
GemStone®

GemStone/S 64 Bit Release Notes

Version 2.4.1

December 2009

GEMSTONE[™] S[™] 64

INTELLECTUAL PROPERTY OWNERSHIP

This documentation is furnished for informational use only and is subject to change without notice. GemStone Systems, Inc. assumes no responsibility or liability for any errors or inaccuracies that may appear in this documentation.

This documentation, or any part of it, may not be reproduced, displayed, photocopied, transmitted, or otherwise copied in any form or by any means now known or later developed, such as electronic, optical, or mechanical means, without express written authorization from GemStone Systems, Inc.

Warning: This computer program and its documentation are protected by copyright law and international treaties. Any unauthorized copying or distribution of this program, its documentation, or any portion of it, may result in severe civil and criminal penalties, and will be prosecuted under the maximum extent possible under the law.

The software installed in accordance with this documentation is copyrighted and licensed by GemStone Systems, Inc. under separate license agreement. This software may only be used pursuant to the terms and conditions of such license agreement. Any other use may be a violation of law.

Use, duplication, or disclosure by the Government is subject to restrictions set forth in the Commercial Software - Restricted Rights clause at 52.227-19 of the Federal Acquisitions Regulations (48 CFR 52.227-19) except that the government agency shall not have the right to disclose this software to support service contractors or their subcontractors without the prior written consent of GemStone Systems, Inc.

This software is provided by GemStone Systems, Inc. and contributors "as is" and any expressed or implied warranties, including, but not limited to, the implied warranties of merchantability and fitness for a particular purpose are disclaimed. In no event shall GemStone Systems, Inc. or any contributors be liable for any direct, indirect, incidental, special, exemplary, or consequential damages (including, but not limited to, procurement of substitute goods or services; loss of use, data, or profits; or business interruption) however caused and on any theory of liability, whether in contract, strict liability, or tort (including negligence or otherwise) arising in any way out of the use of this software, even if advised of the possibility of such damage.

COPYRIGHTS

This software product, its documentation, and its user interface © 1986-2009 GemStone Systems, Inc. All rights reserved by GemStone Systems, Inc.

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.

TRADEMARKS

GemStone, **GemBuilder**, **GemConnect**, and the GemStone logos are trademarks or registered trademarks of GemStone Systems, Inc. in the United States and other countries.

UNIX is a registered trademark of The Open Group in the United States and other countries.

Sun, **Sun Microsystems**, **Solaris**, and **SunOS** are trademarks or registered trademarks of Sun Microsystems, Inc. All **SPARC** trademarks are used under license and are trademarks or registered trademarks of SPARC International, Inc. **SPARCstation** is licensed exclusively to Sun Microsystems, Inc. Products bearing SPARC trademarks are based upon an architecture developed by Sun Microsystems, Inc.

HP and **HP-UX** are registered trademarks of Hewlett Packard Company.

Intel and **Pentium** are registered trademarks of Intel Corporation in the United States and other countries.

Microsoft, **MS**, **Windows**, **Windows XP**, **Windows 2000**, **Windows 2003**, and **Windows Vista** are registered trademarks of Microsoft Corporation in the United States and other countries.

Linux is a registered trademark of Linus Torvalds and others.

Red Hat and all Red Hat-based trademarks and logos are trademarks or registered trademarks of Red Hat, Inc. in the United States and other countries.

AIX and **POWER4**, **POWER5**, and **POWER6** are trademarks or registered trademarks of International Business Machines Corporation.

Other company or product names mentioned herein may be trademarks or registered trademarks of their respective owners. Trademark specifications are subject to change without notice. All terms mentioned in this documentation that are known to be trademarks or service marks have been appropriately capitalized to the best of our knowledge; however, GemStone cannot attest to the accuracy of all trademark information. Use of a term in this documentation should not be regarded as affecting the validity of any trademark or service mark.

GemStone Systems, Inc.
1260 NW Waterhouse Avenue, Suite 200
Beaverton, OR 97006

Preface

About This Documentation

These release notes describe changes in the GemStone/S 64 Bit version 2.4.1 release. We recommend that everyone migrating to this version read these release notes before beginning installation, testing or development.

No separate Installation Guide is provided with this release. For instructions on installing GemStone/S 64 Bit version 2.4.1, or upgrading or converting from previous products or versions, see the Installation Guide for version 2.4.

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

Terminology Conventions

This document uses the following terminology:

The term “GemStone” is used to refer both to the product, GemStone/S 64 Bit, or previous GemStone/S server products; and to the company, GemStone Systems, Inc.

Technical Support

GemStone provides several sources for product information and support. The product-specific manuals provide extensive documentation, and should be your first source of information.

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:

Documentation for GemStone/S 64 Bit is provided in PDF format. This is the same documentation that is included with your GemStone/S 64 Bit 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, and past and current versions of GemBuilder for Smalltalk.

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.

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.

Help Requests

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.

Website: <http://techsupport.gemstone.com>

Email: support@gemstone.com

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

Requests for technical assistance may be submitted online, or 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.

Contents

Chapter 1. GemStone/S 64 Bit 2.4.1 Release Notes

Overview	1
Changes and New Features	1
UserProfiles without otherPassword privilege may now query for own status.	1
GBS 7.2.x clients on Solaris on SPARC	2
VSD can read larger data files on AIX	2
Bugs Fixed	2
Restore from Backup/Transaction log restore issues.	2
commitRestore may cause stone shutdown	2
startstone script did not complete when repository in restore mode	2
AdminGem failed attempts to start with Stone in restore mode	2
Missing transaction log interpreted as end of logs to restore	3
GsFile operations on disk full caused gem crash	3
Explicitly setting some configuration parameters to default resulted in warning	3
Missing statistics for configuration involving linked topaz with s-bit set	3
GemStone install utilities required library from Sun complier	3
User action load error with different compiler	3
Poor handling of error 2249	3
Risk of hang on stuck spin lock	3

GemStone/S 64 Bit 2.4.1 Release Notes

Overview

GemStone/S 64 Bit 2.4.1 is a new version of the GemStone/S 64 Bit object server. This release provides fixes for a number of bugs, including critical bugs in the recovery/restore subsystem; we recommend everyone using GemStone/S 64 Bit upgrade to this new version. The details of these changes are provided in this document.

These release notes provide changes between the previous version of GemStone/S 64 Bit, version 2.4, and version 2.4.1. If you are upgrading from a version prior to 2.4, please also review the release notes for each intermediate release to see the full set of changes.

No separate Installation Guide is provided with this release. For installation instructions, use the Installation Guide for version 2.4.

Changes and New Features

UserProfiles without otherPassword privilege may now query for own status

Formerly, UserProfile queries such as `isDisabled` required the `otherPassword` privilege, even if executed for the current UserProfile. Now, these methods do not require the `otherPassword` privilege for the current UserProfile, although this privilege is still required if querying about another user.

The following methods are affected:

```
lastLoginTime  
lastPasswordChange  
activeUserIdLimit  
loginsAllowedBeforeExpiration  
isDisabled  
reasonForDisabledAccount  
isReadOnly
```

GBS 7.2.x clients on Solaris on SPARC

GemStone/S 64 Bit v2.4.1 includes the ability to run GBS 7.2 or later clients on Solaris on Sparc.

VSD can read larger data files on AIX

VSD, as a 32-bit application, has limits on the size of files that can be read before it runs out of resources and shuts down. Improvements have been made in this release, increasing the statmonitor data file size that can reliably be read on AIX.

Bugs Fixed

The following bugs in GemStone/S 64 Bit 2.4 have been fixed in GemStone/S 64 Bit 2.4.1.

Restore from Backup/Transaction log restore issues

Version 2.4 introduced changes for improved performance in the implementation of transaction log restore. A number of problems were introduced by these changes.

In addition to fixing the bug listed below, and other restore-related bugs in corner cases, version 2.4.1 has had extensive additional testing in this area, and other corrections and improvements have been made.

Version 2.4.1 includes a change in behavior. When a fork in time scenario is detected, so the system has become corrupt (see the System Administration Guide, pp307-308, for details), the stone will shut down as well as printing a warning. Previously, the warning was printed, but it was possible to continue running the corrupted system until it encountered into another error.

commitRestore may cause stone shutdown

After restoring from an online extent copy backup, during commitRestore the stone has a problem attempting to create a transaction log that already exists. This causes the stone to abruptly shutdown. (#40371).

In addition, after restoring from a programmatic backup (a backup made with fullBackupTo:...), if the stone is shut down any time between the restore from backup and the commitRestore, this problem will occur. (#40346).

startstone script did not complete when repository in restore mode

If the repository was started in restore mode, the startstone script did not receive the expected response from a stone. As a result, the startstone did not complete, although the stone was correctly started up. (40354)

AdminGem failed attempts to start with Stone in restore mode

Linux only

As of version 2.4, the Admin GcGem is permitted to run while in restore mode, although it is not required. On Linux, the Admin GcGem failed to login, but the automatic restart attempt was made every minute. (#40373)

Missing transaction log interpreted as end of logs to restore

If a transaction log in the sequence is missing during `restoreFromCurrentLogs`, the restore would consider the transaction log prior to the missing log to be the last one, and report success, in spite of the existence of later, unrestored tranlogs. If not noticed and manually corrected, this has the risk of fork-in-time scenarios. (#40369)

GsFile operations on disk full caused gem crash

Linux only

When a gem running on Linux used GsFile to write to a file on a disk that is full, it reported an error on close, as expected. However, when the session logged out, the gem would crash with a fatal memory deallocation error (40364)

Explicitly setting some configuration parameters to default resulted in warning

If a configuration parameter had a default value of 0, meaning that the system should compute the value, but the range did not include 0, explicitly setting the parameter to 0 resulted in a warning. (#40344)

Missing statistics for configuration involving linked topaz with s-bit set

All statistics were omitted from statmonitor data for linked topaz sessions, if topaz was started as a user other than the user owning the GemStone processes, the users were not in the same group, and the s-bit was set for the topaz executable. This was due to permissions problem accessing the system statistics. (#40338).

Now, GemStone statistics are collected for such sessions. The permission problem is unavoidable in this configuration, so system statistics are not available.

GemStone install utilities required library from Sun compiler

Solaris only

The GemStone `installgs` script could report an error on systems without the Sun compiler installed. A utility called by this script was compiled using a function that is only provided in `libsunmath`, which is part of the compiler. (#40400).

User action load error with different compiler

If a user action was compiled using a compiler other than the one the GemStone server was compiled with, it resulted in errors loading the user action library. (#40312)

Poor handling of error 2249

Error 2249, `#rtErrCommitDisallowed`, is triggered when a session with commits disabled attempts to commit. If this error was encountered during login (as a result of bug #40410), the error reported did not include useful text (#40414). Moreover, in a linked topaz session, it would cause topaz to crash on exit. (#40413).

Note that bug #40410 is not fixed in this release.

Risk of hang on stuck spin lock

There was a small risk of infinite loop in the spin lock code on a stuck queue lock, even if the process is sent `SIGTERM` or the SPC Monitor died. (#40362)

