GemStone®

GemStone/S 64 Bit™ Release Notes

Version 3.2.11

November 2015

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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.

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Preface

About This Documentation

These release notes describe changes in the GemStone/S 64 Bit™ version 3.2.11 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 3.2.11, 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, 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.

- **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.

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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

Email: 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.

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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.

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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 3.2.11 Release Notes

Overview . . . 7
Supported Platforms . . . 7
- Platforms for Version 3.2.11 . . . 7
- GBS Versions . . . 8
- VSD Version. . . . 8

Changes in this Release . . . 9
- Hotstandby logreceiver now has configurable timeout . . . 9
- New options for controlling location of process log files . . . 9
- Gem and Stone NRS control over log files for remote logins . . . 9
- Configuration parameter specification for mid-level caches . . . 9

Bugs Fixed . . . 10
- Gem login failure with invalid setting for SHR_PAGE_CACHE_PERMISSIONS 10
- Risk of SEGV during fullBackupCompressedTo: . . . 11
- HugePages* stats incorrectly reported on Linux . . . 11
- Incorrect number in UnauthorizedObjectStub error . . . 11
- System readHiddenSet:fromSortedFile: broken. . . . 11
- 2.4.x-3.2x conversion with GemConnect installed encountered errors . . . 11
- Delay may wait forever on fast CPU . . . 11
- topaz -n option removed . . . 11

Chapter

1 GemStone/S 64 Bit 3.2.11 Release Notes

Overview

GemStone/S 64 Bit 3.2.11 is a new version of the GemStone/S 64 Bit object server. This release fixes a number of bugs, and adds a new configuration parameter; we recommend everyone using or planning to use GemStone/S 64 Bit v3.2.x upgrade to this new version.

These release notes provide changes between the previous version of GemStone/S 64 Bit, version 3.2.10, and version 3.2.11. If you are upgrading from a version prior to 3.2.10, 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.

Supported Platforms

Platforms for Version 3.2.11

GemStone/S 64 Bit version 3.2.11 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
- Red Hat Linux ES 6.4 and 6.5, Ubuntu 12.04, 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 3.2.11. 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 v3.2.11.

GBS version 7.6.1

VisualWorks 7.10.1 32-bit	VisualWorks 7.10.1 64-bit	VisualWorks 7.9.1 32-bit
▸ Windows 8, Windows 2008 R2 and Windows 7 ▸ Solaris 10 on SPARC ▸ Ubuntu 12.04, RedHat Linux ES 6.4 and 6.5, and SUSE Linux ES 12	▸ Windows 8, Windows 2008 R2 and Windows 7 ▸ Solaris 10 on SPARC ▸ Ubuntu 12.04 and RedHat Linux ES 6.4 and 6.5, and SUSE Linux ES 12	▸ Windows 2008 R2 and Windows 7 ▸ Solaris 10 on SPARC

GBS version 5.4.2

VA Smalltalk 8.6	VA Smalltalk 8.5.2
▸ Windows 8, Professional or above ▸ Windows 2008 R2 ▸ Windows 7, Professional or above	▸ Windows 2008 R2 ▸ Windows 7

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 v3.2.11 distribution includes VSD version 5.0.1, which is the same version as provided with the previous version of GemStone/S 64 Bit, v3.2.10.

Changes in this Release

Hotstandby logreceiver now has configurable timeout

On networks with high latency, it was possible for the internal timeout in the logreceiver to be exceeded, preventing the logreceiver from receiving any tranlog records.

Now, the timeout on the logreceiver is configurable using the new -t option.

New options for controlling location of process log files

It is now possible for the NetLDI to be configured with a particular directory for child log files, and specify this directory within the Gem NRS #log directive. This allows the name of the Gem log file to be controlled by the Gem, and the directory location to be controlled by the NetLDI.

There are two parts to this change

- The startnetldi utility now accepts a new -D argument, which should be an existing directory to which the NetLDI's child processes will have write permission.
- The Gem's NRS may use the new %D pattern, within the #log: or #dir: directives. When the %D (and any other patterns) are expanded by the NetLDI to the directory name, this defines the full log and path for the Gem's log file.

  It is not critical to include a path divider after a %D; the code ensure that the expansion of %D ends with a '/' character.

  If no -D argument was provided in the NetLDI, and %D is specified in Gem NRS, the %D is treated like an empty string, and a warning is printed to the NetLDI log file.

For example, the following examples start a NetLDI with a log directory of $GEMSTONE/logs/:

```
startnetldi -g -a gsadmin -D $GEMSTONE/logs gs64ldi
```

and configure a topaz maintenance script to write its log file to this directory:

```
topaz> set gemnetid !#log:%D/MFC-%P.log!gemnetobject
```

Note that %P in the NRS stands for the PID; other such variables are documented in the *System Administration Guide*, Appendix C.

Gem and Stone NRS control over log files for remote logins

Login parameters for the Stone name and the Gem service may each specify an NRS that includes the #log: directive. Now, these are internally retained separately, so the Stone's NRS controls the log files for processes started on the Stone's node, and the Gem's NRS controls the log files for log files for processes on the Gem's node.

Configuration parameter specification for mid-level caches

A method had been added to allow you to pass in the precise intended configuration parameters to start up a mid-level cache.

`System class >> midLevelCacheConnect:` *hostName* `options:` *optionsArray*

This is similar to midLevelCacheConnect:cacheSizeKB:maxSessions:, but rather than specifying just two of the mid-level cache parameters, the full set of configuration

parameters can be specified. *optionsArray* is an Array containing pairs specifying configuration parameters and values.

For example, the following are equivalent operations:

```
System midLevelCacheConnect: 'MyHost' cacheSizeKB: 1000000
      maxSessions: 50.

System midLevelCacheConnect: 'MyHost' options:
      {'SHR_PAGE_CACHE_SIZE_KB' . '1GB' .
      'SHR_PAGE_CACHE_NUM_PROCS' 50 }.
```

Options for the command line include:

First element of tuples within array (case insensitive)	Second element of tuples within array
'SHR_PAGE_CACHE_SIZE_KB'	an Integer representing KB, or a String with a units suffix like '3GB' or '3000MB'
'SHR_PAGE_CACHE_NUM_PROCS'	an Integer
'SHR_TARGET_FREE_FRAME_COUNT'	an Integer
'SHR_NUM_FREE_FRAME_SERVERS'	an Integer
'SHR_PAGE_CACHE_NUM_SHARED_COUNTERS'	an Integer
'SHR_PAGE_CACHE_LOCKED'	0, 1 or a Boolean
'GEM_PGSVR_COMPRESS_PAGE_TRANSFERS'	0, 1 or a Boolean
'SHR_PAGE_CACHE_LARGE_MEMORY_PAGE_POLICY'	0, 1 or 2
'SHR_PAGE_CACHE_PERMISSIONS'	an Integer

Configuration parameters that are not specified on the command line are taken from the configuration file of the Gem that initiated the mid-level cache.

Bugs Fixed

The following bugs have been fixed in v3.2.11:

Gem login failure with invalid setting for SHR_PAGE_CACHE_PERMISSIONS

Introduced by changes in 3.2.10

When the configuration file used by the Gem has an invalid value for the configuration file setting SHR_PAGE_CACHE_PERMISSIONS, it causes a fatal error and prevents the Gem from running. (#45745)

This issues was exposed by the changes to add the new CONFIG_WARNINGS_FATAL configuration parameter, but the error occurs irrespective of the CONFIG_WARNINGS_FATAL setting.

Risk of SEGV during fullBackupCompressedTo:

When a multithreaded backup was writing a compressed full backup to multiple files, and encounters an error, the cleanup code performed a thread-unsafe operation, which could result in an SEGV. (#45767)

HugePages* stats incorrectly reported on Linux

The HugePages cache statistics on Linux reported values in pages, not in the number of KB. Now, the values are reported in KB as documented. (#45793).

Affected statistics are HugePagesTotalKB, HugePagesFreeKB, HugePagesRsvdKB and HugePagesSurpKB.

Incorrect number in UnauthorizedObjectStub error

Attempting to read an object whose security policy does not allow reading usually produces a SecurityError with number 2115. However, sending a message to an UnauthorizedObjectStub yielded a SecurityError with number 2374. GBS relies on error numbers to determine the GBS error class, and returned the incorrect class. (#45760)

System readHiddenSet:fromSortedFile: broken

Attempting to execute the method System class >> readHiddenSet:fromSortedFile: resulted in an error that the bitmap file was corrupt. (#45801)

2.4.x-3.2x conversion with GemConnect installed encountered errors

When performing conversion of a repository containing GemConnect from 2.4.x to 3.2.x, the upgradeImage step could error. This was the result of attempting to install kernel class documentation when the relevant methods had not yet been recompiled. (#45751)

Delay may wait forever on fast CPU

A test case showed that a Delay would sometimes never expire when running on a fast (#45764)

topaz -n option removed

The -n option to topaz was not functional and has been removed. (#45685)