


GemStone/S 64 BitTM

Release Notes

Version 3.7.4.3

July 2025



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PATENTS

GemStone software has been 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".

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Preface

About This Documentation

These release notes describe changes in the GemStone/S 64 Bit™ version 3.7.4.3 release. Read these release notes carefully before you begin installation, upgrade, or development with this release.

No separate Installation Guide is provided with this release. For instructions on installing GemStone/S 64 Bit version 3.7.4.3, or upgrading or converting from previous products or versions, see the Installation Guide for version 3.7.2.

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

We recommend checking this site on a regular basis for the latest updates.

Help Requests

GemTalk Technical Support is limited to customers with current support contracts. Requests for technical assistance may be submitted online (including by email), or by telephone. We recommend you use telephone contact only for urgent requests that require immediate evaluation, such as a production system down. The support website is the preferred way to contact Technical Support.

Website: techsupport.gemtalksystems.com

Email: techsupport@gemtalksystems.com

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

Please include the following, in addition to a description of the issue:

- ▶ The versions of GemStone/S 64 Bit and of all related GemTalk products, and of any other related products, such as client Smalltalk products, and the operating system and version you are using.
- ▶ Exact error message received, if any, including log files and statmonitor data 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.

Training and Consulting

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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Release Notes for 3.7.4.3

Overview

GemStone/S 64 Bit™ 3.7.4.3 is a new release of the GemStone/S 64 Bit object server, fixing several critical bugs and with other minor changes and fixes.

These Release Notes include changes between the previous version of GemStone/S 64 Bit, v3.7.4.1, and 3.7.4.3; v3.7.4.2 was a limited distribution version. These Release Notes include all changes in 3.7.4.2 as well as 3.7.4.3. If you are upgrading from a version prior to 3.7.4.1, review the release notes for each intermediate release to see the full set of changes.

The Installation Guide has not been updated for this release. For installation, upgrade and conversion instructions, use the Installation Guide for version 3.7.2.

Supported Platforms

Platforms for Version 3.7.4.3

GemStone/S 64 Bit version 3.7.4.3 is supported on the following platforms:

- ▶ Red Hat-compatible Linux 7.9, 8.10, and 9.5, and Ubuntu 22.04 and 24.04, on x86_64. GemStone is tested on a mixture of Red Hat, CentOS, and Rocky; these are all considered fully certified platforms. Any reference to Red Hat applies to any Red Hat-compatible distribution.
- ▶ Ubuntu 22.04 on ARM. Linux on ARM is for development only, not for production.
- ▶ macOS 15.3.2 (Sequoia) and 11.7.10 (Big Sur), on x86 and Apple silicon (ARM). macOS distributions are for development only, not for production.

For more information and detailed requirements for each supported platforms, please refer to the *GemStone/S 64 Bit v3.7.2 Installation Guide* for that platform.

GemBuilder for Smalltalk (GBS) Versions

The following versions of GBS are supported with GemStone/S 64 Bit version 3.7.4.3:

GBS/VW version 8.8.1

VisualWorks 9.4.1 64-bit	VisualWorks 9.3.1 64-bit	VisualWorks 8.3.2 64-bit	VisualWorks 8.3.2 32-bit
<ul style="list-style-type: none"> ▶ Windows 10, Windows 11 ▶ RedHat ES 7.9, 8.10, and 9.5; Ubuntu 22.04 and 24.04 	<ul style="list-style-type: none"> ▶ Windows 10, Windows 11 ▶ RedHat ES 7.9, 8.10, and 9.5; Ubuntu 22.04 and 24.04 	<ul style="list-style-type: none"> ▶ Windows 10, Windows 11 ▶ RedHat ES 7.9, 8.10, and 9.5; Ubuntu 22.04 and 24.04 	<ul style="list-style-type: none"> ▶ Windows 11

GBS/VA version 5.4.7

VAST Platform 11.0.1	VAST Platform 10.0.2	VA Smalltalk 8.6.3
<ul style="list-style-type: none"> ▶ Windows Server 2016, Windows 10, and Windows 11 	<ul style="list-style-type: none"> ▶ Windows Server 2016, Windows 10, and Windows 11 	<ul style="list-style-type: none"> ▶ Windows Server 2016, Windows 10, and Windows 11

For more details on 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 v3.7.4.3 distribution includes VSD version 5.6.1. This is the same version of VSD that was included with the previous release, v3.7.4.1.

VSD 5.6.1 is included with the GemStone distribution, and can also be downloaded as a separate product from <https://gemtalksystems.com/vsd/>

Bug Fixes and Changes in this Release

Risk of corruption from login security updates concurrent with new symbol creation

If the SymbolGem is committing new symbols concurrently with a user login for an application userProfile that has certain password security features enabled, other Gems may commit references to oops that were provided by the SymbolGem for new symbols, but which the SymbolGem failed to commit. These oops may end up not existing, or being reused for unrelated objects. (#51494)

Premature out of memory

There are cases in which an out of memory (OOM) error can occur when configured memory should be able to grow. (#51486)

Upgrade fails if GsObjectSecurityPolicy's objectSecurityPolicy is nil

When upgrading from v3.6 or earlier, a GsObjectSecurityPolicy may have a nil objectSecurityPolicy. This caused upgrade to 3.7.4.x to fail. (#51463)

Reclaim did not see free space changes promptly

When there is a large amount of reclaim work and a commit record backlog, the ReclaimGem may still cause excessive repository growth. While the ReclaimGem considers low FreePages as of 3.7.4/3.7.4.1, this value was not updated quickly enough. The ReclaimGem also has tweaks in transaction state and handling checkpoints.

Added methods to report memory footprint

The following methods have been added to report Gem memory information:

```
System class >> _memoryFootprintMax
System class >> _memoryFootprintPercentUsed
System class >> _memoryFootprintUsed
```

Additional changes needed to support keepalive on TCP sockets

In v3.7.4/3.7.4.1, GemStone included support for configurable keepalive on all sockets. The changes were incomplete; further fixes have been made in v3.7.4.2. (#51304)

Symbol creation error messages now include more detail

When there is an internal error creating a new symbol, the error now includes more details.

GsPackagePolicy class >> _originVersion broken

This method returned 0 in 3.7.4.1. (#51460)

GsTestCase >> commit now exposes commit failures

Previously, GsTestCase >> commit invoked commitTransaction rather than commit. Use of commitTransaction may conceal commit failures.

