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# **GemStone/S 64 Bit<sup>TM</sup>**

## **Release Notes**

**Version 3.6.8**

January 2024



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## PATENTS

GemStone software 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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# Preface

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## About This Documentation

These release notes describe changes in the GemStone/S 64 Bit™ version 3.6.8 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 3.6.8, or upgrading or converting from previous products or versions, see the Installation Guide for version 3.6.7.

## 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](http://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](http://techsupport.gemtalksystems.com)

**Email:** [techsupport@gemtalksystems.com](mailto: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 3.6.8

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## Overview

GemStone/S 64 Bit™ 3.6.8 is a new version of the GemStone/S 64 Bit object server. Version 3.6.8 fixes a critical bug in v3.6.7, and includes other changes and bug fixes. We recommend all customers that are not currently able to upgrade to v3.7.x, upgrade to this new version.

These Release Notes include changes between the previous version of GemStone/S 64 Bit, v3.6.7, and v3.6.8. If you are upgrading from a version prior to 3.6.7, 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 3.6.7.

## Supported Platforms

### Platforms for Version 3.6.8

GemStone/S 64 Bit version 3.6.8 is supported on the following platforms:

- ▶ Red Hat Enterprise Linux Server, CentOS Linux, and Rocky Linux 7.9, 8.9, and 9.3; Ubuntu 20.04 and 22.04; all on x86.  
Ubuntu 20.04 on ARM (Ubuntu on ARM is supported for development only)  
GemStone performs testing on a mixture of Red Hat, CentOS, and Rocky Linux; these are all fully certified platforms. Any reference to Red Hat applies to all these distributions.
- ▶ AIX 7.1 and 7.2
- ▶ macOS 13.1 (Ventura) with Darwin 22.2.0 kernel, and macOS 12.6 (Monterey) with Darwin 21.6.0 kernel on x86; and macOS 11.6 (Big Sur) with Darwin 20.6.0 kernel on Apple silicon.  
(Mac is supported for development only)

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

## GemBuilder for Smalltalk (GBS) Versions

The following versions of GBS are supported with GemStone/S 64 Bit version 3.6.8:

### GBS/VW version 8.7

<b>VisualWorks 9.1.1 32-bit and 64-bit</b>
<ul style="list-style-type: none"> <li>▶ Windows 10</li> <li>▶ RedHat ES 7.9, 8.9, and 9.3; Ubuntu 20.04 and 22.04</li> </ul>

### GBS/VW version 8.6

<b>VisualWorks 9.1.1 32-bit and 64-bit</b>
<ul style="list-style-type: none"> <li>▶ Windows 10</li> <li>▶ RedHat ES 7.9, 8.9, and 9.3; Ubuntu 20.04</li> </ul>

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 v3.6.8 distribution includes VSD version 5.6.1. This is the same version that was included with the previous GemStone/S 64 Bit version, v3.6.7. VSD 5.6.1 includes a fix for a rare but significant bug.

VSD v5.6.1 is included with the GemStone distribution, and can also be downloaded as a separate product. For details or to download, go to <https://gemtalksystems.com/vsd/>.

## Rowan

The GemStone/S v3.6.8 distribution includes Rowan 2.3.2.



## Changes in this version

### Added Topaz command SET AUTOSTACKSAVE

`set autostacksave` requires one argument, OFF or ON.

If on, STACK SAVE is executed automatically for each error returned to topaz from an execution (`doit`, `send`, or `run`).

The default is ON if the topaz stdin is a terminal, otherwise default is OFF.

### allInstances moved to superclass

The method `allInstances` was previously on `Class` and is now on `Behavior`.

### Change in output for STN\_TRAN\_LOG\_DEBUG\_LEVEL

Previously, `LOG_SCAVENGABLE_PAGES` output was only included for `STN_TRAN_LOG_DEBUG_LEVEL` 3 or higher.

Now, `LOG_SCAVENGABLE_PAGES` is included for `STN_TRAN_LOG_DEBUG_LEVEL` 1 or higher.

## Bugs Fixed

### Risk of garbage collection of live objects

In code changes introduced in v3.6.7, there was a corner case in which an iteration in creating the transitive closure of live objects could terminate before it was complete, such that some objects could be omitted. These objects would be subject to garbage collection. This is expected to be rare and related to configurations with multiple extents with many threads. (#50847)

Due to this bug, version 3.6.7 should not be used, and is not available for download.

### startstone recovery may fail with tranlogs on raw partitions

After an unclean Stone shutdown, such as a `kill -9`, on restart the Stone performs recovery by reading the current tranlog that was being written before the shutdown. When tranlogs are configured as a list of raw partitions, there is a codepath in which the stone may fail to find the tranlogs needed for recovery; in this case, the stone will not start unless `startstone -N` is used. (#50843)

### Upgrade created instances of ObsoleteMetaclass

the upgrade process created instances of `ObsoleteMetaclass`. This did not affect operation, since they were automigrated when faulted into memory. (#50810)

### Gem failed to respond to SIGTERM on 1-core VM

On a 1-core virtual machine, a gem may fail to honor a `SIGTERM`. (#50844)