



## WHAT IS NEW IN NEXT-GENERATION G2

### G2 8.0 SETS THE BENCHMARK FOR REAL-TIME REASONING ENGINES

Gensym's next-generation G2®, Version 8.0, sets a new software-industry benchmark for real-time reasoning engines by delivering major new capabilities for reasoning, integration, embeddability, UI, deployment, and developer productivity. No other software technology meets the benchmark that next-generation G2 sets for reasoning via rules, procedures, and object modeling; for integration and embeddability via standards; for deployment flexibility; for stable deployment in mission-critical applications; and for application development productivity.

G2 is the foundation for reasoning-driven applications that automate critical operational decisions in real time within manufacturing, government, utilities, telecommunications, aerospace, transportation, and finance. G2 applications predict, diagnose, and respond to operational problems and optimize the performance of complex operations.

### POWERFUL REAL-TIME REASONING TECHNOLOGY

G2's rules, procedures, and object models all work efficiently in real time to enable rapid execution of operational decisions and actions. G2 can process thousands of rules and procedures per second and concurrently execute rules, procedures, and models, based on defined priorities. Variables are time-stamped to support histories of data and events, and reasoning about behavior over time. New real-time reasoning technology capabilities available in next-generation G2 include:

- *Distributed publish/subscribe facility* expands the ability of developers to trigger reasoning logic in response to real-time events and to build scalable and distributed applications that respond dynamically to changes within the application. This facility exposes G2 events, such as item color change, attribute value changes, object deletion, addition or removal of objects from workspaces, and custom events. The facility can be used within one G2 or via remote G2, G2 Gateway, or G2 ActiveXLink connections.



### DEPLOYMENT FLEXIBILITY

G2 provides deployment flexibility through its portability across operating systems, including Windows, UNIX, and Linux, and through its support of integration standards. Next-generation G2's expanded capabilities for deployment include:

- *A cross-platform client/server architecture* enables G2 8.0's new native Windows UI client to connect to G2 servers running on any of G2's supported operating systems, including Microsoft Windows, UNIX, and Linux.
- *A thin UI client architecture on Windows* simplifies system administration by enabling developers to specify a UI client's menus, dialogs, and other UI elements on the G2 server, then create them dynamically using native Windows controls. Unlike thick client architectures, updates to the application's UI are made on a central server rather than on each individual client machine.



Next-generation G2 offers deployment flexibility through cross-platform client/server architecture.



## PROVEN AND STABLE DEPLOYMENT PLATFORM

G2 is a proven platform for stable and reliable deployment of mission-critical applications. G2 has proven itself in applications with millions of hours of online control for industrial processes and with years of uninterrupted execution. G2 8.0 ensures the highest possible levels of stability through an extensive automated and interactive testing program.

- *Message management and reasoning tools* support highly scalable, distributed operator-advisory and alarm management applications.

## STANDARDS-BASED INTEGRATION AND EMBEDDABILITY

G2's reasoning-engine logic, objects, data structures and UI readily integrate with operational systems and embed within third-party applications through support of standards including ActiveX/COM, .NET, Java RMI, SQL, ODBC, JMS, OPC, XML, HTTP, and others. New integration and embeddability capabilities in next-generation G2 include:

- *G2 ActiveXLink*, G2's ActiveX control for integration of application logic, objects, and data, offers greatly expanded capabilities within Microsoft Windows environments. G2 ActiveXLink exposes rich G2 data structures as COM objects, including data structures such as G2 objects, G2 workspaces, G2 sequences, G2 structures, and arrays. G2 8.0 enables COM and .NET applications to access G2 objects by reference and to be notified of changes in G2 such as attribute changes, color changes or deletion of items. This cuts development overhead for integrating G2 with other Windows systems. For example, developers can now pass G2 objects as arguments in remote procedure calls via G2 ActiveXLink.
- *A new WorkspaceView ActiveX control* improves the ability of developers to display G2 workspaces within Microsoft COM-compliant containers, such as Internet Explorer, or applications built using C++, Visual Basic, or .NET. With this new control, developers can readily build G2 clients that embed workspace views, such as within Web pages or Visual Basic applications, using standard Microsoft development and deployment tools.
- *Additional API functions in G2 Gateway*, G2's high-performance C/C++ programming interface for real-time sharing of application logic, objects, and data, simplify programmatic access to G2 objects from other systems via remote procedure calls (RPCs). The API functions enable developers to declare which user-defined and system-defined attributes G2 should send when a G2 Gateway bridge makes an RPC that returns an item. For instance, developers can now return, via RPCs, the name and universal unique identification (UUID) attributes of an object to facilitate taking advantage of unique identification of G2 objects.
- *G2 WebLink*, G2's API for creating HTML-based Web interfaces, supports display of Unicode in Web pages for multilingual displays. It is also now built upon G2 Gateway 8.0 to set a foundation for delivery of future enhancements.
- *Extended e-mail functionality* sends MIME e-mail messages such as HTML documents. G2's JMail bridge also now supports sending and receiving e-mail attachments.

## INTUITIVE USER INTERFACE

G2's highly interactive and graphical user interface simplifies prototyping, development, and online deployment of solutions that automate and support real-time decisions. Next-generation G2's new UI capabilities include:

- *An entirely new Telewindows*, G2's UI client, enables developers to deploy G2 solutions with a full Microsoft Windows look-and-feel for greater ease-of-use. New floating and dockable toolbars speed up user interactions within applications.

- A *Windows Multiple Document Interface (MDI)* for Telewindows is a major advancement of the G2 UI. When running Telewindows clients on Microsoft Windows operating systems, users can now display application workspaces in separate windows, each with native scrollbars and standard buttons for minimizing, maximizing, and closing the window. The G2 server can be running on any of its supported operating systems, including Microsoft Windows, UNIX and Linux.
- A *native Windows dialogs facility* for Telewindows is an important new UI feature that simplifies system administration of deployed systems. Native dialogs are specified on the G2 server and created dynamically using standard Microsoft controls. This feature works with G2 servers running on Windows, UNIX, or Linux systems, while the clients are running on Windows-based PCs.
- *New display formats* enhance displays of object attribute values through new formatting specifications.
- *Thai Character support* adds to a developer's ability to internationalize G2 applications.

## COMPATIBILITY WITH PREVIOUS GENERATIONS

Next-generation G2 protects earlier investments in Gensym technology through compatibility with the previous generations. G2 8.0 is designed to enable smooth migration of applications running in earlier versions of G2.

## OPERATING SYSTEM SUPPORT

G2 8.0 is available on the following operating systems: Microsoft Windows NT/2000/2003/XP, Sun Solaris on SPARC architectures, IBM AIX, Red Hat Linux and Linux Enterprise, HP-UX, and Compaq Tru64 UNIX.

## HOW TO GET G2 8.0 AND MORE INFORMATION

Please contact Gensym's Order Services department in the U.S. at [production@gensym.com](mailto:production@gensym.com) or (781) 265-7106 to get your copy of G2 8.0. For more details on G2 8.0's new features and enhancements, please review the release notes, also available from Order Services.

## HIGH LEVELS OF DEVELOPER PRODUCTIVITY

G2's comprehensive software environment enables high levels of developer productivity versus traditional programming. The environment features intuitive graphical, object-oriented modeling; understandable natural language rules; generic rule-based and procedural logic; built-in understanding of time; immediate programming changes without stopping to compile or relink code; and numerous developer tools and utilities. Next-generation G2 delivers these new developer productivity capabilities:

- *Improved processing performance* on Microsoft Windows operating systems improves productivity for both developers and application users. While the level of improvement is highly application dependent, benchmark results and tests with CPU-bound applications, such as simulations, have demonstrated a significant performance boost.
- *New extended programmatic control* of manual user interactions gives developers greater flexibility in building application functionality. G2 8.0 allows developers to execute a number of new menu choices programmatically for an individual item, as well as for a selected group of items. For example, a developer can programmatically display the item tables, start an interactive item resize session, start an interactive clone of a group of items by attaching them to the mouse, and align items or distribute items evenly.
- *Hash table and priority queue data structures* reduce development effort in developing and manipulating data structures.
- *G2 JavaLink*, G2's API for Java-based integration, is based on the latest Sun Java 1.4 release.

## ABOUT GENSYM

Gensym Corporation is a provider of software products and services that help organizations automate aspects of their operations that have historically required the direct attention of human experts. Gensym's products and services are based on Gensym's flagship product, G2, which emulates the reasoning of human experts as they assess, diagnose, and respond to unusual operating situations or seek to optimize operations. Organizations across a wide range of industries and markets, including manufacturing, communications, transportation, aerospace, and government, utilize G2 to maximize the performance and availability of their operations.

Gensym and its numerous partners deliver a range of services, including training, software support, application consulting and complete solutions. Through partners and through its direct sales force, Gensym serves customers worldwide.

## FOR MORE INFORMATION,

visit Gensym at [www.gensym.com](http://www.gensym.com) or call  
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