GemStone®

GemStone/S 64 Bit™ Release Notes

Version 3.2.14

April 2016

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PATENTS

GemStone software is covered by U.S. Patent Number 6,256,637 “Transactional virtual machine architecture”, Patent Number 6,360,219 “Object queues with concurrent updating”, Patent Number 6,567,905 “Generational garbage collector with persistent object cache”, and Patent Number 6,681,226 “Selective pessimistic locking for a concurrently updateable database”. GemStone software 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 64 Bit™ version 3.2.14 release. Read these release notes carefully before you begin installation, conversion testing, or development with this release.

No separate Installation Guide is provided with this release. For instructions on installing GemStone/S 64 Bit version 3.2.14, or upgrading or converting from previous products or versions, see the Installation Guide for version 3.2.6.

These documents are available on the GemTalk website, as described below.

Terminology Conventions

The term "GemStone" is used to refer to the server products GemStone/S 64 Bit and GemStone/S, and the GemStone family of products; the GemStone Smalltalk programming language; and may also be used to refer to the company, now GemTalk Systems, previously GemStone Systems, Inc. and a division of VMware, Inc.

Technical Support

Support Website

gemtalksystems.com

GemTalk's website provides a variety of resources to help you use GemTalk products:

- **Documentation** for the current and for previous released versions of all GemTalk products, in PDF form.
- **Product download** for the current and selected recent versions of GemTalk software.
- **Bugnotes**, identifying performance issues or error conditions that you may encounter when using a GemTalk product.

- **TechTips**, providing information and instructions that are not in the documentation.
- **Compatibility matrices**, listing supported platforms for GemTalk product versions.

This material is updated regularly; we recommend checking this site on a regular basis.

Help Requests

You may need to contact Technical Support directly, if your questions are not answered in the documentation or by other material on the Technical Support site. Technical Support is available to customers with current support contracts.

Requests for technical assistance may be submitted online, 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 down. The support website is the preferred way to contact Technical Support.

Website: support.gemtalksystems.com

Email: techsupport@gemtalksystems.com

Telephone: (800) 243-4772 or (503) 766-4702

When submitting a request, please include the following information:

- Your name and company name.
- The versions of GemStone/S 64 Bit and of all related GemTalk products, and of any other related products, such as client Smalltalk products.
- The operating system and version you are using.
- A description of the problem or request.
- Exact error message(s) received, if any, including log files if appropriate.

Technical Support is available from 8am to 5pm Pacific Time, Monday through Friday, excluding GemTalk holidays.

24x7 Emergency Technical Support

GemTalk 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, for issues impacting a production system. For more details, contact GemTalk Support Renewals.

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GemTalk Professional Services provide consulting to help you succeed with GemStone products. Training for GemStone/S is available at your location, and training courses are offered periodically at our offices in Beaverton, Oregon. Contact GemTalk Professional Services for more details or to obtain consulting services.

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Chapter

1 GemStone/S 64 Bit 3.2.14 Release Notes

Overview

GemStone/S 64 Bit 3.2.14 is a new version of the GemStone/S 64 Bit object server. This release includes several minor new features and fixes two critical bugs; we recommend everyone using GemStone/S 64 Bit v3.2.x upgrade to this new version.

These release notes provide changes between the previous version of GemStone/S 64 Bit, version 3.2.13, and version 3.2.14. If you are upgrading from a version prior to 3.2.13, review the release notes for each intermediate release to see the full set of changes.

For installation, upgrade and conversion instructions, use the *Installation Guide* for version 3.2.6. Note that on upgrade from 3.1.x, application code recompilation is now recommended; see "Upgrade" on page 9.

Supported Platforms

Platforms for Version 3.2.14

GemStone/S 64 Bit version 3.2.14 is supported on the following platforms:

- Solaris 10 and 11 on SPARC
- Solaris 10 on x86
- AIX 6.1 and AIX 7.1
- Red Hat Linux ES 6.4 and 6.5, Ubuntu 12.04, and SUSE Linux Enterprise 12, on x86
- Mac OSX 10.6.8 (Snow Leopard), with Darwin 10.8.0 kernel, on x86

For more information and detailed requirements for supported platforms, please refer to the *GemStone/S 64 Bit Installation Guide* for that platform.

GBS Versions

The following versions of GBS are supported with GemStone/S 64 Bit version 3.2.14. You must use GBS version 7.6.1 or later for VisualWorks, or 5.4.2 or later for VA Smalltalk with GemStone/S 64 Bit v3.2.14.

GBS version 8.1

VisualWorks 7.10.1 32-bit	VisualWorks 7.10.1 64-bit
▸ Windows 8, Windows 2008 R2 and Windows 7 ▸ Solaris 10 on SPARC ▸ Ubuntu 12.04, RedHat Linux ES 6.4 and 6.5, and SUSE Linux ES 12	▸ Windows 8, Windows 2008 R2 and Windows 7 ▸ Solaris 10 on SPARC ▸ Ubuntu 12.04, RedHat Linux ES 6.4 and 6.5, and SUSE Linux ES 12

GBS version 7.6.1

VisualWorks 7.10.1 32-bit	VisualWorks 7.10.1 64-bit	VisualWorks 7.9.1 32-bit
▸ Windows 8, Windows 2008 R2 and Windows 7 ▸ Solaris 10 on SPARC ▸ Ubuntu 12.04, RedHat Linux ES 6.4 and 6.5, and SUSE Linux ES 12	▸ Windows 8, Windows 2008 R2 and Windows 7 ▸ Solaris 10 on SPARC ▸ Ubuntu 12.04, RedHat Linux ES 6.4 and 6.5, and SUSE Linux ES 12	▸ Windows 2008 R2 and Windows 7 ▸ Solaris 10 on SPARC ▸ Linux ES 6.4 and SUSE Linux ES 12

GBS version 5.4.2

VA Smalltalk 8.6	VA Smalltalk 8.5.2
▸ Windows 8, Professional or above ▸ Windows 2008 R2 ▸ Windows 7, Professional or above	▸ Windows 2008 R2 ▸ Windows 7

For more details on supported GBS and client Smalltalk platforms and requirements, see the *GemBuilder for Smalltalk Installation Guide* for that version of GBS.

VSD Version

The GemStone/S 64 Bit v3.2.14 distribution includes VSD version 5.1.3. The previous version of GemStone/S 64 Bit, v3.2.13, included VSD v5.1.2.

Between v5.1.2 and v5.1.3, the changes consist of new statistics definitions.

For more details, see the *Release Notes* for VSD v5.1.3.

Upgrade

The upgrade instructions from 3.1.x to 3.2.x do not specify that method recompilation is required. However, there were minor changes in the bytecodes generated from method compilation between v3.1.x and 3.2.x, related to the changes that allow a step point at the beginning of a method.

A case has been observed in which a SEGV in a Gem was apparently related to this difference in the bytecodes. While this is a very rare situation and is not believed to be at risk for causing any other problems, for reliability it is recommended that all application methods be recompiled as part of the 3.1.x to 3.2.x upgrade process.

Changes and New Features

Handling C-level errno from CCallout

The way CCallout handles the C global `errno` has been changed in this release.

Now, the `errno` resulting from a C-level call via CCallout is cached in VM memory. Each time that `CCallout >> callWith:` is invoked, `errno` is set to the cached value before the function, and the cached value is set to `errno` after the function executes. This preserves the value against other GemStone internal calls.

CCallout has added class methods to access the cached value:

CCallout class >> errno
: Returns the SmallInteger value of the C global variable `errno` that was saved by the most recent invocation of `CCallout >> callWith:`.

CCallout class >> errno: aSmallInteger
: If aSmallInteger == -1, Returns the SmallInteger value of the cached `errno` value, `ffiErrno`. If aSmallInteger >= 0, stores aSmallInteger into the session's cache.

printlogs utility now allows suppression of displaying strings

The output of the **printlogs** utility is used for debugging and for analysis of repository transaction. When printing page information, the output can include data incidental to the actual issue being examined, in the form of strings that may include sensitive information.

Now, the added `nostrings` argument to printlogs suppresses printing the contents of all kinds of strings and similar byte collections, including ByteArrays. .

Internal changes to shared libraries related to ICU

The interface between the libgci and libicu shared libraries has been modified, to make future upgrades to new versions of ICU more flexible. This change has no impact on the behavior in 3.2.1.4.

Added Cache Statistic

The following statistic has been added:

AlmostOutOfMemoryCount (Gem)
AlmostOutOfMemoryCount is the number of times that either an AlmostOutOfMemory notification was signalled to the application, or smalltalk stack was printed to the gem log because temporary object memory was approaching full.

Bugs Fixed

File descriptor leak in NetLDI on Linux

Linux and v3.2.13 only

The fix on Linux for bug 46066 in v3.2.13 introduced a file descriptor leak. The leak can result in the NetLDI getting into a state where it does not respond to requests, and continuously prints SocketAccept errors with the "Too many open files" message, potentially filling up the file system. (#46143)

GsFile write following a read may write at end of file

When a GsFile was open for update (that is, for both reading and writing), in certain cases if a read operation is followed by a write, the text to be written was appended to the end, not at the desired location. (#46120)