
GemStone[®]

GemBuilder for Java[™]
Release Notes

March 2004



Version 2.1.1

Send your comments about this manual to docs@gemstone.com

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Patents

GemStone is covered by U.S. Patent Number 6,256,637 "Transactional virtual machine architecture" and Patent Number 6,360,219 "Object queues with concurrent updating". GemStone may also be covered by one or more pending United States patent applications.

About This Documentation

These release notes describe new features and the bugs fixed in the GemBuilder® for Java™ Version 2.1.1 release.

We recommend that everyone using GemBuilder for Java read these release notes before beginning installation or development. These release notes are also available in PDF format with your GemBuilder for Java distribution and on the GemStone customer website.

Other Useful Documents

- *GemBuilder for Java Tools* online documentation describes the independent set of tools that let you explore and modify Smalltalk code in the server.
- The *GemStone/S Programming Guide* describes the GemStone System and the GemStone Smalltalk language.
- If you will be acting as a system administrator, or developing software for someone else who must play this role, you should read the *GemStone/S System Administration Guide*.

Technical Support

GemStone provides several sources for product information and support. GemBuilder for Java product manuals provide extensive documentation, and should always be your first source of information. GemStone Technical Support engineers will refer you to these documents when applicable. However, you may need to contact Technical Support for the following reasons:

- Your technical question is not answered in the documentation.
- You receive an error message that directs you to contact GemStone Technical Support.
- You want to report a bug.
- You want to submit a feature request.

Questions concerning product availability, pricing, keyfiles, or future features should be directed to your GemStone account manager.

When contacting GemStone Technical Support, please be prepared to provide the following information:

- Your name, company name, and GemStone/S license number
- The GemBuilder for Java and GemStone/S versions you are using
- The hardware platform and operating system you are using
- A description of the problem or request
- Exact error message(s) received, if any

Your GemBuilder for Java support agreement may identify specific individuals who are responsible for submitting all support requests to GemStone. If so, please submit your information through those individuals. All responses will be sent to authorized contacts only.

For non-emergency requests, you should contact Technical Support by web form, email, or facsimile. You will receive confirmation of your request, and a request assignment number for tracking. Replies will be sent by email whenever possible, regardless of how they were received.

World Wide Web: <http://support.gemstone.com>

This is the preferred method of contact. The Help Request link is at the top right corner of the home page—please use this to submit help requests. This form requires an account, but registration is free of charge. To get an account, just complete the Registration Form, found in the same location. You'll be able to access the site as soon as you submit the web form.

Email: support@gemstone.com

Please do not send files larger than 100K (for example, core dumps) to this address. A special address for large files will be provided as appropriate.

Facsimile: (503) 629-8556

When you send a fax to Technical Support, you should also leave a voicemail message to make sure your fax will be picked up as soon as possible.

Telephone: (800) 243-4772 or (503) 533-3503

We recommend you use telephone contact only for more serious requests that require immediate evaluation, such as a production system that is non-operational.

Emergency requests are handled by the first available engineer. If you are reporting an emergency and you receive a recorded message, do not use the voicemail option. Transfer your call to the operator, who will take a message and immediately contact an engineer.

Non-emergency requests received by telephone are placed in the normal support queue for evaluation and response.

24x7 Emergency Technical Support

GemStone offers, at an additional charge, 24x7 emergency technical support. This support entitles customers to contact us 24 hours a day, 7 days a week, 365 days a year, if they encounter problems that cause their production application to go down, or that have the potential to bring their production application down. Contact your GemStone account manager for more details.

GemStone Web Site

The GemStone Web site, at <http://support.gemstone.com>, provides a variety of information to help you use GemBuilder for Java products. Use of this site requires an account, but registration is free of charge. To get an account, just complete the Registration Form, found in the same location. You'll be able to access the site as soon as you submit the web form.

The following types of information are provided at this web site:

Help Request is an online form that allows designated technical support contacts to submit requests for information or assistance via email to GemStone Technical Support.

Technotes provide answers to questions of general interest submitted by GemBuilder for Java customers. They may contain coding examples, links to other sources of information, or downloadable code.

Bugnotes identify performance issues or error conditions that you may encounter when using a GemBuilder for Java product. A bugnote describes the cause of the condition, and, when possible, provides an alternative means of accomplishing the task. In addition, bugnotes identify whether or not a fix is available, either by upgrading to another version of the product, or by applying a patch. Bugnotes are updated regularly.

Tips and Examples provide information and instructions for topics that usually relate to more effective or efficient use of GemStone products. Some Tips may contain code that can be downloaded for use at your site.

Release Notes and Install Guides for your product software are provided in PDF format.

Documentation for GemBuilder for Java is provided in PDF format. This is the same documentation that is included with your GemBuilder for Java product, with the exception of the API reference files (javadocs).

Community Links provide customer forums for discussion of GemBuilder for Java product issues.

Technical information on the GemStone Web site is reviewed and updated regularly. We recommend that you check this site on a regular basis to obtain the latest technical information for GemStone products. We also welcome suggestions and ideas for improving and expanding our site to better serve you.

Training and Consulting

Consulting and training for all GemStone products are available through GemStone's Professional Services organization.

- Training courses are offered periodically at GemStone's offices in Beaverton, Oregon, or you can arrange for onsite training at your desired location.
- Customized consulting services can help you make the best use of GemStone products in your business environment.

Contact your GemStone account representative for more details or to obtain consulting services.

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GemBuilder for Java

2.1.1 Release Notes

GemBuilder for Java version 2.1.1 fixes several critical bugs, and adds a few new features. These release notes provide details of the changes in this release. Please take time to read through them before installing or upgrading, to acquaint yourself with the changes.

To install GemBuilder for Java version 2.1.1, follow the instructions in the GemBuilder for Java Installation Guide.

Details of the changes are described in the following sections.

- “New Features” on page 1-1
- “Bugs Fixed” on page 1-2

1.1 New Features

The following new features have been added in GemBuilder for Java 2.1.1:

Added protocol to determine size of server pool

In GemBuilder for Java 2.1.1, the method `GbjBroker>>sizeOfServerPool` has been added make it easy to determine the total number of gems in the server pool.

This method can be executed either by logging into the broker gem using the Java interface and executing:

```
GbjBroker current sizeOfServerPool
```

or by using GbjBrokerInterface from topaz or GBS, for example:

```
GbjBrokerInterface new execute: 'GbjBroker current  
sizeOfServerPool' port: 9090 token: 'GbjAdministrator'
```

GBJ Broker can be configured for periodic aborts

In GemBuilder for Java 2.1.1, a new parameter has been added, #abortOnTimeout. When this is set to true, the GBJ Broker will initiate an abort when the event loop timeout occurs, as specified in the configuration parameter #eventTimeout.

The purpose of this abort is to avoid holding up voting after garbage collection, and therefore avoid preventing execution of later garbage collection, on idle systems. In GemStone/S 6.1 and later, epoch, markForCollection, and other garbage collection processes cannot be started until the voting phase of a previous garbage collection is complete. The voting phase of GemStone/S garbage collection does not complete until each session, including the GBJ Broker, has voted, which occurs at commit/abort. The GBJ Broker previously only aborted when signalled to do so by the stone, which on a idle system may not have happened for extended periods.

Log files now have unique default names

The default names for the GBJ Broker and GBJ gem log file names have been changed to append the process PID. This will avoid inadvertently overriding log files. The new default log file names are:

Broker: *gbjbroker-pid.log*

Gems: *gbjid-pid.log*

Where *pid* is the pid of the process, and *id* is the GBJ session id of the gem.

1.2 Bugs Fixed

The following bugs have been fixed since GemBuilder for Java 2.1:

Empty java strings marshalled as nil

Empty Java strings were erroneously marshalled as nil, rather than a string of length zero, causing errors on the server side. (#30174)

Oops over 2 billion marshalled incorrectly

When oop values were above 2 billion (2,147,483,647 or $2^{31}-1$), the oops were incorrectly marshalled to the client as 8 byte signed values. This has been changed to marshal these as 4 byte unsigned values. However, since Java treats integers as signed, oops larger than 2,147,483,647 will appear in Java as negative values. As long as these values are not modified on the client, this does not cause any GemStone problems.

Note that oop values above 2 billion correspond to a System _oopHighWaterMark over 2,147,483,647, and a total number of objects in your repository over 536,870,911. (#27066)

Multiple select incorrectly enabled in browser

The GBJ user interface permitted multiple selection, although no operations on multiple selections were allowed. The GUI has been corrected. (#29283)



