


GemStone/S 64 BitTM **Release Notes**

Version 3.5.4

October 2020



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PATENTS

GemStone software is or has been covered by U.S. Patent Number 6,256,637 "Transactional virtual machine architecture" (1998-2018), Patent Number 6,360,219 "Object queues with concurrent updating" (1998-2018), Patent Number 6,567,905 "Generational garbage collector with persistent object cache" (2001-2021), and Patent Number 6,681,226 "Selective pessimistic locking for a concurrently updateable database" (2001-2021).

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GemTalk Systems LLC
15220 NW Greenbrier Parkway
Suite 240
Beaverton, OR 97006

Preface

About This Documentation

These release notes describe changes in the GemStone/S 64 Bit™ version 3.5.4 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 3.5.4, or upgrading or converting from previous products or versions, see the Installation Guide for version 3.5.3.

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. GemStone users that do not have support contracts may post issues on the customer forum. To join this list, visit lists.gemtalksystems.com/mailman/listinfo/gemstone-smalltalk.

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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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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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GemStone/S 64 Bit

3.5.4 Release Notes

Overview

GemStone/S 64 Bit™ 3.5.4 is a new version of the GemStone/S 64 Bit object server, including several critical bug fixes. We recommend everyone using or planning to use GemStone/S 64 Bit upgrade to this new version.

These release notes describe changes between the previous version of GemStone/S 64 Bit, version 3.5.3, and version 3.5.4. If you are upgrading from a version prior to 3.5.3, 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 3.5.3.

Supported Platforms

Platforms for Version 3.5.4

GemStone/S 64 Bit version 3.5.4 is supported on the following platforms:

- ▶ Red Hat Enterprise Linux Server and CentOS Linux 6.9, 7.6, and 8.1; and Ubuntu 16.04, 18.04, and 20.04
GemStone performs testing on a mixture of Red Hat and CentOS servers; both are fully certified platforms. Any reference to Red Hat applies to both distributions.
- ▶ Solaris 10 and 11.4 on x86
- ▶ AIX 7.1 and 7.2
Note that AIX v6.1 is no longer a supported platform.
- ▶ OS X 10.14.6 (Mojave) with Darwin 18.7.0 kernel, and OSX 10.15.6 (Catalina) with Darwin 19.6.0 kernel, on x86
(Mac is supported for development only)

For more information and detailed requirements for each supported platform, please refer to the *GemStone/S 64 Bit Installation Guide* for v3.5.3 for that platforms.

GemBuilder for Smalltalk (GBS) Versions

GemStone/S 64 Bit version 3.5.4 requires GBS version 8.4 or later for VisualWorks Smalltalk, or version 5.4.5 or later for VA Smalltalk.

The following versions of GBS are supported with GemStone/S 64 Bit version 3.5.4:

GBS version 8.4

VisualWorks 8.3.2 32-bit and 64-bit	VisualWorks 7.10.1 32-bit	VisualWorks 7.10.1 64-bit
<ul style="list-style-type: none"> ▶ Windows 10 and Windows 7 ▶ RedHat ES/CentOS 8.1, 7.8, and 6.10; Ubuntu 20.04, 18.04, and 16.04 	<ul style="list-style-type: none"> ▶ Windows 10 and Windows 7 ▶ RedHat ES/CentOS 7.8 and 6.10; Ubuntu 16.04 	<ul style="list-style-type: none"> ▶ Windows 10 and Windows 7 ▶ RedHat ES/CentOS 7.8 and 6.10

VisualWorks 7.10.1 is no longer considered fully certified, since it is out of support with Cincom.

GBS version 5.4.5

VA Smalltalk 9.2.2	VA Smalltalk 9.1	VA Smalltalk 8.6.3
<ul style="list-style-type: none"> ▶ Windows 10 ▶ Windows 7, Professional or above 	<ul style="list-style-type: none"> ▶ Windows 10 ▶ Windows 7, Professional or above 	<ul style="list-style-type: none"> ▶ Windows 10 ▶ Windows 8.1, Professional or above ▶ Windows 7, Professional or above

Windows 7 reached end of life in January of 2020. While GemTalk continues to test on and support GemStone clients on Windows 7, it will no longer be considered fully certified.

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 v3.5.4 distribution includes VSD v5.5. This is the same version that was included with GemStone/S Bit v3.5.3; the updated build number reflects added statistics definitions.

VSD versions are not tied to GemStone server versions: both older and newer versions of VSD can be used to read statmonitor files generated by both older and newer versions of GemStone/S and GemStone/S 64 Bit.

Changes in this release

Updated library version

- ▶ The version of OpenSSL has been updated to 1.1.1h
- ▶ The version of OpenLdap has been updated to 2.4.53

Adds to kinds of IdentityBags in nested transactions may not tranlog correctly

If additions are made to an IdentityBag or a subclass of IdentityBag from within a nested transaction, the additions may not be logged correctly in the transaction logs.

If the database is later restored from backup and the transaction logs replayed, these added elements will be missing, and the variable that tracks the size of the collection will be incorrect. (#49092)

Added Gem Configuration parameter

For debugging issues with corrupted IdentityBags, the following run-time option has been added:

GemFailSafeNscEnumerate

Runtime-only configuration parameter for the Gem, which enables fail-safe enumeration logic in primitives for IdentityBag. This parameter should only be enabled after getting a corrupt object error (error 2261) during an enumeration.

To enable, execute:

```
System gemConfigurationAt: #GemFailSafeNscEnumerate put: true
```

Added topaz DUMPOBJ command

DUMPOBJ *anObjectSpecification*

This command does a low-level dump of an object, the node of a large object, or the node of an IdentityBag. For a byte format object, it displays the integer values of the bytes. This command cannot be abbreviated.

Abort of a nested transaction may not roll back all changes

Sending #objectSecurityPolicy: to an object changes the GsObjectSecurityPolicy associated with an object. These changes were not rolled back correctly when an abort was done in a nested transaction. (#49104)

Some changes to a kind of IdentityBag within a nested transaction were not rolled back correctly by an abort, and if the outer transaction committed, it was possible for the change that was meant to be aborted to become committed. (#49106)

pstack broken on Mac

The pstack script relies on the OS-level command gdb or lldb. With the added security required by Apple and implemented for GemStone in v3.5.3, lldb could not attach to a process. **pstack** has been rewritten for Darwin to use lldb, if installed, or use `backtrace()` otherwise. (#49023)

GsExternalSession disconnected by GsSocket class >> closeAll

In version 3.5.3, to support the added method `GsExternalSession>>waitForReadReady`, an instance of `GsExternalSession` creates a `GsSocket` representation of its underlying socket to the gem on login. If your application also performs `GsSocket class >> closeAll`, this method closes the `GsExternalSession`'s socket, which will disconnect the `GsExternalSession`. (#49091)

GsSocket closeAll no longer closes GsSockets created by fromFileHandle:

`GsSocket class >> closeAll` previously closed all `GsSockets`. Now, `GsSockets` created by `GsSocket >> fromFileHandle:` are not closed by `closeAll`.

List Instances issues

fastListInstances executed as if it was slow, and vice versa

Due to a typo, `fastListInstances` executed with the number of threads of a regular `listInstances`, and the regular `listInstances` executed with the number of threads of a `fastListInstances`. (#49077)

Result of listInstances on objects that are equal/not identical may be incorrect

An internal comparison when building the results of a `listInstances:` used `=` rather than `==` to perform the comparison. If the input argument array included multiple objects, and two (or more) of these object were equal but not identical to each other, references lists were missing or incorrect in the results. (#49101)

Some cases of invalid GsObjectSecurityPolicy layout are automatically repaired

The organization of `Segments/GsObjectSecurityPolicies` had significant changes between 32-bit GemStone/S, GS64 1.x, and GS64 2.x. The upgrade process updated the organization, but specific originating layouts and upgrade sequences have occasionally caused issues.

Cases such as missing entries, either due to upgrade deficiencies or incorrect repairs, are now automatically corrected during upgrade. (#49089)

Class comment that was placeholder may become the actual Class comment

When a `Class` does not have a class comment, the method `#comment` returns text with "No class-specific documentation", and providing the class hierarchy with instance variables. If a new version of this class is created (without explicitly providing a comment/description), this placeholder comment becomes the defined class comment, and remains the same even if the hierarchy/instance variables change. (#49082)

logreceiver may need restart after some logsender connection failures

When the logsender shuts down uncleanly and is restarted, the logreceiver reconnects automatically. However, it may not correctly reinitialize its data queue and attempt to write data received just prior to the disconnect that was re-transmitted from the logsender. (#49100).

statmonitor -X, -S, -P, -J, -G should not collect NetLDI stats

The statmonitor options to limit the set of processes to monitor did not exclude the recently-added NetLDI process monitoring. (#48982)

Upgrade errors with systems that explicitly loaded STON/Cypress classes into Globals

STON provides a Smalltalk object serialization format that is used by Rowan and other open-source projects, and Cypress provides file access and handling services. In v3.5.x, these classes are internal to the CodeLibrarianUser. If these classes are manually installed into Globals, the upgrade process will fail with an authorization error. (#49080)