
GemStone®

GemStone/S *Release Notes*

Version 6.3.1

July 2008

GEMSTONE TM

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PATENTS

GemStone is covered by U.S. Patent Number 6,256,637 "Transactional virtual machine architecture", Patent Number 6,360,219 "Object queues with concurrent updating", and Patent Number 6,567,905 "Generational Garbage Collector". GemStone may also be covered by one or more pending United States patent applications.

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Preface

About This Documentation

These release notes describe changes in the GemStone/S version 6.3.1 release. We recommend that everyone migrating to this version read these release notes before beginning installation, testing or development.

For information on installing or upgrading to this version of GemStone/S, please refer to the *GemStone/S Installation Guide*.

These documents are also available on the GemStone customer website, as described below.

Technical Support

GemStone provides several sources for product information and support. The product-specific manuals and online help provide extensive documentation, and should always be your first source of information. GemStone Technical Support engineers will refer you to these documents when applicable.

GemStone Web Site: <http://support.gemstone.com>

GemStone's Technical Support website provides a variety of resources to help you use GemStone 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 allows designated support contacts to submit new requests for technical assistance and to review or update previous requests.

Documentation for GemStone/S is provided in PDF format. This is the same documentation that is included with your GemStone/S product.

Release Notes and **Install Guides** for your product software are provided in PDF format in the Documentation section.

Downloads and **Patches** provide code fixes and enhancements that have been developed after product release. Most code fixes and enhancements listed on the GemStone Web site are available for direct downloading.

Bugnotes, in the Learning Center section, identify performance issues or error conditions that you may encounter when using a GemStone 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.

TechTips, also in the Learning Center section, 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.

Community Links provide customer forums for discussion of GemStone 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.

You may need to contact Technical Support directly 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 GemStone product and version 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 GemStone 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, the support website is the preferred way to contact Technical Support. Only designated support contacts may submit help requests via the support website. If you are a designated support contact for your company, or the designated contacts have changed, please contact us to update the appropriate user accounts.

Email: support@gemstone.com

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

Requests for technical assistance may also be submitted by email or by telephone. We recommend you use telephone contact only for more serious requests that require immediate evaluation, such as a production system that is non-operational. In these cases, please also submit your request via the web or email, including pertinent details such as error messages and relevant log files.

If you are reporting an emergency by telephone, select the option to transfer your call to the technical support administrator, who will take down your customer information and immediately contact an engineer.

Non-emergency requests received by telephone will be 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. For more details, contact your GemStone account manager.

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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GemStone/S 6.3.1

Release Notes

Overview

GemStone/S 6.3.1 is a new version of the GemStone Smalltalk object server. This release provides full support for the Windows platform, and includes several critical bug fixes. We recommend everyone using GemStone/S to upgrade to version 6.3.1.

These release notes provide changes between the previous version of GemStone/S, version 6.3, and version 6.3.1. If you are upgrading from a version prior to 6.3, please also review the release notes for each intermediate release to see the full set of changes. Although versions 6.2 and 6.3 were unavailable or not fully supported on Windows, the release notes for these versions include changes and bug fixes that also apply to Windows and should be reviewed before upgrading from version 6.1.x on Windows.

For details about installing GemStone/S 6.3.1 or upgrading from earlier versions of GemStone/S or other GemStone server products, see the *GemStone/S Installation Guide* for version 6.3.1.

This release supports Solaris, Linux, AIX and Windows.

Changes and New Features

Added cachepgsvr executable

Due to bug #39199 - Unable to kill stuck sessions with secure mode configuration - a new executable has been added, `$GEMSTONE/sys/cachepgsvr`. This is a version of `pgsvrmain` used to run cache page servers. You can set the S bit for this executable to allow the cache page servers to run as root, but the other page servers to run under the regular administrative account.

This does not affect you unless you are running in `netldi` secure mode. See the *System Administration Guide*, starting on page 72, for more information on `netldi` modes.

The installation script has been updated to prompt for and set the executable bits appropriately.

Bugs Fixed

The following bugs in GemStone/S 6.3 have been fixed in GemStone/S 6.3.1:

Risk of corruption during conversion

The low level conversion process did not correctly handle certain types of commit records that could exist in 6.1.x repositories. This resulted in corruption in the converted and upgraded repository. (#38992)

Possible Stone crash in postprocessing after gem terminates

When a session is terminating, there is a narrow window where the stone operations retrieving data about the session may have found inconsistent data. GemStone code failed to check for this, resulting in a SEGV. (#39143)

Administrative account cannot log in during low free space

When the repository is in low free space, SystemUser and DataCurator were unable to log in. Normally, logins are disabled all users except SystemUser and DataCurator, so that administrative accounts can log in to relieve the low space conditions. (#39184)

Illegal task status when gems terminated due to low free space

When repository free space gets low, part of the stone's handling is to terminate gem sessions, to recover the space used by sessions. Gem termination under these circumstances could result in an error "Adding session with illegal task status 9 to run queue". (#39185)

Possible deadlock in page server

If a pageserver received a SIGTERM while certain internal calls were being made, it was possible for it to deadlock on the shared cache mutex. (#39200)

Unable to kill stuck sessions with secure mode configuration

Stuck sessions are killed by the stone or cache page server. However, the kill will fail if the stone/cache page server are not running as the same unix user as the stuck session process. This is true When running in secure mode (netldi run as root with the S bit).(#39199)

To avoid this, the stoned and cachepgsvr executables must be setuid to root, as is done with the netldid executable.

In addition, there is a new executable, cachepgsvr, which is used to run remote cache page servers. This allows you to run remote cache page servers as root, but leave pgsvrmain without the setuid to root, so other kinds of page servers do not run as root.

Objects locked by no session

If an object was locked by a session, the lock may have persisted after the session was no longer logged in, if the gem or page server process still existed. This is due to changes in the way GemStone recycles system resources in 6.2. (#39196)

Session termination may be incorrectly reported as Cache coherency error

If a session is terminated, or gets a lostOT, while it is performing a page read, the page read is terminated. The failure of the page read was incorrectly reported as a cache coherency error, rather than triggering a warning. This cause of cache coherency errors did not actually indicate any problem with pages in the cache or on disk. (#39144)

Symbol name collisions with applications shared libraries

GemStone's process of linking shared libraries left more symbols globally visible than was necessary. This made it possible for customer-created shared libraries to encounter symbol name collisions with symbols in the GemStone shared libraries. To address this issue, GemStone shared libraries are now linked in such a way that only externally callable GCI functions are globally visible. (#38906)

