
GemStone®

GemStone/S 64 Bit™
Release Notes

Version 2.4.4.4

January 2011

GEMSTONE  64

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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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About This Documentation

These release notes describe changes in the GemStone/S 64 Bit™ version 2.4.4.4 release. Please 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 2.4.4.4, 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.

Technical Support

GemStone Technical Support Website

GemStone's Technical Support website provides a variety of resources to help you use GemStone products. Our new site is available via the URL:

<http://support.gemstone.com>

or directly at:

<http://community.gemstone.com/display/GSS64/GemStoneS>

All GemStone product documentation is provided in PDF form on this website. In addition to documentation, the support.gemstone.com website provides:

- ▶ Downloads and Patches, including past and current versions of GemBuilder for Smalltalk.
- ▶ Bugnotes, identifying performance issues or error conditions that you may encounter when using a GemStone product.
- ▶ TechTips, providing information and instructions that are not in the documentation.
- ▶ Compatibility matrices, listing supported platforms for GemStone 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.

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 down. The support website is the preferred way to contact Technical Support.

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

Email: techsupport@gemstone.com

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

Your GemStone support agreement may identify specific designated contacts who are responsible for submitting all support requests to GemStone. If so, please submit your information through those individuals.

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.

When submitting a request, please include the following information:

- ▶ Your name, company name, and GemStone server license number.
- ▶ The versions of all related GemStone 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 GemStone holidays.

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, for issues impacting a production system. 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. GemStone periodically offers training courses at our offices in Beaverton, Oregon, or training can be arranged at your location. Contact your GemStone account representative for more details or to obtain consulting services.

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GemStone/S 64 Bit

2.4.4.4 Release Notes

Overview

GemStone/S 64 Bit 2.4.4.4 is a new version of the GemStone/S 64 Bit object server. This release provides several feature enhancements and fixes several serious bugs; we recommend all GemStone/S 64 Bit application upgrade to this version.

These release notes provide changes between the previous version of GemStone/S 64 Bit, version 2.4.4.3, and version 2.4.4.4. If you are upgrading from a version prior to 2.4.4.3, 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.

Supported Platforms and GBS Versions

Platforms

GemStone/S 64 Bit version 2.4.4.4 is supported on the following platforms:

- ▶ Solaris 9 and 10 on SPARC
- ▶ Solaris 10 on x86
- ▶ HP-UX 11.11 and 11.31 on PA-RISC
- ▶ HP-UX 11.23 and 11.31 on Itanium
- ▶ AIX 5.3, TL5, SP3 and AIX 6.1, TL1, SP1
- ▶ SuSE Linux ES 10 SP1, and Red Hat Linux ES 5.0 and 5.5

For more information and detailed requirements for each supported platforms, please refer to the GemStone/S 64 Bit v2.4 Installation Guide for that platform.

GBS versions

The following versions of GBS are supported with GemStone/S 64 Bit version 2.4.4.4, with the following client Smalltalk and platform versions.

GBS versions 7.2 through 7.3 on VisualWorks may encounter serious errors when running with GemStone/S 64 Bit 2.4.4 and above, including with version 2.4.4.4. GBS users should upgrade to version 7.3.1 or later, or patch GBS. The patch is available here:

<http://community.gemstone.com/display/GSS64/GBS+Patch+40751>

GBS version 7.3.3

VW 7.7.1 32-bit	VW 7.7.1 64-bit	VW 7.7 32-bit	VW 7.7 64-bit
<ul style="list-style-type: none"> ▶ Windows XP, Windows 2003, Windows Vista, and Windows 7 ▶ Solaris 9 and 10 on SPARC ▶ SuSE Linux ES 10, Red Hat Linux ES 5.0 and 5.5 	<ul style="list-style-type: none"> ▶ Solaris 10 on SPARC ▶ SuSE Linux ES 10, Red Hat Linux ES 5.0 and 5.5 	<ul style="list-style-type: none"> ▶ Windows XP, Windows 2003, Windows Vista, and Windows 7 ▶ Solaris 9 and 10 on SPARC ▶ SuSE Linux ES 10, Red Hat Linux ES 5.0 and 5.5 	<ul style="list-style-type: none"> ▶ Solaris 10 on SPARC ▶ SuSE Linux ES 10, Red Hat Linux ES 5.0 and 5.5

GBS version 7.3.2

VW 7.7 32-bit	VW 7.7 64-bit	VW 7.6 32-bit with 32-bit 7.6c OE
<ul style="list-style-type: none"> ▶ Windows XP, Windows 2003, Windows Vista, and Windows 7 ▶ Solaris 9 and 10 on SPARC ▶ SuSE Linux ES 10, Red Hat Linux ES 5.0 and 5.5 	<ul style="list-style-type: none"> ▶ Solaris 10 on SPARC ▶ SuSE Linux ES 10, Red Hat Linux ES 5.0 and 5.5 	<ul style="list-style-type: none"> ▶ Windows XP and Windows 2003 ▶ Solaris 9 and 10 on SPARC ▶ SUSE Linux ES 10 and Red Hat Linux ES 5.0

GBS version 7.1.2patch2

VW 7.5 with 7.5 OE	VW 7.4.1 with 7.4d OE	VW 5i.1 Envy with 5i.4c OE
<ul style="list-style-type: none"> ▶ Windows XP and Windows 2003 ▶ Solaris 9 and 10 on SPARC ▶ HP-UX 11.11 on PA-RISC ▶ SuSE Linux ES 10 	<ul style="list-style-type: none"> ▶ Windows XP ▶ Solaris 9 and 10 on SPARC ▶ HP-UX 11.11 on PA-RISC ▶ SuSE Linux ES 10 	<ul style="list-style-type: none"> ▶ Windows XP

GBS version 5.3.2

VA Smalltalk 8.0.2	VA Smalltalk 8.0.1	VA Smalltalk 7.5.2
▶ Windows 7, Windows Vista, Windows 2003 Server, Windows XP	▶ Windows 7, Windows Vista, Windows 2003 Server, Windows XP	▶ Windows 2003 Server, Windows XP

For more details on supported platforms and requirements, see the release notes for that version of GBS.

Changes in this Release

Class >> definition and constraints

Constraints have been deprecated in all versions of GemStone/S 64, and are not used internally, with the exception of the method `instVarAt:put:`. For compatibility with subclass creation protocol, the fileout form, as created by the method `Class >> definition`, has continued to include the `constraints: keyword`.

In version 2.1, subclass creation protocol without the `constraints: keyword` was added. As of version 2.4.3, the `Class >> definition` output did not include the `constraints:`, as it was no longer necessary for filein. This change was inadvertently not included in the Release Notes for v2.4.3.

In order to accommodate customer dependencies on constraints for instance variable typing information, in version 2.4.4.4 we have restored the constraints information to the output from the `Class >> definition` method. Now, constraints information is included, only in the case where the Class has defined constraints.

Cache statistics changes

The following statistics have been added, related to “Further reduction in impact of cache statistics” on page 10.

LastSleepTimeBetweenScans (SPC Monitor)

Number of milliseconds the shared page cache monitor statistics thread slept after the last complete scan of the cache.

LastSleepTimeWithinScan (SPC Monitor)

Number of milliseconds the shared page cache monitor statistics thread last slept while in the loop which computes cache statistics. The thread will sleep for a short interval each time it scans 100,000 cache frames.

CacheScanCount (SPC Monitor)

Number of times the shared page cache monitor statistics thread has scanned the entire shared page cache.

The following cache statistic has been removed:

LastWakeupInterval

Bugs Fixed

objErrAlreadyExists during dead object reclaim

When the GcGem was reclaiming dead objects while a GBS session was creating new objects that contained circular references, it was possible for object creation to fail with the error #objErrAlreadyExists, error 2105. (#41116)

Write locked objects may be GCed, resulting in lock on new object

If a write lock was placed on an object, and that object became dereferenced and was garbage collected, the write lock remained associated with the OOP of that object. As a result, when a new object was created with that OOP, it would be write locked. (#41095)

Now, objects with read or write locks are not GCed. You should always release locks on objects before dereferencing them

Very large MultiByteString methods could error

With very large MultiByteStrings (DoubleByteStrings or QuadByteStrings), searching for a character using #indexOf:, or sending #printString, could result in errors. (#41211)

become: primitive failure reason not included in GBS error text

In version 2.4.3, the primitive code supporting the become: method was enhanced so a specific reason for a become failure can usually be provided. However, the error message text that is used to provide the error to GBS was not updated, so the added reason argument was not included in error messages in GBS. (#40512)

Memory contents reporting may be inaccurate

The method System class >> _vmInstanceCounts: incorrectly included obsolete pom_gen objects. (#41197).

Further reduction in impact of cache statistics

Version 2.3.1.6 included changes that reduced the impact of collecting statistics on very large systems. v2.4.4.4 includes additional improvements to ensure the SPC Monitor does not use more than 25% of a CPU, on average. Statistics have also been added to improve monitoring; see **CacheScanCount**, **LastSleepTimeBetweenScans**, and **LastSleepTimeWithinScan** on page 9. (#39708)

Removing symbol from AllSymbols did not update size

When manually removing a symbol from AllSymbols, the cached size of AllSymbols was not updated. The result of AllSymbols size was no longer correct. (#41162).

Note that removing symbols manually from AllSymbols is not recommended. The removed symbol must be unreferenced; removing a referenced symbol will result in uncanonical symbols in the repository.