GemStone®

GemBuilder® for Smalltalk Release Notes

Version 5.4.3

February 2016

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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 the changes in the GemBuilder® for Smalltalk/VA version 5.4.3 release.

For information on installing or upgrading to this version of GemBuilder for Smalltalk, please refer to the *GemBuilder for Smalltalk Installation Guide* for version 5.4.3.

This documentation is also available on the GemStone Technical Support website.

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.

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: techsupport.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 version of GemBuilder for Smalltalk, client Smalltalk product and version, and versions of all related GemTalk products and other 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.

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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.

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Chapter

1 Release Notes for GemBuilder for Smalltalk 5.4.3

GemBuilder for Smalltalk (GBS) version 5.4.3 is a new version of the GemBuilder for Smalltalk product, adding support for GemStone/S 64 Bit version 3.3 and VA Smalltalk 8.6.2, as well as fixing a number of bugs. Please take time to read through these release notes before installing or upgrading, to acquaint yourself with the changes.

These release notes provide changes between the previous version of GBS, version 5.4.2, and version 5.4.3. If you are upgrading from a version prior to 5.4.2, please also review the release notes for each intermediate release to see the full set of changes.

This release does not support VisualWorks; VisualWorks is supported by separate set of releases of the GBS product. GBS 5.4.3 cannot be used with GemStone/S 64 Bit 2.x, nor can it be used with 32-bit GemStone/S. Support for these servers is provided in separate releases.

To install GemBuilder for Smalltalk 5.4.3, follow the instructions in the *GemBuilder for Smalltalk Installation Guide* for version 5.4.3.

Supported Platforms and Versions

The following tables describe the client Smalltalk versions and platforms supported by GBS 5.4.3, and the GemStone server product shared library versions that can be used with each.

For more details, including the specific required client libraries for each server product and versions, refer to the *GemBuilder for Smalltalk Installation Guide* for version 5.4.3.

Table 1 Supported GemStone/S 64 Bit Server versions - RPC logins only

	VA Smalltalk 8.6.2	VA Smalltalk 8.5.2
Windows 8	3.3, 3.2.12	
Windows Server 2008 R2	3.3, 3.2.12	3.3, 3.2.12
Windows 7	3.3, 3.2.12	3.3, 3.2.12

Changes and Bugs Fixed

Support for GemStone/S 64 Bit 3.3

This release adds support for GemStone/S 64 Bit v3.3.

This includes support for replicating SmallFraction, a new simple type in version 3.3.

Support for VA Smalltalk v8.6.x

Version 5.4.3 adds support for VA Smalltalk v8.6.2. There are minor GBS code changes related to this.

In VA Smalltalk v8.6.1 and 8.6.2, the Scintilla Editor in VA Smalltalk is more closely integrated with GBS debugger. While most issues have been addressed, there may still be cases in which behavior is not entirely correct when debugging in server code.

If GBS debugging is enabled, the StsDebugger will run without using the Scintilla editor. DbgDebugger and the GBS debugger, GbxDebugger, never use Scintilla. You can disable the Scintilla Editor, using the Transcript menu item **Tools/VA Assist Pro/Settings/Use Scintilla Editor**.

Debugger showed forwarder information rather than server object

When debugging in a server context, selecting a server object displayed forwarder information, rather than the object itself. This was related to the reset of the default debugger after a VA Smalltalk image save and restart. Now, the correct information is displayed when using the StsDebugger as well as with the GbsDebugger. (#40321).

Replicating FixedPoint with subnormal LargeInteger results in primitive failure

When the implementation components of a server FixedPoint (numerator or denominator) are LargeIntegers that are within the SmallInteger range, replicating the FixedPoint resulted in a primitive failure in #basicHash:. (#43119)

Errors if multiple sessions send #asGSObjectInSession: to the same object

When creating a server object from a client object, if another process is trying to create a server object from the same client object, there is a small chance that two delegates will be created for the client object, the former being immediately thrown away by the second. This can result in a GbsObjErrDoesNotExist or another kind of error. (#45222)

Possible deadlock due to incorrect semaphore acquisition order

The method `GbsSession >> connectST:toGS:` obtains the cache semaphore and may later need to acquire the session semaphore. This violates GBS's semaphore acquisition order protocol, and under some conditions could result in a deadlock. (#45137)

Debugger may select incorrect initial frame

When selecting the initial frame to highlight in the debugger, the selection failed to account for some conditions in which the server frame should be selected. (#45395)

Errors when single stepping past server code frames

When single-stepping through server code, errors could result when the end of server side code is reached and the next step returns to client side code. (#45359)

Exceptions reported generic error messages

Exception display invoked `#errorString` rather than `#messageText`, and as a result, reported a generic error message rather than the specific error details. (#45319)

SmallDouble replication not always handled correctly

Flushing SmallDoubles from VA to the GemStone server could create a Float rather than a SmallDouble.

Replicating SmallDoubles from the server to VA could result in an incorrect sign bit, or fail to create an immutable client object. (#45309)

Hierarchy browser could display truncated hierarchy of classes

Due to changes in the way blocks are handled on the server, the list of classes displayed in the Hierarchy browser may be truncated in certain cases with 3.2.x servers. (#45027)

dumpAllProcessStacks used 1-second resolution to create filenames

`GbsConfiguration >> dumpAllProcessStacks` creates a filename based on the current date and time. Since the resolution was 1 second, it could overwrite a file if two stacks were dumped in the same second. The filename now includes the millisecond. (#45175)

Browsing server classes from association name may result in walkback

Server classes may have multiple associations for the same class; for example, Segment has an association to GsObjectSecurityPolicy, to allow code references to the older name to be resolved. Using the GemStone menu Browse class and specifying the alias name did not work correctly. (#45209)