HP WDB 5.4 Release Notes

HP 9000 and HP Integrity Systems

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1 Announcement

This document describes the latest changes to and features of the HP WDB version 5.2 debugger for HP-UX systems running on Itanium® and PA-RISC processors.

The latest information on HP WDB can be obtained from http://www.hp.com/go/wdb/.

What Is HP WDB 5.4?

HP WDB 5.4 is an HP-supported implementation of the GDB open source debugger. It supports source-level debugging of programs written in HP C, HP aC++, and Fortran 90 on HP-UX 11i v1.6 and later for Itanium systems, and HP-UX 11i and later for PA-RISC systems. This release works on programs compiled for Intel® Itanium and PA-RISC architectures.

Summary of Changes in WDB 5.4

WDB 5.4 includes the following enhancements and defect fixes:

- New command `which`:

  The `which` command takes a symbol as an argument and prints the information on a given symbol. It prints the scope information (the current block scope addresses), the line information of the definition of the symbol, and the filename in which the definition of the symbol occurs. The which command does not work for global and type symbols since they do not contain line information.

  Syntax:

  ```
  which <symbol>
  ```

  For example :

  ```
  (gdb) which i
  Line 4 of "example.c" block starts at address 0x29a8 <main>
     and ends at 0x29e4 <main+0x3c>.
  ```

- New command `exit`

  The `exit` command can be used to quit from the current GDB session.

- Support for setting breakpoints using shared library name

  Breakpoints can be set on functions in a shared library, by specifying the library name with the function name.

  For Example:

  ```
  libutil.sl:foo
  ```

- Support for persistent display of expressions across re-runs:

  The display of expressions across re-runs has been made persistent. Earlier, the user had to re-initiate the display settings for every run.

- Support for RTC corruption checks:

  RTC heap corruption checks for calls to `strcpy()`, `memset()`, and `memcpy()` have been added.

  ```
  set  heap-check string [on|off]
  ```

  If the heap-check feature is enabled, WDB checks whether calls to `strcpy()`, `strncpy()`, `memcpy()`, `memccpy()`, `memset()`, `memmove()`, `bzero()`, `bcopy()` will cause data corruption in the heap. A limitation to this feature is that it can only detect cases where the target address was legally allocated in the heap. It cannot detect corruption for pointers to global or local arrays, or for unallocated pointers.

- New commands `info heap process` and `info heap arena`:

  The `info heap process` command enables the user to view a high level memory usage report of a process.

  The `info heap arena` command enables the user to view high level memory usage details of each arena.

  The `info heap process` and `info heap arena` are available only on HP-UX 11i version 3.

2 Patches, Defects, and Fixes

This chapter describes the defects fixed in this version of HP WDB.

- For `batchrtcfiles=exec1:exec2:exec3` does not work and batchrtc continues to profile all execs.
- GDB hangs in batch mode memory leak detection.
- RTC library hangs if, `execl()` call to spawn GDB from the library fails.
- GDB is not able to continue after hitting a breakpoint in a dynamically loaded shared library.
- GDB for IPF does not display a library loaded by `shl_load`.
- GDB fails to load `add-symbol-file` on IPF.
- The `info line <function>` command does not work properly if the argument `<function>` is static overloaded.
- The `info line <function>` command does not work properly if the argument `<function>` is static overloaded.
- Can not reach the functions beyond line `65536`, from functions to visit window.
- The `xbp` command should override the menu selection for overloaded functions.

3 Known Problems and Workarounds

This section describes known problems and suggested workarounds in this release of HP WDB.

- **Problem**:

  WDB errors out if tried to attach to a process whose real user id and saved user id are not equal to the debugger process effective user id or the debugger is not run as a super-user. Not abiding by this condition becomes a security violation and is imposed by HP-UX for `ttrace` with attach request.

- **Work Around**:

  A work around for this would be to run the debugger as a super-user.

4 Compatibility Information and Installation Requirements

This section contains installation information for HP WDB.

The HP WDB debugger consists of the following `swinstall` products:

Table 4-1

Product Name	Description
HP WDB	HP WDB Debugger
HP WDB-GUI	Optional graphical user interface component for the WDB Debugger

If you install WDB GUI on a system where HP WDB has not yet been installed, HP WDB will be installed automatically.

Compatibility

HP WDB is not supported on releases of the HP-UX operating system prior to 11i. Check the HP WDB web page, http://www.hp.com/go/wdb, for a version of HP WDB compatible with Itanium-based systems.

Supported Configurations

The following configurations are supported by HP WDB:

- Installing and running locally from an HP-UX 11i to 11.23 system
- Installing on an HP-UX 11i to 11.23 system, with the display redirected to a remote HP-UX 11.x node

Filesets

HP WDB is the product name for the HP WDB debugger. The HP WDB product contains the following components:

- Runtime contains one fileset: WDB
- Documentation contains one fileset: WDB-DOC
- Manuals contains one fileset: WDB-MAN

NOTE On HP-UX 11.0 and later, DEBUG-PRG is a co-requisite fileset for HP WDB and is automatically selected during installation.

The WDB GUI product contains the following sub-products:

- Runtime contains one fileset: WDB-GUI-RUN
- Help contains one fileset: WDB-GUI-HELP
- Manuals contain one fileset: WDB-GUI-MAN

HP WDB GUI requires the WDB product. If WDB is not already installed, it will be automatically selected during installation.

Disk Space Requirements

The approximate disk space required for HP WDB is 17 megabytes.

The HP WDB GUI requires an additional 7 megabytes of disk space.

Installation Instructions

To install HP WDB, run the SD-UX swinstall command. It invokes a user interface that leads you through the installation. It also gives you information about disk space requirements, version numbers, product descriptions, and dependencies.

Specific installation instructions are available on the WDB download page. Refer to http://www.hp.com/go/wdb/.

For more information on installation procedures and related issues, refer to Managing HP-UX Software with SD-UX and other README, installation, and upgrade documentation provided or described in your HP-UX 11.x operating system package.

NOTE If you install a compiler product that includes a version of HP WDB earlier than this release, swinstall generates the following message:

```
A later revision (one with a higher revision number) of
fileset "WDB-GUI.WDB-GUI-HELP,r=B.11.11.02" has already been
installed.
Either remove this fileset or change the "allow_downdate"
```

If you want to keep the later version, you can ignore the message. The new products will be installed, and the latest version of HP WDB will remain unchanged.

Debugging Core Files from a Different System

The correct system and user shared libraries are copied with the executable and core file to the other system, and the location of the shared libraries is defined by setting `GDB_SHLIB_PATH` or `GDB_SHLIB_ROOT` before debugging the core file.

For details about these variables, refer to Debugging with GDB , Section 12.2.

Table 4-2

Core files produced by	Can be debugged on
32 bit executables	Any PA-RISC 1.1 or PA-RISC 2.0 system with an HP-UX version greater than or equal to the HP-UX version on the machine where the core file was produced.
64 bit executables	Other PA-RISC 2.0 Wide systems with HP-UX versions greater than or equal to the HP-UX version on the machine where the core file was produced.

5 Features Supported in Previous Vesrions of HP WDB

For information on previous HP WDB releases visit the Archived Documents section at http://www.hp.com/go/wdb.

6 Related Documentation

Table 6-1lists the documents available for HP WDB:

Table 6-1

Document	Format	Location

Debugging with GDB	PDF	`/opt/langtools/wdb/doc/gdb.pdf`
		Emacs:
		`/opt/langtools/wdb/doc/gdb.info`
		(Copy the files to your info directory first.)

GDB Quick Reference Card	PDF	`/opt/langtools/wdb/doc`
Getting Started with HP WDB	HTML	`/opt/langtools/wdb/doc/html/wdb/C/GDBtutorial.html`
XDB to WDB Transition Guide	HTML	`/opt/langtools/wdb/doc/index.html`
Using the HP WDB Terminal User Interface		`/opt/langtools/wdb/doc/index.html`
GDB manpage	*gdb(1)*	

7 WDB Mailing Lists

WDB Mailing Lists

To receive an electronic mail message only when HP releases a new version of HP WDB, subscribe to the product news mailing list.

Send an electronic mail message to `majordomo@cxx.cup.hp.com`.

To add yourself to the list, type the following in the body of the message:

`subscribe wdb-announce`.

To remove yourself from the list, type the following in the body of the message:

`unsubscribe wdb-announce`.

WDB Mailing Lists