

---

*GemStone*®

# **GemStone/S 64 Bit™ Release Notes**

**Version 3.2.15**

May 2016



## **INTELLECTUAL PROPERTY OWNERSHIP**

This documentation is furnished for informational use only and is subject to change without notice. GemTalk Systems LLC assumes no responsibility or liability for any errors or inaccuracies that may appear in this documentation.

This documentation, or any part of it, may not be reproduced, displayed, photocopied, transmitted, or otherwise copied in any form or by any means now known or later developed, such as electronic, optical, or mechanical means, without express written authorization from GemTalk Systems.

Warning: This computer program and its documentation are protected by copyright law and international treaties. Any unauthorized copying or distribution of this program, its documentation, or any portion of it, may result in severe civil and criminal penalties, and will be prosecuted under the maximum extent possible under the law.

The software installed in accordance with this documentation is copyrighted and licensed by GemTalk Systems under separate license agreement. This software may only be used pursuant to the terms and conditions of such license agreement. Any other use may be a violation of law.

Use, duplication, or disclosure by the Government is subject to restrictions set forth in the Commercial Software - Restricted Rights clause at 52.227-19 of the Federal Acquisitions Regulations (48 CFR 52.227-19) except that the government agency shall not have the right to disclose this software to support service contractors or their subcontractors without the prior written consent of GemTalk Systems.

This software is provided by GemTalk Systems LLC and contributors "as is" and any expressed or implied warranties, including, but not limited to, the implied warranties of merchantability and fitness for a particular purpose are disclaimed. In no event shall GemTalk Systems LLC or any contributors be liable for any direct, indirect, incidental, special, exemplary, or consequential damages (including, but not limited to, procurement of substitute goods or services; loss of use, data, or profits; or business interruption) however caused and on any theory of liability, whether in contract, strict liability, or tort (including negligence or otherwise) arising in any way out of the use of this software, even if advised of the possibility of such damage.

## **COPYRIGHTS**

This software product, its documentation, and its user interface © 1986-2016 GemTalk Systems LLC. All rights reserved by GemTalk Systems.

## **PATENTS**

GemStone software is 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". GemStone software may also be covered by one or more pending United States patent applications.

## **TRADEMARKS**

**GemTalk**, **GemStone**, **GemBuilder**, **GemConnect**, and the GemStone and GemTalk logos are trademarks or registered trademarks of GemTalk Systems LLC, or of VMware, Inc., previously of GemStone Systems, Inc., in the United States and other countries.

**VMware** is a registered trademark or trademark of VMware, Inc. in the United States and/or other jurisdictions.

**UNIX** is a registered trademark of The Open Group in the United States and other countries.

**Sun**, **Sun Microsystems**, and **Solaris** are trademarks or registered trademarks of Oracle and/or its affiliates. **SPARC** is a registered trademark of SPARC International, Inc.

**Intel**, **Pentium**, and **Itanium** are registered trademarks of Intel Corporation in the United States and other countries.

**Microsoft**, **MS**, **Windows**, **Windows 7**, **Windows 2008**, and **Windows 8** are registered trademarks of Microsoft Corporation in the United States and other countries.

**Linux** is a registered trademark of Linus Torvalds and others.

**Red Hat** and all Red Hat-based trademarks and logos are trademarks or registered trademarks of Red Hat, Inc. in the United States and other countries.

**Ubuntu** is a registered trademark of Canonical Ltd., Inc., in the U.S. and other countries.

**SUSE** is a registered trademark of Novell, Inc. in the United States and other countries.

**AIX**, **POWER5**, **POWER6**, and **POWER7** are trademarks or registered trademarks of International Business Machines Corporation.

**Apple**, **Mac**, **Mac OS**, **Macintosh**, and **Snow Leopard** are trademarks of Apple Inc., in the United States and other countries.

Other company or product names mentioned herein may be trademarks or registered trademarks of their respective owners. Trademark specifications are subject to change without notice. GemTalk Systems cannot attest to the accuracy of all trademark information. Use of a term in this documentation should not be regarded as affecting the validity of any trademark or service mark.

**GemTalk Systems**  
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 3.2.15 release. Read these release notes carefully before you begin installation, conversion testing, or development with this release.

No separate Installation Guide is provided with this release. For instructions on installing GemStone/S 64 Bit version 3.2.15, or upgrading or converting from previous products or versions, see the Installation Guide for version 3.2.6.

These documents are available on the GemTalk website, as described below.

## 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.

- ▶ **TechTips**, providing information and instructions that are not in the documentation.
- ▶ **Compatibility matrices**, listing supported platforms for GemTalk 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. Technical Support is available to customers with current support contracts.

Requests for technical assistance may be submitted online, 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:** [support.gemtalksystems.com](http://support.gemtalksystems.com)

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

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

When submitting a request, please include the following information:

- ▶ Your name and company name.
- ▶ The versions of GemStone/S 64 Bit and of all related GemTalk 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 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.

---



# Table of Contents

---

## *Chapter 1. GemStone/S 64 Bit 3.2.15 Release Notes*

|   |    |
|---|----|
| Overview . . . . .  | 7  |
| Supported Platforms . . . . .   | 7  |
| Platforms for Version 3.2.15 . . . . .  | 7  |
| GBS Versions . . . . .  | 8  |
| VSD Version. . . . .  | 8  |
| Changes and Bugs Fixed . . . . .  | 9  |
| Updated SSL libraries . . . . .   | 9  |
| Override limit on VM memory use. . . . .                                      | 9  |
| Failures in installations with symlinks to remote product directory . . . . . | 9  |
| startstone failed if /proc not readable by stone. . . . .                     | 9  |
| Repeated replay of transaction log can cause corruption . . . . .             | 9  |
| NetLDI may hang on EAI_AGAIN from reverse lookup . . . . .                    | 9  |
| Added NetLDI option . . . . .   | 9  |
| Remote shared page cache monitor can get stuck spin lock. . . . .             | 9  |
| Page Manager crash on removing pages from remote cache . . . . .              | 10 |
| GsSecureSocket>>readWillNotBlockWithin: wrong after partial read. . . . .     | 10 |
| Invalid class instance variables does not prevent class creation . . . . .    | 10 |



# GemStone/S 64 Bit

## 3.2.15 Release Notes

---

### Overview

GemStone/S 64 Bit 3.2.15 is a new version of the GemStone/S 64 Bit object server. This release include fixes for a number of rare but serious bugs.

These release notes provide changes between the previous version of GemStone/S 64 Bit, version 3.2.14, and version 3.2.15. If you are upgrading from a version prior to 3.2.14, review the release notes for each intermediate release to see the full set of changes.

For installation, upgrade and conversion instructions, use the *Installation Guide* for version 3.2.6. Note that on upgrade from 3.1.x, application code recompilation is now recommended.

### Supported Platforms

#### Platforms for Version 3.2.15

GemStone/S 64 Bit version 3.2.15 is supported on the following platforms:

- ▶ Solaris 10 and 11 on SPARC
- ▶ Solaris 10 on x86
- ▶ AIX 6.1 and AIX 7.1
- ▶ Red Hat Linux ES 6.4 and 6.5, Ubuntu 12.04 and 14.04, and SUSE Linux Enterprise 12, on x86
- ▶ Mac OSX 10.6.8 (Snow Leopard), with Darwin 10.8.0 kernel, on x86

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

## GBS Versions

The following versions of GBS are supported with GemStone/S 64 Bit version 3.2.15. You must use GBS version 7.6.1 or later for VisualWorks, or 5.4.2 or later for VA Smalltalk with GemStone/S 64 Bit v3.2.15.

### GBS version 8.1

| VisualWorks<br>7.10.1<br>32-bit  | VisualWorks<br>7.10.1<br>64-bit  |
|--|--|
| <ul style="list-style-type: none"> <li>▶ Windows 8, Windows 2008 R2 and Windows 7</li> <li>▶ Solaris 10 on SPARC</li> <li>▶ Ubuntu 12.04 and 14.04, RedHat Linux ES 6.4 and 6.5, and SUSE Linux ES 12</li> </ul> | <ul style="list-style-type: none"> <li>▶ Windows 8, Windows 2008 R2 and Windows 7</li> <li>▶ Solaris 10 on SPARC</li> <li>▶ Ubuntu 12.04 and 14.04, RedHat Linux ES 6.4 and 6.5, and SUSE Linux ES 12</li> </ul> |

### GBS version 7.6.1

| VisualWorks<br>7.10.1<br>32-bit  | VisualWorks<br>7.10.1<br>64-bit  | VisualWorks<br>7.9.1<br>32-bit  |
|--|--|---|
| <ul style="list-style-type: none"> <li>▶ Windows 8, Windows 2008 R2 and Windows 7</li> <li>▶ Solaris 10 on SPARC</li> <li>▶ Ubuntu 12.04, RedHat Linux ES 6.4 and 6.5, and SUSE Linux ES 12</li> </ul> | <ul style="list-style-type: none"> <li>▶ Windows 8, Windows 2008 R2 and Windows 7</li> <li>▶ Solaris 10 on SPARC</li> <li>▶ Ubuntu 12.04, RedHat Linux ES 6.4 and 6.5, and SUSE Linux ES 12</li> </ul> | <ul style="list-style-type: none"> <li>▶ Windows 2008 R2 and Windows 7</li> <li>▶ Solaris 10 on SPARC</li> <li>▶ Linux ES 6.4 and SUSE Linux ES 12</li> </ul> |

### GBS version 5.4.2

| VA Smalltalk<br>8.6   | VA Smalltalk<br>8.5.2  |
|---|--|
| <ul style="list-style-type: none"> <li>▶ Windows 8, Professional or above</li> <li>▶ Windows 2008 R2</li> <li>▶ Windows 7, Professional or above</li> </ul> | <ul style="list-style-type: none"> <li>▶ Windows 2008 R2</li> <li>▶ Windows 7</li> </ul> |

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 v3.2.15 distribution includes VSD version 5.1.3. This is the same version included with the previous version of GemStone/S 64 Bit.



## Changes and Bugs Fixed

### Updated SSL libraries

The version of OpenSSL used by GemStone/S 64 Bit v3.2.15 has been updated to 1.0.2h.

### Override limit on VM memory use

GemStone automatically sets the limits on memory use using `setrlimit()`.

Now, this can be disabled using the environment variable `GEMSTONE_NO_SETRLIMIT`, for customers who want to configure memory limits manually.

### Failures in installations with symlinks to remote product directory

*Linux only, in 3.2.13, 3.2.14 only*

Under the `$GEMSTONE` product directory, if a directory such as `sys` was a symlink to another directory location, it caused issues with `gslis -v`, and `startstone` failures.

This issue was introduced by the fix for bug 46066, which adding checking to ensure that the pid of a running process matched the expected executable. (#46196)

### startstone failed if /proc not readable by stone

*Linux only, in 3.2.13, 3.2.14 only*

If `/proc` ownership is by root, and permissions are `r-x-----`, `startstone` failed due to stale lock file. (#46193)

### Repeated replay of transaction log can cause corruption

If an incomplete transaction log was replayed, and then later the same transaction log was replayed after it had completed (and therefore contained more records), it was possible for some records in the later part of the transaction log to not be replayed. This resulted in the restored system being corrupted. (#46148)

### NetLDI may hang on EAI\_AGAIN from reverse lookup

If a reverse IP lookup returned an `EAI_AGAIN` ("The name could not be resolved at this time. Try again later."), the NetLDI retried immediately until a valid response was returned. On systems that persistently return this error, it resulted in the NetLDI hanging. (#39354)

### Added NetLDI option

The following option has been added to `startnetldi`:

- N Use numeric IP addresses for printing peer info in logs, do not do reverse DNS lookups to get hostnames of clients.

### Remote shared page cache monitor can get stuck spin lock

There was a code path in which a remote shared page cache could have deadlocked on a stuck spin lock. (#46175)

## Page Manager crash on removing pages from remote cache

It was possible for the Page Manager thread in the stone to detect a fatal error and crash, when there was a mismatch in the number of pages that it had requested to remove from remote shared page caches. (#46171).

## GsSecureSocket>>readWillNotBlockWithin: wrong after partial read

If a read performed on a GsSecureSocket did not read all available characters, a subsequent call to GsSecureSocket>>readWillNotBlockWithin: incorrectly returned false. (#46174)

## Invalid class instance variables does not prevent class creation

If the `classInstanceVariable:` argument to a class creation method is invalid, an error is returned. Due to the way class instance variables are added after class creation, the class was still created, but was not made invariant. (#46166)

Several private subclass creation methods have been modified to include a `classInstanceVariable:` argument, and the private methods without this argument have been removed.