** in the settings panel list.

Mac OS Choose **68K Target** in the settings panel list.

Solaris Choose **GNU** in the settings panel list.

Linux Choose **GNU** in the settings panel list.

3. **Select Application from the Project Type pop-up menu.**
4. **Enter "gnu\_go" (without the quotes) in the Output File Name field.**
5. **Click Save.**

If an alert box appears asking to re-build the project, click **OK**.

---

**NOTE** The name of *Target* in the *Target Settings* dialog box changes depending upon the target chosen in the Project window.

---

### **To build the gnu\_go application**

With the project information in place, it is now time to actually build the project. In this step you build the `gnu_go.mcp` project.

Choose **Project**→**Run**. The IDE compiles, links, then launches the `gnu_go` application.

Congratulations! You've just compiled, linked, and executed an application using CodeWarrior.

## **Where to Go From Here**

The IDE makes many of your programming tasks easier. However, not all of the features available in the IDE are covered in this tour. To learn how to use other advanced features, see the *IDE User Guide*, which is available on the *CodeWarrior Professional Reference* CD in PDF or HTML format.

For specific information about developing software for a specific operating system or processor, refer to its corresponding *Targeting* manual, available on the *CodeWarrior Professional Reference* CD in PDF or HTML format..

For more information on using CodeWarrior, refer to [“CodeWarrior Documentation” on page 71.](#)

**A Quick Tour of CodeWarrior**

*Where to Go From Here*

---

# CodeWarrior Documentation



This chapter gives you an insight into the technical diversity of CodeWarrior's documentation. It provides you with information on CodeWarrior's documentation resources to help you blend into the technical mainstream quickly and easily. The following topics are covered in this chapter:

- [CodeWarrior Online Help](#)
- [Documentation](#)
- [Books](#)
- [Web Sites of Interest](#)
- [Beginner's Resources](#)
- [Factory Updates](#)

## CodeWarrior Online Help

CodeWarrior includes a wealth of online documentation covering all aspects of programming. [Table 8.1](#) describes the different kinds of CodeWarrior online help and their functions.

- [CodeWarrior Platform Specific Online Help](#)
- [Cross-Platform Help Solutions](#)

## CodeWarrior Platform Specific Online Help

The CodeWarrior online help on Windows, Mac OS, and UNIX provides core CodeWarrior documentation as well as a task oriented approach to learning the IDE. It consists of the following:

- **How To Topics** - These procedural topics provide simple, easy to follow instructions on performing tasks common to using the CodeWarrior IDE. For example, Creating a New Project, Viewing Variables etc.
- **Error Reference** - a complete listing of common error messages generated by CodeWarrior and their possible solutions.
- **Glossary** - Consists of terms and their definitions specific to CodeWarrior.
- **CodeWarrior manuals**- Includes complete text of some of CodeWarrior's manuals including [User Guides](#), [Targeting Manuals](#), and [Reference Manuals](#) .

You can access online help by using the Help menu in the CodeWarrior IDE.

**Table 8.1 Online Help Formats**

Format	Description
<b>WinHelp (Windows)</b>	The Help format for Windows. Consists of reference manuals, task topics, core manuals, and a CodeWarrior specific glossary.
<b>QuickHelp (Mac OS)</b>	The QuickHelp format on Mac OS consists of the same content as WinHelp.
<b>HyperHelp (UNIX)</b>	HyperHelp format for UNIX consists of the same Help content as WinHelp.

---

**NOTE** The types of documentation you receive is specific to your platform. Please refer to the Documentation folder on the Reference CD for more information.

---



## Cross-Platform Help Solutions

We provide cross-platform online assistance through two of the most popular and powerful formats - HTML and PDF.

**Table 8.2** Cross-Platform Help

Cross-Platform Help	Type
HTML	HTML files are small, fast, and provide quick and efficient mode of online documentation.
PDF	PDFs are compact and provide excellent printing qualities offering a near-perfect representation of the original.

## Documentation

CodeWarrior offers the following kinds of printed documentation. You can find the online versions of these manuals in the Documentation\CodeWarrior folder on your CodeWarrior CD.

### CodeWarrior Documentation

CodeWarrior documentation is classified as follows:

- [QuickStart Manuals](#)
- [User Guides](#)
- [Targeting Manuals](#)
- [Reference Manuals](#)

---

**NOTE** CodeWarrior also provides PDFs, HTML, and Online Help versions of documentation. Please see [CodeWarrior Online Help](#) for more information.

---

## QuickStart Manuals

The QuickStart manual includes the basic information required to install and use CodeWarrior, its documentation, a simple tutorial to create a C console application, and information on contacting Metrowerks for technical support, as well as registering, buying, or licensing a product. Please refer to *QuickStart Professional* for desktop products and *QuickStart Embedded* for CodeWarrior embedded products.

## User Guides

The User Guides provide information you need to effectively use the CodeWarrior software. All common features available in the CodeWarrior IDE are documented in its user guide. For example, *Inside CodeWarrior:IDE User Guide* discusses the powerful features of the CodeWarrior IDE, its debugger, and RAD (Rapid Application Development) in great detail. Please refer to Targeting manuals for target specific information.

## Targeting Manuals

CodeWarrior offers a wide range of Targeting manuals for several platforms. These manuals describe how to use CodeWarrior to develop code for a specific platform or processor. Targeting manuals also include information about platform-specific features that are not found in a common user guide. [Table 8.3](#) lists a few of the many targeting manuals we offer.

**Table 8.3 Targeting Manuals**

Targeting Manuals	Platform
<i>Targeting Windows</i>	Win32/x86
<i>Targeting Mac OS</i>	Mac OS
<i>Targeting Java VM</i>	Java VM on Windows, Mac, and Solaris

## Reference Manuals

The Reference manuals provide descriptive reference information of a language (C/C++/Java/Pascal) or a programming API (MSL, PowerPlant, etc). Reference manuals normally apply to all CodeWarrior supported platforms. However, there are exceptions. While the C, Java, and Pascal reference manuals are all cross-platform, PowerPlant Reference is not.

---

**NOTE** The online version of the QuickStart, User Guides, Targeting, and Reference manuals are located in the `\\Documentation\CodeWarrior` folder. Many of the CodeWarrior manuals are also available in printed form and can be ordered directly from the Metrowerks store. For more information on ordering, see [“CodeWarrior Factory Store” on page 83.](#)

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## Partners

To aid your learning curve, CodeWarrior consists of a comprehensive set of books and documentation provided by some of our partners in the industry today. While CodeWarrior documentation is produced and supported by Metrowerks, the third-party documentation is included for your benefit. Please refer to the `Partner` folder on the Reference CD for a comprehensive set of third-party books.

## Books

The CodeWarrior CD also provides additional third party programming books written by popular authors that cover programming on different platforms and languages supported by the CodeWarrior IDE. Please refer to the `Books` folder for the list of books provided for your convenience.

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**NOTE** These books are available only in PDF format and are provided as a service to our users. Due to licensing restrictions these PDF files do not allow printing.

---

## Other References

[Table 8.4](#) lists several third-party books available in your favorite local or online bookstore that can assist you in getting up to speed on your programming projects.

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**NOTE** For your convenience, the CodeWarrior CD often provides software documentation from other companies. Please see the `\Documentation\Other` folder for a list of manuals. The format used in these manuals are specific to their company.

---

**Table 8.4** Other programming books of interest

To learn...	Read this book
C	<i>New C Primer</i> by Michael Waite and Stephen Prata <i>Teach Yourself C</i> by Herb Schildt <i>The C Programming Language, 2nd Edition</i> by B. Kernighan and D. Ritchie
C++	<i>C++ Primer Plus, 3rd Edition</i> by Stephen Prata <i>Teach Yourself C++</i> by Herb Schildt <i>The C++ Programming Language, 2nd Edition</i> by Bjarne Stroustrup.
CodeWarrior	<i>Metrowerks CodeWarrior Programming</i> by Dan Parks Sydow <i>Power Macintosh Programming Starter Kit</i> by Tom Thompson
Win32/x86	<i>Advanced Windows®</i> by Jeffrey Richter <i>Programming Windows® 95</i> by Arnold Petzold
Mac OS	<i>Macintosh Programming Techniques</i> by Dan Parks Sydow <i>Macintosh C Programming Primer, Volume 1</i> by D. Mark & C. Reed <i>Programming Starter Kit for Macintosh</i> by Jim Trudeau <i>Ultimate Macintosh Programming</i> by Dave Mark

## Viewers

For your convenience, CodeWarrior provides documentation viewers such as Acrobat Reader, QuickHelp, and Internet Explorer with its documentation. Please see the `Viewers` folder on the CD to install preferred documentation viewers.

## Web Sites of Interest

Programming tools change fast and access to the latest information about a particular technology or programming environment is vital. Listed below are some of the major Web sites where developer information can be obtained:

**Table 8.5 Web sites**

For information on this target ...	See this Web site
Linux	<a href="http://www.linux.org">http://www.linux.org</a>
Mac OS	<a href="http://devworld.apple.com">http://devworld.apple.com</a>
MIPS	<a href="http://www.sgi.com/MIPS/">http://www.sgi.com/MIPS/</a>
NEC	<a href="http://www.nec.com/">http://www.nec.com/</a>
Palm OS	<a href="http://palmpilot.3com.com/5024.html">http://palmpilot.3com.com/5024.html</a>
PowerPC Embedded	<a href="http://www.mot.com/SPS/PowerPC/">http://www.mot.com/SPS/PowerPC/</a>
Solaris	<a href="http://docs.sun.com">http://docs.sun.com</a>
Windows CE	<a href="http://www.microsoft.com/msdn">http://www.microsoft.com/msdn</a>
Windows	<a href="http://www.microsoft.com/msdn">http://www.microsoft.com/msdn</a>

## Beginner's Resources

Always refer to the CodeWarrior website ([www.metrowerks.com](http://www.metrowerks.com)) for a detailed description and comprehensive listing of printed and online books, online tutorials, and additional information on programming with CodeWarrior.

### CodeWarrior Beginners

For a beginner's tryst with CodeWarrior, see *Core Tutorials*. They cover the basics of using CodeWarrior. In addition, refer to the *IDE User Guide* for more in-depth information on creating, editing, compiling, and debugging your software projects.

## **Language Beginners**

For language basics, see the reference manuals for all supported languages (C, C++, and Java). Language manuals are located on your CodeWarrior CD at:

`\\Documentation\CodeWarrior`

Also, refer to the various third party commercial books located at .

`\\Documentation\Books`

## **Programming Beginners**

For assistance in creating programs for a particular operating system, see the appropriate Targeting manual for the project. Targeting manuals provide all the information you need to successfully program a specific processor or operating system, including additional tutorials and examples.

# **Factory Updates**

Metrowerks makes software updates available through its Web site to enhance features or correct bugs in an existing CodeWarrior product. You may download these updates and apply them to the CodeWarrior software installed on your computer.

For information on the latest patches to CodeWarrior software, see <http://www.metrowerks.com>.

# Metrowerks Support

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This chapter describes ways to contact Metrowerks with your questions on registration, site licensing, sales, and technical support.

The sections in this chapter are:

- [Contacting Metrowerks](#)
- [Registering a CodeWarrior Product](#)
- [Technical Support](#)
- [Sales, Renewals, and Site Licensing](#)
- [Worldwide Distributors](#)
- [CodeWarrior Factory Store](#)

## Contacting Metrowerks

Use the information below to contact Metrowerks:

Metrowerks Corporation  
9801 Metric Blvd., Suite 100  
Austin, TX-78758  
U.S.A.

Or, contact Metrowerks by voice or fax using these numbers:

tel: (800) 377-5416 (toll free in US only) or  
      (512) 873-4700  
fax: (512) 873-4900

## Registering a CodeWarrior Product

To register your Metrowerks product and qualify for technical support and online factory updates, or, if you have questions on your registration, contact Metrowerks using the information below.

### Questions on Registration

If you have any questions about registering a product with Metrowerks, send email to:

`mailto:register@metrowerks.com`

### To Register Online

You can register your CodeWarrior product online by visiting:

`http://www.metrowerks.com/register/`

and filling in the handy form that appears there.

### To Register by Email

To register by email, fill in the *Registration\_Card* form, copy it into an email message, then email it to:

`mailto:register@metrowerks.com`

### To Register by Mail

To register by letter, fill in the *Registration\_Card* form, print a copy and mail it to:

Metrowerks Corporation  
ATTN: Dept 334  
PO Box 9700  
Austin, TX 78766-9700  
U.S.A.

### To Register by Fax

To register by fax, photocopy your registration card or fill out the *Registration\_Card* form, then print a copy and fax it to:

fax: (512) 873-4901  
ATTN: Dept 334



## Technical Support

Metrowerks offers a combination of free technical support as well as fee-based support for desktop development tools. For desktop development, there is a multi-tiered model that includes 30 days of free support from the date of the first incident. Other supported options include: pay-as-you-go, incident packages, and multi-user packages. For the latest information on technical support, visit:

<http://www.metrowerks.com/newsupport/>

### Submitting Technical Questions Online

You can submit a technical support question online at:

<http://www.metrowerks.com/contact/support/>

### Emailing Technical Questions

To submit a technical question via email, fill out the *email\_Tech-Question\_Form* form and email it to:

[mailto:cw\\_support@metrowerks.com](mailto:cw_support@metrowerks.com)

### Reporting Bugs

To report a bug, fill out the *email\_Bug\_Report\_Form* form and email it to:

[mailto:cw\\_bug@metrowerks.com](mailto:cw_bug@metrowerks.com)

### Making Feature Requests

If you have a feature you would like to see implemented in a future release of a Metrowerks product, fill out the *email\_Suggestion\_Form* form and email it to:

[mailto:cw\\_features@metrowerks.com](mailto:cw_features@metrowerks.com)

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**NOTE** All technical support forms are located at Release Notes > email Report Forms folder located on your CodeWarrior CD.

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For information on a site license or buying a new Metrowerks' product at a reduced price, for the U.S.A. and Canada, or for international sales, contact Metrowerks using the information shown below.

### **U.S. and Canada Distributors**

For information on domestic sales, send email to:

`mailto:sales@metrowerks.com`

Or write:

Metrowerks Corporation  
ATTN: Sales  
9801 Metric Blvd., Suite 100  
Austin, TX 78758  
U.S.A.

Or fax:

fax: (512)873-4901

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For information on international sales, send email to:

`mailto:intlsls@metrowerks.com`

Or write:

Metrowerks Corporation  
ATTN: International Sales  
9801 Metric Blvd., Suite 100  
Austin, TX 78758  
U.S.A.

Or fax:

fax: (512)873-4901

## Worldwide Distributors

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## CodeWarrior Factory Store

The Factory Store is stocked with everything you need to become a complete CodeWarrior – manuals to bring you up to speed like the *IDE User Guide*, *C/C++ Tools*, as well as many others, and fashionable Geekware accoutrements like polo shirts, t-shirts, caps, and other accessories to keep you there in style.

### To Order Geekware Online

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