Product Datasheet: CHORUS/GDB r3.0

- ❖**Debugger for C and C++**
- ❖**Host-target debugging and local-only debugging**
- ❖**Heterogeneous microprocessor hosts and targets**
- ❖**Heterogeneous operating system hosts and targets**
- ❖**Debug concurrent threads per process**

The GNU symbolic source level debugger GDB, from the Free Software Foundation, is a well-known and proven debugger for use in UNIX® programming environments. Chorus has created CHORUS/GDB, an enhanced GDB for distributed debugging of multi-threaded CHORUS® programs distributed on CHORUS/MiX™. It allows host-target debugging (from non-CHORUS or CHORUS systems) of processes running on CHORUS/MiX, and permits developers to deliver finished projects faster and with a higher level of quality.

Main Benefits

- Debugs multi-threaded programs
- Supports distributed programs
- Supports host-target debugging and self-hosted debugging
- Able to debug MiX UNIX processes or CHORUS actors

Basic Functionality

CHORUS/GDB allows the user to execute a program while examining what the program is doing:

- Start the program, specifying anything that might affect its behavior
- Make the program stop on specified conditions (breakpoints)
- Examine what has happened when the program has stopped, so you can see bugs as they occur
- Change things in the program so the user can correct the effects of one bug and go on to learn about another without having to recompile

Chorus Enhancements

Chorus enhancements provide better support for the multi-threaded and distributed CHORUS/MiX environment:

- Host-target debugging
- Debugging multi-threaded processes
- Debugging multi-threaded actors
- Debugging running processes
- Distributed debugging

Host-target Debugging

CHORUS/GDB can be run from:

- a UNIX host to debug user processes on CHORUS/MiX systems
- a CHORUS/MiX host to debug user and supervisor actors on systems running CHORUS Nucleus and CHORUS C_actors subsystem

Multi-threaded Program Debugging

- View the state of each individual thread when the program has stopped (stackframes, local variables)
- Restart one/some/all threads after a stop
- Restart any thread in step-by-step mode
- Ignore stops of some threads

Distributed Debugging

- The program being debugged may run on any site, debugging it as if it is running on the same site as CHORUS/GDB
- The CHORUS/GDB user can define at run-time on which site to start the program to be debugged
- Multiple distributed programs may be debugged simultaneously, allowing concurrent debugging of clients and servers in client-server systems

Debugging Running Processes

- CHORUS/GDB can "attach" dynamically to a user process that is already running, locally or remotely

CHORUS/GDB Deliverables

The fee for the CHORUS/GDB includes delivery of the following items:

Debugger Deliverables

CHORUS/GDB, including the following major components:

- CHORUS/GDB to run on the host
- RGDB-A remote GDB dæmon to run on the remote target(s) for debugging CHORUS actors
- RGDB-P remote GDB dæmon to run on the remote target(s) for debugging MiX processes

Documentation Deliverables

- Standard GDB User's Manual (basic functionality)
- CHORUS/GDB User's Manual (covering enhancements)
- GDB Reference Card
- GDB Internals Guide
- On-line help integrated in GDB
- Installation Guide

Prerequisites

- Appropriate running reference host system(s)
- Appropriate running reference target system(s)
- Standard "C" development environment (make, "C", ...)
- A machine capable of reading QIC streamer tapes

Media

- 60 MB QIC-24 streamer cartridge tape

Reference host environments

- SunOS 4.1 on Sun-4
- CHORUS/MiX V.3.2 r3.0.3 or later
- CHORUS/MiX V.4 r1.2 or later

Reference target environments

- CHORUS/MiX V.3.2 r3.0.3 or later (no local file support required)
- CHORUS/MiX V.4 r1.2 or later

Reference GNU debugger

- Free Software Foundation GNU Debugger version 4.5

Programming Language Support

- C
- C++ (Cfront and G++)

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