

Mentor Graphics Release Notes

Microtec Toolkit for

68K

ColdFire

PowerPC

208819
103034-001

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Mentor Graphics Corporation
8005 SW Boeckman Road
Wilsonville, Oregon 97070-7777

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What's New?

This release includes the following products:

- XRAY Simulator 4.6
- XRAY Monitor 4.6
- XRAY HP Probe 4.6
- XRAY OCD 4.6
- Microtec 68K/ColdFire Assemblers 7.6
- Microtec PowerPC Assembler 2.0
- Microtec 68K/ColdFire C Compilers 5.3
- Microtec PowerPC C Compilers 2.0
- Microtec 68K/ColdFire C++ Compilers 3.3
- Microtec PowerPC C++ Compilers 2.0

Information about new features in these products has been incorporated into the product documentation, but is repeated here for your convenience.

Installation and Licensing

This release includes the enhanced functionality described in this section.

- Default Installation Location
- Execution Search Paths

Default Installation Location

The default installation location has been changed to:

- Windows: `drive:\MGC\embedded`
- UNIX: `/opt/MGC/embedded`

Execution Search Paths

Refer to the *XRAY User's Guides* for information on environment variables that should be used if the distribution files are not installed in the default directories.

All XRAY Debuggers

This release includes enhanced functionality pertaining to all XRAY Debuggers. These changes are described in this section.

- Path to the Tutorials
- Color Coding Windows Support
- History Command Support
- HotKey Support

Path to the Demo Tutorials

The correct path to the tutorials is:

- UNIX: `$XRAY_HOME/demo/tgt/vehicle/`
- Windows: `%XRAY_HOME\demo\tgt\vehicle\`

where *tgt* is an abbreviation for your target processor family (for example, 68000 is 68k and PowerPC is PowerPC). *Vehicle* is the variant type of XRAY Debugger. Vehicle types include simulators, monitors, and emulators. Different vehicles have different operations which are appropriate to the target they are connected to.

Color Coding Windows Support

The data related windows, which include the Register, Stack, Inspect and Memory windows, display the modified values dynamically with color-coding.

History Command Support

The XRAY Debugger provides command history functionality with the UP and DOWN arrow keys.

The default buffer for stored commands is set to 25. To modify the buffer value, use the OPTION command with the following parameter:

```
OPTION HISTSIZE= list_size
```

where *list_size* is a value between 5 and 100.

HotKey Support

The XRAY Debugger provides predefined hotkeys for executing commands. Use the **hotkeys** command (or **hk**) to display the hotkey mappings. Hotkeys (also known as accelerator keys) are platform-specific. In PC hosts, some hotkey combinations have already been defined for Windows GUI operation. Use:

```
>hotkeys /system
```

or

```
>hk /s
```

to display the pre-defined system hotkeys

or

```
>hotkeys /user
```

or

```
>hk /u
```

to display the user-level-defined hotkeys.

Pre-defined Hotkeys

The XRAY Debugger already defines some hotkeys to map to existing GUI commands, for example:

| | |
|--------------|--------------------|
| Ctrl+Shift+G | Go |
| Ctrl+Shift+I | hi-level step Into |
| Ctrl+Shift+O | hi-level step Over |
| Ctrl+Shift+S | Stop |

User-defined Hotkeys

The XRAY Debugger allows user-defined hotkeys. To define custom hotkeys, use the button editor. To access the button editor, select **Debug -> Button Editor** from the Code Window. For more information about the button editor, refer to the online help.

XRAY HP Probe

This release of HP Probe enhances support to the following PowerPC variants:

- “PPC601”, “PPC603”, “PPC604”, “MPC860”, “PPC603e”, “MPC821”, “PPC505”, “PPC604e”, “MPC801”, “MPC823”, “PPC403GA”, “PPC750”, “PPC740”, “MPC8260”, “PPC403GB”, “PPC403GC”, “PPC403GCX”, “MPC555”, “405GP”

XRAY OCD

This release of XRAY OCD includes the enhanced functionality described in this section:

- PowerPC8240 and PowerPC405GP Support
- Board File
- XRAY Commands
- Breakpoints

PowerPC8240 and PowerPC405GP Support

This release enhances support to PowerPC8240 and PowerPC405GP

- PowerPC8240
One hardware breakpoint is supported for this MPC8240, and the default breaktype is software. You may set XRAY to use the hardware breakpoint by typing “BREAKTYPE HARD” on the command line.
- PowerPC405GP
Four hardware breakpoints are supported for IBM PPC405GP. The default breaktype is hardware. There are two data access breakpoints supported.

Board File

The board file lists all available boards to the system as the user defines them. The list of boards used in the XRAY Connection Manager is created initially from the board file. For complete board file syntax information, refer to the XRAY OCD online help or the *XRAY OCD User's Guide*.

- Target Action After Connection [`connect` keyword]
Specifies the target action or actions (halt, reset, restart) when a connection is made.
- Target Core Position on Daisy Chain [`flag` keyword]
Indicates whether the target core is the final core on a daisy chain.
- Host Parallel Port [`lpt` Keyword]
Indicates which host parallel port is used for the Macraigor JTAG Raven cable. The Raven cable is the physical connection between the host and the target.
- JTAG/BDM Cable Type [`port` Keyword]

Indicates the type of Macraigor JTAG/BDM cable.

XRAY Commands

For complete command syntax information, refer to the XRAY OCD online help or the *XRAY OCD Commands Reference*.

- BREAKTYPE command
- TARGETMISC Command

Allows users to control the Macraigor RAVEN device directly for their special purposes.

Breakpoints

- 256 S/W breakpoints are supported
- The number of H/W breakpoints depends on each processor.

Will This Run on My Computer?

This section lists the host computer hardware and software required to install and run this release.

Operating Systems

The following operating systems are supported by this release:

Windows Operating Systems

- Windows 2000 with service pack #1
- Windows NT 4.0 with service pack #6
- Window 98 with latest Microsoft Library Update

UNIX Operating Systems

- HP-UX 10.20 and above
- SUN Solaris 2.6 and above.

Computer Hardware

The following computer system components are required to successfully install and use this release:

PC Hardware

- Pentium 133MHz or higher performance processor
- Hard Disk space (within 50MB)
Full Installation: 150 MB
- 32 MB RAM
- CD-ROM Drive
- Color Monitor
- At least one parallel port

UNIX Hardware

- Hard Disk space (within 50M)
Full Installation: 200 MB
- CD-ROM Drive
- Color Monitor

Anything Else?

For information concerning problems with previous versions of this product that have been corrected in this release or that were found after this version was released, please contact your Mentor Graphics support representative or check the Support website:

<http://www.mentor.com/embedded/support/index.html>

Compiler --- 68000/ColdFire

The following defects have been fixed in this release.

- DR291269: Assembler exits with Application Error.
- DR291235: The compiler does not remove intermediate files after compilation in some cases.
- DR291023: Assembler generates incorrect debug information in the presence of conditional directives like `#ifdef`, `#ifndef`.
- DR298282: Compiler driver deletes user supplied object files.

Compiler --- PowerPC

The following defects have been fixed in this release.

-
- DR294528: Standard include files are not being picked by the compiler by default.
 - DR297740: The default UNIX path to pick the standard files is incorrect.
 - DR270289: Linker warnings refer to the wrong filenames.

Assembler/Linker/Librarian — 68000/ColdFire

Please make the following corrections to the *Assembler/Linker/Librarian User's Guide and Reference for the 68000/ColdFire Families*, as appropriate:

Linker Options Documentation

- -WI Option

The linker reports a syntax error when multiple options are passed to it through the driver using the `-wl` switch.

Assembler Options Documentation

- -Wa Option

The assembler reports a syntax error when multiple options are passed to it through the driver using the `-wa` switch.

- Exits With the Error

When command line flags are passed to the assembler through the driver (**mcc68k**) as `-wa, -f, "brs, e, g, d, b, opnop, pcr"`, the assembler (**evergreen**) exits with the error "Missing Flag - program terminated."

Assembler/Linker/Librarian — PowerPC

Please make the following addition to the *Assembler/Linker/Librarian User's Guide and Reference for the PowerPC Family*:

GNU Powerpc-eabi-objcopy Converter Documentation

The GNU powerpc-eabi-objcopy converter is included in the ASMPPC toolkit release. The converter executable can be found in the *install_dir/bin* directory, while its sources can be found in the *install_dir/etc/asmppc/util* directory. A man page describing the various command line options and features of the utility can be found in the *install_dir/etc/asmppc/util* directory. The *install_dir/etc/asmppc/util/src* directory contains the make files and sources used to create the **powerpc-eabi-objcopy** utility.

A README file in that directory describes how to build the executable on a SPARC Sun4 computer, SPARC Solaris computer, Hewlett-Packard 9000 Series 700 computer, or a PC computer running Windows 95, 98 or NT 4.0.

The GNU **powerpc-eabi-objcopy** converter is provided with the ASMPPC toolkit to supply a method for converting ELF absolute files into Motorola S-record files. To convert an absolute file, the following options should be used when invoking **powerpc-eabi-objcopy**:

```
powerpc-eabi-objcopy -O srec absfile srecfile
```

Other options are available and are documented in the **powerpc-eabi-objcopy.1** man page.

The **powerpc-eabi-objcopy** utility is provided “as is” with no warranty expressed or implied.

Note that earlier installations of this toolkit used the *install_dir/util* directory to hold the sources for this converter. Since the sources are now stored in a different location, users may want to remove that directory.

XRAY Simulator

Please make the following corrections to the *XRAY Simulator User's Guide*, *XRAY Simulator Commands Reference*, and XRAY Simulator online help, as appropriate:

XRAY Commands Documentation

- PRINTANALYSIS Command supported
- PRINTPROFILE Command supported
- RESTORE Command supported

Syntax

```
resto[re] [ save_filename] [ , file_format]
```

Description

Restores the memory and registers saved with the **SAVE** command.

Parameters

- *save_filename*

Specifies the name of the file created with the **SAVE** command that contains debugger information.

- *file_format*

Specifies the format of the saved file. The format defaults to the XRAY Simulator save format.

Rules

- If a filename is not specified, the default filename **xray.sav** is used.
- If a full pathname is not specified for the filename, then the debugger will search for the file in the directory where the XRAY Simulator was started.

- SAVE Command supported

Syntax

```
SAVE [ save_filename ]  
SA [ save_filename ]
```

Description

Saves the current state of the memory and registers including:

- The memory map set with the **RAMACCESS**, **ROMACCESS**, or **NOMEMACCESS** commands
- General registers
- Special processor registers
- Processor name

Parameters

- *save_filename*

Specifies the name of the save file that will contain debugger information.

Rules

- If a filename is not specified, the default filename **xray.sav** is used. To restore a saved file, use the **RESTORE** command.
- If a full pathname is not specified for the save file, XRAY Simulator will search for the file in the working directory.

XRAY HP Probe

Please make the following corrections to the *XRAY HP Probe User's Guide*, *XRAY HP Probe Commands Reference*, and XRAY HP Probe online help, as appropriate:

XRAY Macros Documentation

- INPORT Macro
Not supported.
- OUTPORT Macro
Not supported.

XRAY OCD

Please make the following corrections to the *XRAY OCD User's Guide*, *XRAY OCD Commands Reference*, and XRAY OCD online help, as appropriate:

Board File Documentation

Modify the **ocd.brd** board file entry syntax as follows:

The syntax is:

```
host_name port_config "Name in quotes" "Debug Name" [ \  
options]
```

where:

- *host_name* is a Windows system name (default PC name)
- *port_config* is a port configuration, and consists of the following entries:
"ocd:port:lpt:speed:cpu:cpu_var:flag[:connect=action]"
- *options* must be specified on a separate line following a backslash (\).

Corporate Headquarters
Mentor Graphics Corporation
8005 SW Boeckman Road
Wilsonville, Oregon 97070-7777
503-685-7000

Sales and Product Information
800-547-3000
503-685-8000

North American SupportCenter
800-547-4303

www.mentor.com