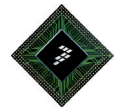
CodeWarrior

Development Studio

for Microcontrollers V10.1



Quick Start

BUILT ON eclipse™

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CodeWarrior Development Studio
for Microcontrollers V10.x Quick Start

SYSTEM REQUIREMENTS

Hardware	Windows® OS: PC with 1 GHz Intel® Pentium® compatible processor Linux® OS: 1.8 GHz Intel Pentium class processor (or better) 2GB of RAM CD-ROM drive Depending on host-target connection: Parallel Port, 9-pin Serial Port, or USB Port
Operating System	Microsoft® Windows XP 32-bit and 64-bit (Professional Edition), Microsoft Windows Vista® 32-bit and 64-bit (Home Premium Edition and Business Edition), or Microsoft Windows 7 32-bit and 64-bit (Home Premium Edition and Professional Edition) Red Hat Enterprise Edition 5.2
Disk Space	2 GB total 400MB on Windows system disk

This Quick Start explains how to install the CodeWarrior Development Studio for Microcontrollers V10.x software on Windows and Linux operating systems, and how to use the CodeWarrior IDE to create, build, and debug a project.

Section A: Installing CodeWarrior Software

NOTE This section describes how to download and install CodeWarrior for Microcontrollers V10.x from the Web or install it from the CD. The Web version has a time-bombed license.

NOTE **Special Edition:** The Special Edition license is automatically installed with your product and you do not need to register it. This license allows you to develop projects with unlimited assembly code, up to 32KB of C code for HC(S)08/RS08 derivatives, up to 64KB of C code for ColdFire V1 derivatives and up to 128 KB of C code for ColdFire V2-V4 derivatives.

NOTE **Evaluation Edition:** The Evaluation Edition license is automatically installed with your product and you do not need to register it. This license allows you to develop projects as Professional Edition within the 30-day evaluation period. After 30 days, the license works as Special Edition license (free permanent, but feature limited) which supports unlimited assembly code, up to 32KB of C code for HC(S)08/RS08 derivatives, up to 64KB of C code for ColdFire V1 derivatives and up to 128 KB of C code for ColdFire V2-V4 derivatives.

NOTE **CodeWarrior Eclipse usage on a Microsoft® Windows Vista® or Microsoft Windows 7 system:**

Administrator rights are required to install CodeWarrior software on Microsoft Windows Vista and Microsoft Windows 7 systems, since the installer copies files into the System and Program Files folders.

The default CodeWarrior installation folder is `C:\Program Files\Freescale CodeWarrior\CW MCU v10.1`. To protect against malware, Windows Vista and Windows 7 do not allow normal processes to change files in the Program Files folder; therefore, you must have administrator rights to install and run CodeWarrior software from this location. If you will be running CodeWarrior software with a non-administratve user account, then you need to install CodeWarrior software in another folder (e.g., `C:\Freescale CodeWarrior\CW MCU v10.1`).

Your project workspace needs to be setup in any folder that you can fully access.

1. Download CodeWarrior software from the Web

   a. Go to `www.freescale.com/cwmcu10` — the **CodeWarrior for Microcontrollers v10.x Product Summary** page appears.

   b. Click the **Downloads** tab — the page displays separate downloads for the Windows and Linux operatings systems.

   c. Click **Download** next to the required Microcontrollers V10.x download. You will be directed to the Freescale log-in page if you are not logged in already.

   d. Enter your user name and password and click **Log in**.

NOTE If you are not a registered user, click **Register Now** and follow the on-screen instructions.

   e. A dialog box appears asking you to save the installer file. The extension of the installer file is `.exe` for Windows and `.tar` for Linux.

   f. Specify the location where you want to save the installer file.

2. Install CodeWarrior software downloaded from Web

Windows OS

   a. When the download finishes on the Windows host computer, navigate to the CodeWarrior installer EXE file you have downloaded, double-click the EXE file — the install wizard appears.

   b. Follow the wizard instructions to install the CodeWarrior software.

   When software installation is finished, wizard displays the installation complete page.

   c. Check the Display Start Here page checkbox and click Finish to close the wizard.

   d. The start here page appears in your default browser. The page gives you information about the different documents, such as getting started, user guides, application notes, and cheat sheets available in the product.

NOTE **CodeWarrior Eclipse usage on a Linux system:**

The CodeWarrior installer must be run from a root account. CodeWarrior service packs are installed with the Eclipse Updater. The updater must also be run from a root account. To start the Eclipse Updater select '**Window** > **Install new software**' in the menu.

Eclipse needs read/write access to the installation folder. Make

sure the eclipse installation folder has the appropriate permissions for all users.

Make sure your project workspace has read and write permissions.

If the CodeWarrior software does not restart automatically after a successful CodeWarrior update operation, run '`./cwide -clean`' to launch the CodeWarrior software.

Linux OS

a. When download finishes on the Linux host computer, navigate to the folder containing the CodeWarrior installer TAR file you have downloaded.
b. Right-click the TAR file and select **Extract Here**. The system extracts the contents of the TAR file. A new folder appears next to the TAR file in the file browser window; usually, the new folder's name is `disk1`.
c. Open a new terminal window — the shell session starts.
d. In the terminal window, log in as root or super user.
e. Issue command: `xhost +`.
f. Change working directory to the `disk1` directory.
g. Issue command: `./setuplinux` — the install wizard starts; the welcome page appears.
h. Follow wizard instructions to install the CodeWarrior software.
i. When software installation is finished, wizard displays the installation summary page.

NOTE Using P&E hardware via the USB port within the CodeWarrior software requires the Jungo USB drivers. During the Codewarrior software installation on a Linux operating system, it attempts to install the drivers automatically. However, if the driver installation fails and a warning message is displayed, then please refer to the `Readme.pdf` found within `[CodewarriorInstallDir]\Drivers\pemicro` to manually install the P&E drivers.

j. Click **Finish**.

3. Install CodeWarrior Software from CD

a. Insert CodeWarrior Development Studio CD into CD-ROM drive — CW Auto Install begins.

NOTE If Auto Install does not start, navigate to the CodeWarrior installer EXE file, double-click the EXE file — the install wizard appears.

b. Follow the wizard instructions to install the CodeWarrior software.

4. Restart your computer — operating system reboots which ensures that CodeWarrior IDE finds newly installed drivers.

Section B: Creating and Building a Project

NOTE Before starting the CodeWarrior IDE in Linux, make sure that `LD_LIBRARY_PATH` is set to empty.

1. Start CodeWarrior IDE

   a. For Windows, select **Start > Programs > Freescale CodeWarrior > CW for MCU v10.1 > CodeWarrior** — the **Workspace Launcher** dialog box appears.

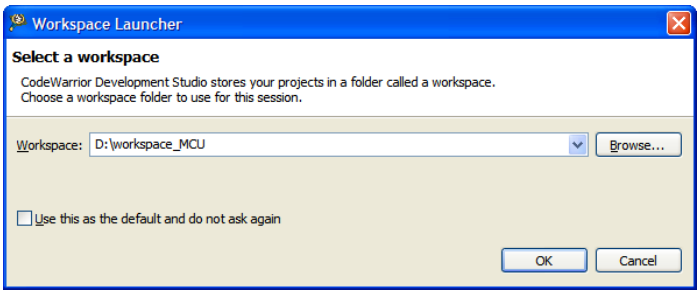
   For Linux, open a new terminal window and change the working directory as shown below:

   CWInstallDir`/eclipse/`

   where, *CWInstallDir* is the directory in which you installed the CodeWarrior software.

   Issue command: `./cwide` — the **Workspace Launcher** dialog box appears.

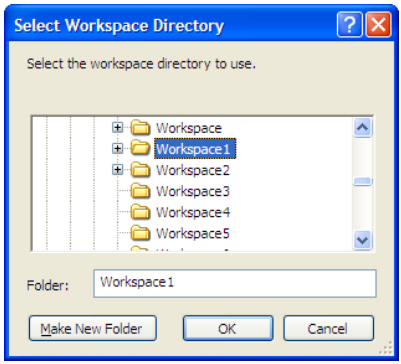
Workspace Launcher Dialog Box



NOTE If you want to store your projects in the default location, click **OK** and proceed to step 2, otherwise follow the steps given below.

b. Click **Browse** — the **Select Workspace Directory** dialog box appears.

Select Workspace Directory Dialog Box



c. Select required folder or click **Make New Folder** to create a new folder for storing your projects.

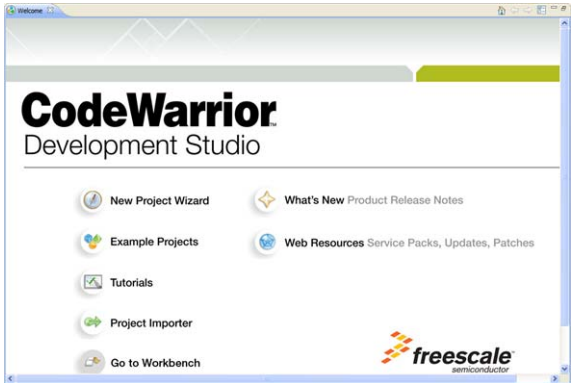
d. Click **OK** — the **Select Workspace Directory** dialog box closes.

NOTE Check the **Use this as the default and do not ask again** checkbox in the **Workspace Launcher** dialog box to set the chosen path as the default location for storing all your projects.

e. Click **OK** — the CodeWarrior IDE launches and the **Welcome** page appears.

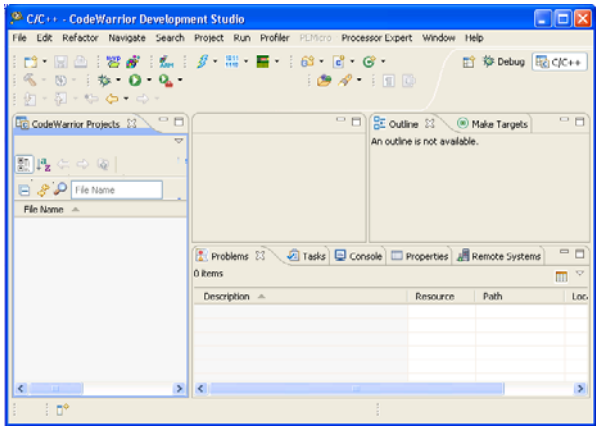
NOTE The **Welcome** page appears only if the CodeWarrior IDE or the selected Workspace is opened first time. Otherwise, the **Workbench** window appears. Switch directly to step 2a if the **Workbench** window appears.

Welcome Page



f. In the **Welcome** Page, click **Go to Workbench** — the Workbench window appears.

Workbench Window

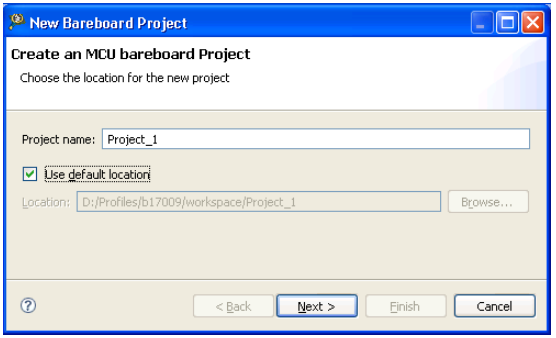


2. Create new project

   a. From the IDE menu bar, select **File > New > Bareboard Project** — the **New Bareboard Project** wizard starts; the **Create an MCU bareboard Project** page appears.

   b. Enter `Project_1` in the **New Project Name** field.

Create an MCU bareboard Project Page

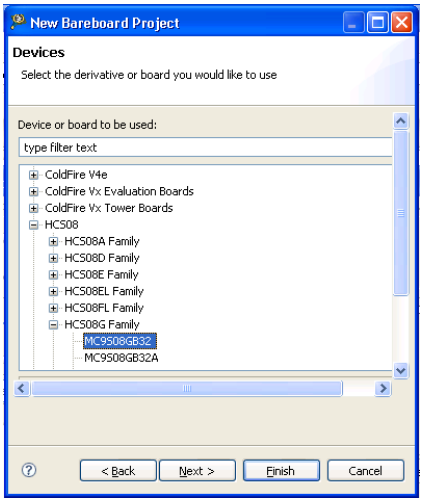


NOTE The **Location** field shows the default project location. If you wish to change this location, clear the **Use default location** checkbox. Click **Browse** and use the subsequent dialog box to specify a new location. Click **OK**. The **Create an MCU bareboard Project** page now shows new location.

c. Click **Next** — the **Devices** page appears.

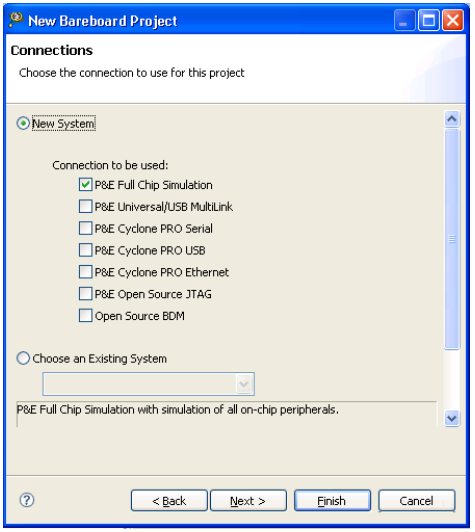
d. Expand the tree control and select **HCS08 > HCS08G Family > MC9S08GB32**.

Devices Page



e. Clcik **Next** — the **Connections** page appears.

Connections Page

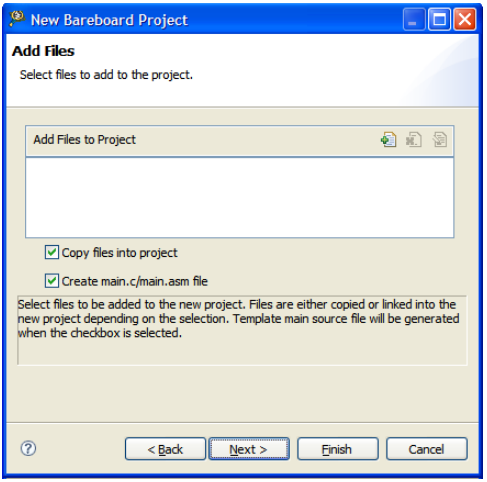


f. Select the desired connection.

NOTE In the **Connections** page, you can select multiple connections at once.

g. Click **Next** — the **Add Files** page appears.

Add Files Page

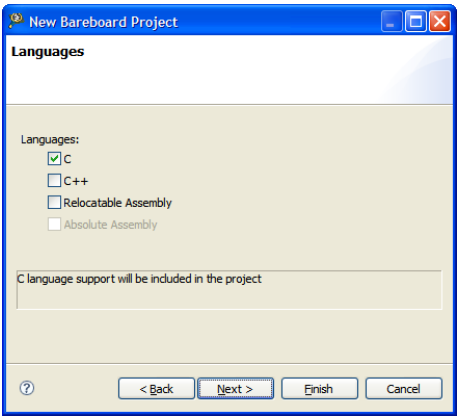


h. Click **Next** — the **Languages** page appears.

NOTE The page displayed may vary depending on the derivative or board selected. For example, if you select **ColdFire V2 > MCF5221X > MCF52210** and click **Next**, the **ColdFire Build Options** page appears.

i. Select the **C** language.

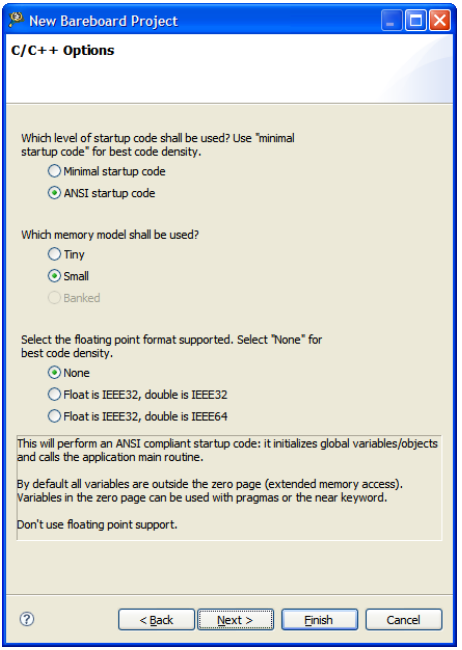
Languages Page



j. Click **Next** — the **C/C++ Options** page appears.

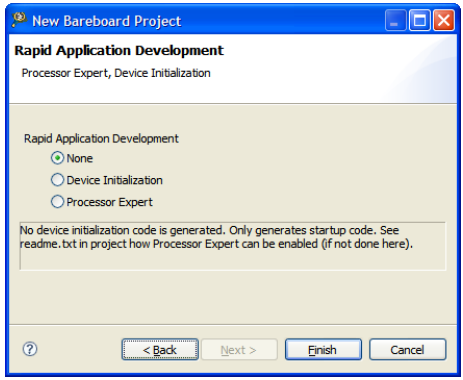
NOTE If you check only the **Relocatable Assembly** or **Absolute Assembly** checkbox and click **Next**, the **Rapid Application Development** page appears instead of the **C/C++ Options** page.

C/C++ Options Page



k. Click **Next** — the **Rapid Application Development** page appears.

Rapid Application Development Page

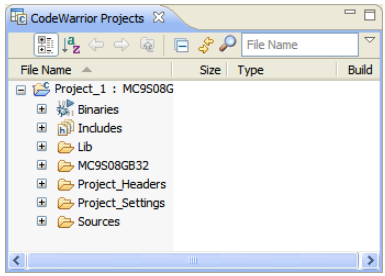


l. Select **None** from the **Rapid Application Development** options.

m. Click **Finish** — the IDE creates the project.

n. Select **Project > Build Project** from the IDE menu bar— the IDE builds the project. Expand the project directory in the **CodeWarrior Projects** view to view the list of files and folders in the project.

CodeWarrior Projects View



NOTE To set Linker, Complier, and Assembler options for a project, select the project in the **CodeWarrior Projects** view and select **Project > Properties** from the IDE menu bar. In the **Properties** dialog box that appears, select **C/C++ Build > Settings**. You can make the required settings in the **Tool Settings** tab page.

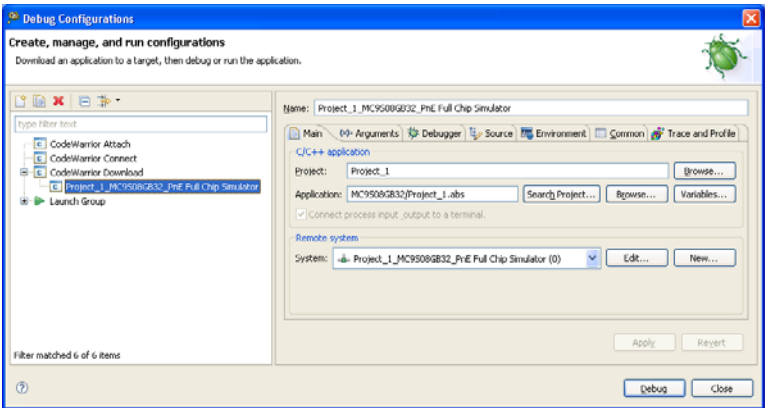
Section C: Debugging your Application

1. Debug program

   a. From the IDE menu bar, select **Run > Debug Configurations** — the **Debug Configurations** dialog box appears.

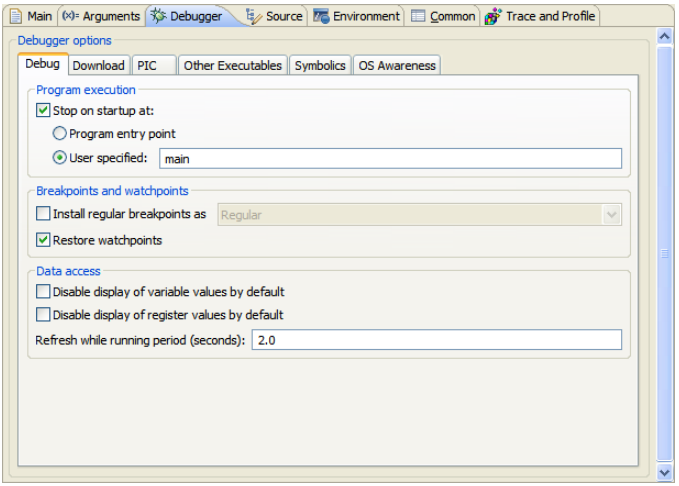
   b. Expand the **CodeWarrior Download** tree control in the left pane and select **Project_1 - MC9S08GB32 - PnE Full Chip Simulator**.

Debug Configurations Dialog Box



   c. Click the **Debugger** tab — the **Debugger** page opens in the right pane.

Debug Configurations Dialog Box — Debugger Page

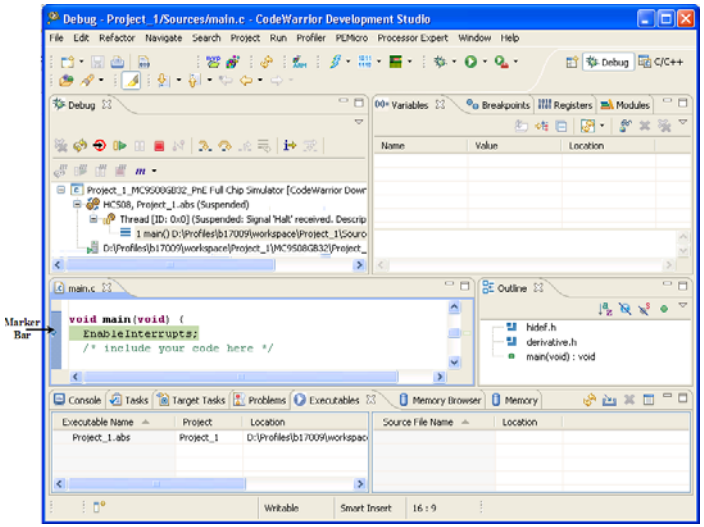


   d. Make the appropriate changes in the **Debug** tab.

e. Click **Apply** to save the changes in the settings, if any.

f. Click **Debug** — the debugger downloads program to simulator and the **Debug Perspective** appears. The execution halts at the first statement of `main()` and program counter icon on the marker bar points to the next statement to be executed.

Debug Perspective



2. Set and run to breakpoint

   a. Double-click on the marker bar next to a statement — the breakpoint indicator (blue dot) appears next to the statement.

   b. From the **Debug** view, click **Resume** — the debugger executes all statements up to but not including the breakpoint statement.

3. Control program

   a. From the **Debug** view, click **Step Over** — the debugger executes breakpoint statement and halts at next statement.

   b. From the **Debug** view, click **Resume** — the simulator resumes program execution.

   c. From the **Debug** view, click **Terminate** — the debug session ends.

4. Select **File** > **Exit** from the IDE menu bar to exit the CodeWarrior IDE.

Congratulations!

You have created, built, and debugged an Microcontrollers project using CodeWarrior for Microcontrollers V10.x software!

How to Contact Us

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