
GemStone®

GemStone/S 64 Bit™
Release Notes

Version 3.1.0.4

June 2013



GEMTALK™
SYSTEMS

GEMSTONE™ **S** **64**



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 © 1986-2013 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

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

GemStone, **GemBuilder**, **GemConnect**, and the GemStone 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.

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.

HP, **HP Integrity**, and **HP-UX** are registered trademarks of Hewlett Packard Company.

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

Microsoft, **MS**, **Windows**, **Windows XP**, **Windows 2003**, **Windows 7**, **Windows Vista** and **Windows 2008** 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.

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

Overview

GemStone/S 64 Bit 3.1.0.4 is a new version of the GemStone/S 64 Bit object server. This release fixes a critical bug that affects systems progressively upgraded from pre-2.x versions, which missed one of the upgrade steps in the 2.x conversion.

All GemStone/S 64 Bit 3.x applications that originated in 32-bit GemStone/S or GemStone/S 64 Bit v1.x, should verify if they are subject to this bug, and if so, perform appropriate analysis and repair. GemStone/S 64 Bit applications that are being upgraded should upgrade to this version rather than prior 3.x versions, to avoid risk of encountering this serious problem.

These release notes provide changes between the previous version of GemStone/S 64 Bit, version 3.1.0.3, and version 3.1.0.4. If you are upgrading from a version prior to 3.1.0.3, review the release notes for each intermediate release to see the full set of changes.

No separate Installation Guide is provided with this release. For installation instructions, use the Installation Guide for version 3.1.

Supported Platforms and GBS Versions

Platforms

GemStone/S 64 Bit version 3.1.0.4 is supported on the following platforms:

- ▶ Solaris 10 and 11 on SPARC
- ▶ Solaris 10 on x86
- ▶ AIX 6.1, TL1, SP1, and AIX 7.1
- ▶ SuSE Linux ES 10 SP1 and ES11 on x86;
Red Hat Linux ES 5.5 and 6.1 on x86
- ▶ Mac OSX 10.6.4 (Snow Leopard), with Darwin 10.4.0 kernel, on x86

For more information and detailed requirements for each supported platforms, please refer to the GemStone/S 64 Bit v3.1 Installation Guide for that platform.

Bugs Fixed

Risk of corruption in progressively upgraded repositories that did not execute 2.x postconv

For large collections (pointer collections larger than 2024, or byte collections larger than 8096) that originated in 32-bit GemStone/S or GemStone/S 1.x, if the postconv step was not run as part of the conversion to 2.x, the large collection will exhibit problems in 3.x, and if modified will become corrupted.

The 2.x postconv step updated the large object internal structures to a new format. In 2.4.x, large collections with the older or newer large object format both worked correctly. In 3.x versions prior to 3.1.0.4, the code does not correctly handle large collections that have the older large object internal format

The problem can be detected in 3.x by running objectAudit. Collections that have encountered this bug return a large negative size, which is reported by objectAudit. Some operations that access or iterate the collection will work correctly, but others return errors.

For a collection that has the incorrect state associated with this bug, if the problem is not detected by objectAudit or other application error and fixed, and the collection is modified, the incorrect state is repaired, which results in corruption that is no longer detected by object audit.

All 3.x applications that originated in 32-bit GemStone/S or GemStone/S 1.x should verify that the previous upgrade to 2.x did correctly execute the postconv step. These applications should also run objectAudit. If **any** collection size errors are reported by the audit, please contact GemTalk Technical Support for further analysis and instructions for the repair process.

We recommend all applications upgrading to 3.x should upgrade to 3.1.0.4, to avoid any risk of this bug occurring. Applications upgrading from 2.x directly to 3.1.0.4 are not subject to this bug. (#43141)

Hot standby fix

When a logreceiver lost the connection to the logsender, and reconnected, a buffer was not correctly cleared before reuse. (#43111)