

GemStone/S 64 BitTM **Release Notes**

Version 3.7.2.2

February 2026

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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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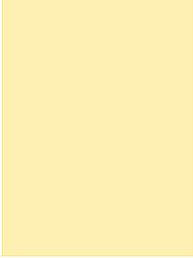
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Preface

About This Documentation

These release notes describe changes in the GemStone/S 64 Bit™ version 3.7.2.2 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 3.7.2.2, 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.

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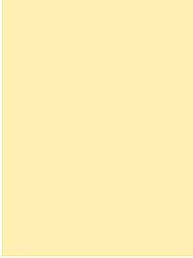


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Release Notes for 3.7.2.2

Overview

GemStone/S 64 Bit™ 3.7.2.2 is a new version of the GemStone/S 64 Bit object server, fixing a rare but potentially critical bug. Version 3.7.2.2 also includes a small number of other bug fixes and minor changes.

These Release Notes include changes between the previous version of GemStone/S 64 Bit, v3.7.2, and v3.7.2.2. v3.7.2.1 was a limited distribution release; all changes in that version are included in these Release Notes. If you are upgrading from a version prior to 3.7.2, 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 3.7.2.2

GemStone/S 64 Bit version 3.7.2.2 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.
- ▶ macOS 14.5 (Sonoma) 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 3.7.2.2:

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 11 ▶ RedHat ES 7.9, 8.10, and 9.5; Ubuntu 22.04 and 24.04 	<ul style="list-style-type: none"> ▶ 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 ▶ 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 and Windows 11 	<ul style="list-style-type: none"> ▶ Windows Server 2016 and Windows 11 	<ul style="list-style-type: none"> ▶ Windows Server 2016 and Windows 11

Windows 10 is expected to work, but since it is at end of service, it is no longer certified.

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 v3.7.2.2 distribution includes a prerelease version of VSD 5.6.5. The previous release, v3.7.2, contained VSD v5.6.1. v5.6.5 includes new features that allows limiting the view by the number of samples, and allow display of PIDs in legends. For changes in versions of VSD through 5.6.4, see <https://gemtalksystems.com/products/vsd/history/>.

Changes and Bug Fixes in this release

Risk of corruption after restart during large commit record backlog

If the stone is stopped or shuts down while there is a commit record backlog, on restart it disposes of the commit record backlog. If there is a low free space condition in the extent space while it is disposing of the commit record backlog that was found on restart, such that the Stone attempts to grow the extents, this can cause repository corruption. This is a risk mainly when there is a very large commit record backlog and when there are commits before the disposal process has completed. (#51768)

Gem runs hot in detached execution

When a session logs in using the recently added GCI login flag `GCI_PERFORM_DETACH`, the Gem may run hot and consume a large percent of CPU due to excessive socket polls. (#51287)

System class >> processKindForSlot: can return zero

There was a very small window during the period where a session is logging in, for which `System class >> processKindForSlot:` for the new session's slot (invoked by another session) may return 0. The method `System class >> cacheStatisticsDescriptionAt:` expects a non-zero result, and reported a primitive error. (#51324)

FileSystem changes

V3.7.2.2 includes sha `fa138d87` of the `FileSystemGs` project. This has had a number of code changes from the version included in v3.7.2 (sha `095f66ac`).

The following bug fixes are included. Class comments have also been expanded and improved.

Handling of Undefined environment variables

When an environment variable was undefined, this previously caused low level methods to return nil, which resulted in a message not understood. Now, this will signal an error, Error occurred (error 2710), Environment variable undefined in envName.

Incorrect result for SystemResolver >> gemLogDirectory

Linked sessions do not have gem logs; this method was incorrect in linked sessions. It incorrectly returned the root directory, and could result in MNUs under some conditions. This method now returns nil for linked sessions. (#51363)

Incorrect FileReference printOn: output

The printed form of a `FileReference` previously omitted the @ and quotes, and thus could not be used as-is to recreate the `FileReference`.

Changes in SystemResolver >> supportedOrigins

SystemResolver >> supportedOrigins returns different results in v3.7.2.2. The origins extent1, extent1Directory, and tranlog are no longer included. gemLogDirectory is now only included in supportedOrigins for RPC sessions.

Removed origin methods

FileLocator and SystemResolver classes previously provided methods to access the paths for the GemStone extent and tranlogs. Since FileSystem is implement for the Gem's file system (not the server's), this was not correct and not reliable. (#51359)

The following methods have been removed:

```
FileLocator class >> extent1
FileLocator class >> extent1Directory
FileLocator class >> extent:
FileLocator class >> tranlog
SystemResolver >> extent1
SystemResolver >> extent1Directory
SystemResolver >> tranlog
SystemResolver >> _extent:
```

RemoteServiceReplication Changes

V3.7.2.2 includes sha 5d4cb92f of the RemoteServiceReplication project. This has had a number of internal changes from the version included in v3.7.2 (sha 9a3398de).

The following bug fix is included:

RSR ignored TransactionBacklog

The Remote Service Replication (RSR) open-source project that is included with GemStone for use by other open-source projects. This framework only handled the GsFinalizeNotification asynchronous signal; the TransactionBacklog signal was ignored. Now, it will respond to a TransactionBackup by aborting. (#51433)

To control TransactionBacklog handling in an RSR environment, the application must run its own asynchronous event mechanism, which must handle GsFinalizeNotification as well as TransactionBackup. If GsFinalizeNotification is not handled it may result in deadlocks or hangs.