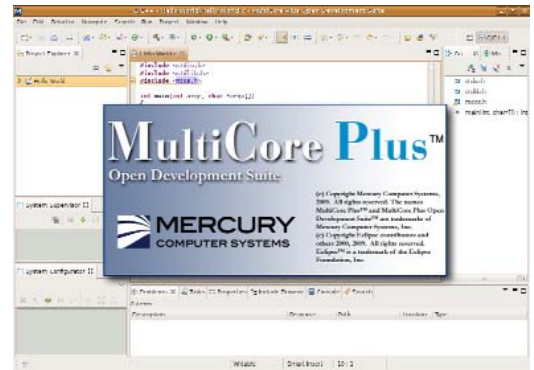


MultiCore Plus

Open Development Suite

Eclipse-Based IDE Extended to Support Multicomputer Development

- Shorten development cycles and decrease time to market with extended suite of tools
- Improve performance using TATL to profile, understand, and correct performance issues
- Launch and debug multicomputer applications
- Monitor embedded processes
- Use plugins to configure and monitor your multicomputer



The MultiCore Plus® Open Development Suite (ODS) from Mercury Computer Systems is an integrated development environment (IDE) for multicomputer applications. ODS leverages the open-source Eclipse IDE for Linux®, so developers can take advantage of third-party Eclipse plugins. It also provides optional, advanced multicomputer and multicore development Eclipse plugins. ODS includes the plugins you need to configure, develop software for, debug, and monitor your multicomputer. TimeStorm™ by Timesys® provides the environment for kernel or driver development.

ODS is designed to simplify the complexities of developing software for a multicomputer. All the packages combine to ease software development and simplify testing of complicated applications.

Increased Development Efficiency

The Standard ODS IDE includes the base Eclipse IDE and the Eclipse C/C++ Development Tools, plus managed build definitions for developing applications for Mercury processing boards. In the professional bundle of MultiCore Plus (Pro Edition), ODS has been further extended to include packages that ease development of complicated applications for multicomputers.

The System Configurator plugin lets you configure boot settings for each node in the embedded domain: the boot image of the embedded OS, network configuration, and the ability to tailor the OS file system. Other plugins let you monitor, run, and debug applications on one compute node or a whole cluster.

ODS also includes the Trace Analysis Tool and Library (TATL™) Viewer. TATL's event recording library includes an application-programming interface (API) for logging real-time events across multiple processors. Other TATL functions initialize trace buffers, record events and data, set trigger controls, and define event groups for selective data recording. With a closely synchronized time base across multiple processors, TATL can accurately correlate events among these processors.

ODS Plugins

Project Creation Wizards

ODS project creation wizards let you easily configure build settings, such as compiler chain, target architecture, and optionally configure Mercury include paths and libraries. The project creation wizards can be used for all MultiCore Plus supported platforms running Linux.

Features

- Create projects using the native toolchain or cross-compile toolchain
- Optionally set variables to include paths to Mercury content

Benefits

- Quickly get started on new project development

System Configurator

The ODS System Configurator provides a "hard" view of the embedded domain. It performs platform-wide target system definition and boot phase control. Users have a visual view of their system, expandable through the chassis/slot-module/node levels. Users can alter the system configuration, including flash and target network parameters at any component level. This visual tool greatly reduces the complexity of configuring hundreds of nodes within an embedded domain.

Features

- Implement and program the MCP System Boot Sequence
- Connect to a multicomputer via a serial port or a lab annex
- Auto-discover components based on the serial RapidIO fabric

Benefits

- Quickly and easily configure all boot parameters of the entire multicomputer
- Easily update the system when the hardware configuration changes

Multicomputer Run and Debug Launcher

ODS lets you launch your multicomputer applications on any or all nodes within the embedded domain with a single click. You can also launch on user-defined ICS clusters or CEs. Each launched application is assigned its own I/O console.

ODS also lets you remotely launch a debug session on one or more nodes or CEs with a single click. A new debug session within the Eclipse C/C++ Development Tooling (CDT) is established. Quickly focus on the debug content that you choose with a single click.

Features

- Launch an executable in parallel on multiple compute nodes
- Specify launch settings like core affinity and environment variables

Benefits

- Easily launch or debug an entire multicomputer application
- Monitor output from each process in separate console windows

System Supervisor

The ODS System Supervisor lets developers quickly and easily view information about selected system elements and perform system management operations. An expandable tree represents elements of the multicomputer domain as detected on the embedded local area network. You can expand all the way down to the compute node level to view the node status and executing threads. Through System Supervisor, you can suspend, resume, kill, debug/attach processes or change core affinity.

Features

- Visualize system initialization
- Monitor and control processes
- Scales with the target system

Benefits

- Quickly see all processes running across the whole system
- Easily identify any resource limitations
- Automatic ICS cluster identification

Multicomputer Debugger

The ODS Multicomputer Debugger extends the basic debug capabilities provided with the standard ODS IDE and CDT to support multicomputer-aware run and debug. These extensions provide process launching on an ordered list of compute nodes and dynamic remote debug server creation to handle remote cross-debugging.

Features

- Step through and debug processes on multiple processors in a single IDE
- Debug applications on specific CEs in ICS clusters

Benefits

- Simplifies debugging of complicated multicomputer applications

TATL and TATL Viewer

The Trace Analysis Tool and Library (TATL) helps software developers tune and debug real-time multiprocessor and multicore processor applications. The TATL tool uses minimally intrusive trace analysis to clarify processor interactions. User-defined events are logged in local memory with minimal overhead, allowing the system to proceed with real-time processing. By logging these events at the beginning and end of interactions, such as message sends/receives and requests/grants of a shared resource, a developer can collect data on the complex communication and control patterns of the application.

The TATL Event Viewer's graphical interface displays synchronized traces along the same time scale, allowing instant comparison of the traces. Features such as the dual time markers give TATL a logic analyzer feel and make timing analysis easier. The time difference displayed between the time markers can be used to verify real-time constraints across traces.

See the TATL datasheet for more information.

Features

- View dynamic multiprocessor or multicore interactions
- Easily synchronize events and detect performance bottlenecks
- Highly scalable from a few to hundreds of processors
- Minimally intrusive impact on run-time operation
- Documents application performance and acceptance criteria

Benefits

- Discover hard-to-find bugs in your multi-threaded and multi-process applications by minimally impacting the run-time behavior
- Identify performance bottlenecks to make your application more efficient

Specifications

Standard ODS IDE

Eclipse IDE (Ganymede) v3.4.1 (or greater)

Eclipse C/C++ Development Tooling (CDT) 5.0.1 (or greater)

Linux OS

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2286.00E-0709-DS-ods



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