GemStone®

GemBuilder® for Smalltalk Release Notes

Version 7.3.3

January 2011

GemStone™

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PATENTS

GemStone is covered by U.S. Patent Number 6,256,637 “Transactional virtual machine architecture”, Patent Number 6,360,219 “Object queues with concurrent updating”, and Patent Number 6,567,905 “Generational Garbage Collector”. GemStone may also be covered by one or more pending United States patent applications.

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Preface

These release notes describe the changes in the GemBuilder® for Smalltalk version 7.3.3 release. We recommend that everyone using GemBuilder for Smalltalk read these release notes before installing or upgrading. These release notes are also available on the GemStone Technical Support website.

For information on installing or upgrading to this version of GemBuilder for Smalltalk, please refer to the *GemBuilder for Smalltalk Installation Guide* for version 7.3.3.

Technical Support

GemStone Website

GemStone's Technical Support website provides a variety of resources to help you use GemStone products. Our new site is available via the URL:

http://support.gemstone.com

or directly at:

http://community.gemstone.com/display/GSS64/GemStoneS

All GemStone product documentation is provided in PDF form on this website. In addition to documentation, the support.gemstone.com website provides:

- Downloads and Patches, including past and current versions of GemBuilder for Smalltalk.
- Bugnotes, identifying performance issues or error conditions that you may encounter when using a GemStone product.
- TechTips, providing information and instructions that are not otherwise included in the documentation.
- Compatibility matrices, listing supported platforms for GemStone 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.

Requests for technical assistance may be submitted online, or 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: http://techsupport.gemstone.com

Email: techsupport@gemstone.com

Telephone: (800) 243-4772 or (503) 533-3503

Your GemStone support agreement may identify specific designated contacts who are responsible for submitting all support requests to GemStone. If so, please submit your information through those individuals.

If you are reporting an emergency by telephone, select the option to transfer your call to the Technical Support administrator, who will take down your customer information and immediately contact an engineer. Non-emergency requests received by telephone will be placed in the normal support queue for evaluation and response.

When submitting a request, please include the following information:

- Your name, company name, and GemStone server license number.
- The versions of all related GemStone 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 GemStone holidays.

24x7 Emergency Technical Support

GemStone 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 your GemStone account manager.

Training and Consulting

Consulting and training for all GemStone products are available through GemStone's Professional Services organization. GemStone periodically offers training courses at our offices in Beaverton, Oregon, or training can be arranged at your location. Contact your GemStone account representative for more details or to obtain consulting services.

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Chapter 1

Release Notes for GemBuilder for Smalltalk 7.3.3

GemBuilder for Smalltalk (GBS) version 7.3.3 is a new version of the GemBuilder for Smalltalk product, providing support for VisualWorks 7.7.1, an enhanced MemoryPolicy, and other improvements and bug fixes. 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 7.3.2, and version 7.3.3. If you are upgrading from a version prior to 7.3.2, please also review the release notes for each intermediate release to see the full set of changes.

This release supports VisualWorks 7.x. It does not support VisualWorks 5i or VA Smalltalk; support for these is provided in separate releases. This release supports both the GemStone/S 64 Bit 2.x product, using the Single-trip interface, and GemStone/S, using the Multi-trip interface. It is not usable with versions of GemStone/S 64 bit earlier than 2.2.5. For details on supported client platforms, see 'Supported Platforms and Versions' below.

To install GemBuilder for Smalltalk 7.3.3, follow the instructions in the *GemBuilder for Smalltalk Installation Guide* for version 7.3.3.

Supported Platforms and Versions

The following tables describe the client Smalltalk versions and platforms supported by GBS 7.3.3, and the GemStone server product shared library versions that can be used with each.

GemBuilder for Smalltalk version 7.3.3 supports both GemStone/S, the original 32-bit GemStone object server, and GemStone/S 64 Bit, the 64-bit GemStone/S-based object server. The following tables list the supported client operating system, client Smalltalk, and GemStone server version configurations for both GemStone/S server products.

Table 1 Supported 32-bit GemStone/S Server versions

	VW 7.7.1 32-bit with 7.7.1 OE	**VW 7.7 32-bit** with 7.7 OE
32-bit Windows 7; **32-bit Windows Vista;** **32-bit Windows Server 2003 Std Edition, SP1 or later;** **32-bit Windows XP, SP 1 or later**	6.5.7.5	6.5.7.5
Red Hat Linux ES 5.0	6.5.7.5	6.5.7.5
Red Hat Linux ES 5.5	6.5.7.5	
Solaris 10 on Sparc; **Solaris 9 on Sparc**	6.5.7.5	6.5.7.5

Table 2 Supported GemStone/S 64 Bit Server versions - RPC logins only

	VW 7.7.1 32-bit with 7.7.1 OE	**VW 7.7 32-bit** with 7.7 OE
64-bit Windows 7	2.4.4.4	2.4.4.4
32-bit Windows 7; **32-bit Windows Vista;** **32-bit Windows Server 2003 Std Edition, SP1 or later;** **32-bit Windows XP, SP 1 or later**	2.4.4.4, 2.3.1.6	2.4.4.4, 2.3.1.6
SUSE Linux ES 10; **Red Hat Linux ES 5.0**	2.4.4.4, 2.3.1.6	2.4.4.4, 2.3.1.6
Red Hat Linux ES 5.5	2.4.4.4	
Solaris 10 on Sparc; **Solaris 9 on Sparc**	2.4.4.4	2.4.4.4

Table 3 Supported GemStone/S 64 Bit Server versions - Linked or RPC logins
Linked logins require 64-Bit VisualWorks Smalltalk clients

	VW 7.7.1 32-bit with 64-bit 7.7.1 OE	**VW 7.7 64-bit** with 64-bit 7.7 OE
SUSE Linux ES 10; **Red Hat Linux ES 5.0**	2.4.4.4	2.4.4.4
Red Hat Linux ES 5.5	2.4.4.4	
Solaris 10 on Sparc	2.4.4.4	2.4.4.4

Changes and New Features

Updated Memory Policy Handling

The GBS-specific memory policy introduced in GBS 7.3.2 has been significantly rewritten to be compatible with the memory policies in VisualWorks 7.7.1. The new policy is named GbsMemoryPolicy and is similar to LargeGrainMemoryPolicy, the default memory policy in VisualWorks 7.7.1, with GBS-specific enhancements. GbsMemoryPolicy is compatible with both VisualWorks 7.7 and 7.7.1.

As in GBS v7.3.2, the use of GbsMemoryPolicy is controlled by the GbsConfiguration parameter #useGbsMemoryPolicy; if true (the default), a GbsMemoryPolicy with default memory sizing will be used. If set to false, the default memory policy for the VW version in use will be used.

Tuning memory policy to anything other than these two defaults varies by VisualWorks version. In VW 7.7.1, the memory upper bounds for both VW and GBS memory policies may be set using the Settings tool. In VW 7.7, you should not use the settings tool to configure a GbsMemoryPolicy. You should instead send #defaultMemoryUpperBound: to the GbsMemoryPolicy class.

To use a custom memory policy that is not based on GbsMemoryPolicy, make sure #useGbsMemoryPolicy is set to false, then manipulate the memory policy as documented by Cincom for the VisualWorks version you are using. To create a custom memory policy based on GbsMemoryPolicy, make sure #useGbsMemoryPolicy is set to true, subclass GbsMemoryPolicy, override its #initialize method to set its parameters, and send #install to your subclass. Use caution when tuning; some combinations can cause failure of garbage collection, causing the client or server VM to run out of memory. Consult VisualWorks documentation for more information on memory management.

Interval display change

An instance of Interval previously displayed itself in GBS Inspectors by listing the computed elements in the Interval. Now, the display is consistent with VisualWorks and displays the start, stop and increment values of the Interval.

Note this change applies to replicated Intervals on the client. Interval printStrings that come from the server, which also consist of a list of elements, are unaffected by this GBS change.

File out with #Source encoding

When filing out using the menu option GS-File out as..., the method promptForFilename: opens a writeStream on the specified file. This file is now opened withEncoding: #Source.

backupPolling on different page in Settings Dialog

The backupPolling checkbox is now on the Signals and Events tab of the Settings Dialog, rather than Server Communication.

Bugs Fixed

The following bugs have been fixed since GemBuilder for Smalltalk version 7.3.2:

Replication errors in Collections

If a sequence of replications includes an instance of certain types of Collection, and later replications replicate a structure referring to this same collection but with a replication level that would not include replicating the collection, the collection contents may be incorrectly empty. This affects OrderedCollection and Set, and collection classes implemented using Set (such as Dictionary), and their subclasses, and only to systems running with 32-bit GemStone/S servers. (#41115)

Replicating instance of subclass of DateTime always results in TimeStamp

An instance of a subclass of server DateTime that is intended to be replicated to an instance of a subclass of VW TimeStamp, is actually replicated as an instance of TimeStamp. (#41141)

Post-Lost OT Root processing could have unstubbed stubs or synchronized incorrectly

After a lost OT Root from the server, all client replicates must be updated since synchronization has been lost. The code that did this collected replicates in a Dictionary, which required sending #hash to the entry, as well as risking incorrect synchronization if replicates compared equal. (#41045)

Segment tool walkback if AllGroups has nil segment

If the segment of AllGroups is set to nil, attempting to create a new group using the Segment tool resulted in a walkback. (#41120)

Improved test to determine if runtime image

Previously, the method GbsConfiguration class>>isRuntimeImage checked for the presence of certain classes that were assumed not to be in the runtime; however, these classes may still be present in a runtime, depending on how the runtime was built. Now, native VW tests for runtime are used. (#41047)

Senders/Implementors may report “nobody” for uncommitted methods

If a method with a selector that did not previous exist was created, in the browser or by filein, senders and implementors was not able to find it.

This bug only existed when running against GemStone/S 64 Bit. Senders and Implementors used AllSymbols to lookup method names. On symbol creation in the 64-bit product, the SymbolGem adds the new symbol to its AllSymbols, but the current session will have an outdated view of AllSymbols until it commits or aborts. (#41163)

Stubs and Forwarders now immutable if autoMarkDirty is false

If autoMarkDirty is false, previously stubs and forwarders were not immutable. There was therefore a small risk that updates to an object in one thread at the same time the object became a stub or forwarder in another thread could cause severe problems. Now, stubs and forwarders are always immutable. (#40998)

Failed to detect attempt to map a non-canonical symbol

VisualWorks permits the creation of a non-canonical client symbol using Symbol new. If a non-canonical client Symbol is referenced by a GBS object, it does not get mapped, but no error was raised. Since the non-canonical symbol was not mapped, there were subsequent errors, such as when flushing, but these did not indicate the actual cause of the error. Now, if an attempt to map a non-canonical client Symbol is detected, an appropriate error raised. (#41001)

Workspace flicker on login/logout

When sessions log in and out, workspaces were repainted, causing a flicker. Now, only the toolbar is updated; workspace text panes do not flicker. (#41204)