GemStone®

GemBuilder for Smalltalk Release Notes

Version 5.3

October 2008

GEMSTONE S™

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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 new features and bugs fixed in the GemBuilder for Smalltalk® version 5.3 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 customer website, as described in the next section.

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

Technical Support

GemStone provides several sources for product information and support. The product-specific manuals and online help provide extensive documentation, and should always be your first source of information. GemStone Technical Support engineers will refer you to these documents when applicable.

GemStone Web Site: http://support.gemstone.com

GemStone's Technical Support website provides a variety of resources to help you use GemStone products. Use of this site requires an account, but registration is free of charge. To get an account, just complete the Registration Form, found in the same location. You'll be able to access the site as soon as you submit the web form.

The following types of information are provided at this web site:

Help Request allows designated support contacts to submit new requests for technical assistance and to review or update previous requests.

Documentation for GemBuilder for Smalltalk is provided in PDF format. This is the same documentation that is included with your GemBuilder for Smalltalk product.

Release Notes and **Install Guides** for your product software are provided in PDF format in the Documentation section.

Downloads and **Patches** provide code fixes and enhancements that have been developed after product release. Most code fixes and enhancements listed on the GemStone Web site are available for direct downloading.

Bugnotes, in the Learning Center section, identify performance issues or error conditions that you may encounter when using a GemStone product. A bugnote describes the cause of the condition, and, when possible, provides an alternative means of accomplishing the task. In addition, bugnotes identify whether or not a fix is available, either by upgrading to another version of the product, or by applying a patch. Bugnotes are updated regularly.

TechTips, also in the Learning Center section, provide information and instructions for topics that usually relate to more effective or efficient use of GemStone products. Some Tips may contain code that can be downloaded for use at your site.

Community Links provide customer forums for discussion of GemStone product issues.

Technical information on the GemStone Web site is reviewed and updated regularly. We recommend that you check this site on a regular basis to obtain the latest technical information for GemStone products. We also welcome suggestions and ideas for improving and expanding our site to better serve you.

You may need to contact Technical Support directly for the following reasons:

- Your technical question is not answered in the documentation.
- You receive an error message that directs you to contact GemStone Technical Support.
- You want to report a bug.
- You want to submit a feature request.

Questions concerning product availability, pricing, keyfiles, or future features should be directed to your GemStone account manager.

When contacting GemStone Technical Support, please be prepared to provide the following information:

- Your name, company name, and GemStone/S license number
- The GemStone product and version you are using
- The hardware platform and operating system you are using
- A description of the problem or request
- Exact error message(s) received, if any

Your GemStone support agreement may identify specific individuals who are responsible for submitting all support requests to GemStone. If so, please submit your information through those individuals. All responses will be sent to authorized contacts only.

For non-emergency requests, the support website is the preferred way to contact Technical Support. Only designated support contacts may submit help requests via the support website. If you are a designated support contact for your company, or the designated contacts have changed, please contact us to update the appropriate user accounts.

Email: support@gemstone.com

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

Requests for technical assistance may also be submitted 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 that is non-operational. In these cases, please also submit your request via the web or email, including pertinent details such error messages and relevant log files.

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.

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, if they encounter problems that cause their production application to go down, or that have the potential to bring their production application down. 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.

- Training courses are offered periodically at GemStone's offices in Beaverton, Oregon, or you can arrange for onsite training at your desired location.
- Customized consulting services can help you make the best use of GemStone products in your business environment.

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 5.3

GemBuilder for Smalltalk (GBS) version 5.3 is a new release of the GemBuilder for Smalltalk product. This release adds support for GemStone/S 64 Bit version 2.x for VA Smalltalk. These release notes provide details changes and bugs fixed in this release.

This release does not support VisualWorks; VisualWorks is supported by a separate release of the GBS product. This release cannot be used with 32-bit GemStone/S, or with GemStone/S 64 Bit version 1.x.

To install GemBuilder for Smalltalk 5.3, follow the instructions in the *GemBuilder for Smalltalk 5.3 Installation Guide*.

Supported Platforms and Versions

The following table describes the client Smalltalk versions and platforms supported by GBS 5.3 and the GemStone/S 64 Bit shared library versions that can be used with each.

GemBuilder for Smalltalk supports GemStone/S 64 Bit 2.x only.

Table 1 GemStone/S shared library versions compatible with GBS 5.3 on each platform and client Smalltalk

	Windows XP, Service pack 1 or later	Windows 2003	Windows Vista
Instantiations VA Smalltalk 7.0.1	GemStone/S 64 Bit 2.2.5.4 and 2.3 (RPC logins only)	GemStone/S 64 Bit 2.2.5.4 and 2.3 (RPC logins only)	
Instantiations VA Smalltalk 7.5.2	GemStone/S 64 Bit 2.2.5.4 and 2.3 (RPC logins only)	GemStone/S 64 Bit 2.2.5.4 and 2.3 (RPC logins only)	GemStone/S 64 Bit 2.3 (RPC logins only)

Changes and New Features

GemStone/S 64 Bit v2.x support

This release includes support for 64-bit OOPs, allowing support for GemStone / S 64 Bit version 2.x. See “Supported Platforms and Versions” on page 1 for details.

Time Zones - added full support for multiple daylight savings time rules

The changes in the rules governing the start and end of daylight savings time (DST) in the US and Canada in 2007 exposed a limitation in replication of DateTime instances. The patches available for load into GBS for VA Smalltalk include patches suitable only for the US and Canada.

Version 5.3 includes a complete fix for this issue.

By default, a copy of the gem's current TimeZone is replicated to the client at login. This is used for the client’s GbsTimeZone for replication.

If the customer application changes the gem's current TimeZone after a session has logged in, GBS cannot detect this. In this case, the client application needs to send the new message

```
GbsSession >> setClientTimeZoneFromServer
```

to re-replicate a copy of the timezone.

If the customer application has clients who are in different timezones from their gems, and wants the time zones to be different in the gem and the client, they should create the desired TimeZone on the server, and replicate it to the client, using the method

```
GbsSession >> clientTimeZone:
```

For example:

```
myGbsSession clientTimeZone:
  (myGbsSession evaluate: 'TimeZone
      fromGemPath:''/foo/bar/America/New_York''').
```

Bugs Fixed

The following bugs have been fixed since GemBuilder for Smalltalk 5.2.5:

Risk of data loss with unmapped class and split replication

If an object whose class is not yet mapped was replicated, and the object happened to be split into two or more traversal buffers, only the data in the first traversal buffer was used. This resulted in lost data in the replicated object. (#36637)

Large integers had wrong value after re-fault to client

If a server large integer was faulted to the client, and the identical large integer was faulted a second time in the same session, while the first still existed, the value of the client large integer was corrupted, leaving the value not matching the original server value. (#35789)

Hashed collection replication involving class generation corrupted collection

This bug applied when replicating a hashed collection (such as Bag, Set, or Dictionary), when the hash computation accesses the instance variables of the collection elements, and when the class of the elements in the collection and the class of the elements used in the hash computation were not previously mapped between GemStone and the client. The replication process is interrupted by the class mapping, and the subsequent completion of replication was not done in the correct order, leaving the resulting collection missing elements and with many elements in the wrong location. (#34905)

Debugger shows GbsForwarder as receiver, rather than server object

Stepping through server code using the debugger, the middle right panes show the receiver. However, it was showing the GbsForwarder to the receiver, not the server object of interest. (#36397)

Reopening saved image with open GemStone browser caused walkback

If an image was saved with a session logged in and a GemStone browser open, restarting the image resulted in a walkback. (#39465)

System Browser missing menu option to view class comment

The System Browser option to view comments for a class was missing from the menu. (#28988)

Error on add to server Array that was replicated

If an Array is replicated, and the server Array has additional elements added, it resulted in an error, since client Arrays do not dynamically resize. (#36977)

Class connector allowed to non-class objects

GBS incorrectly allowed creation of a class connector from a non-class object to a class. (#10913)

TimeZone related bugs

The following TimeZone-related bugs are either fixed, or no longer apply since the new TimeZone subsystem is available. See “Time Zones - added full support for multiple daylight savings time rules” on page 2 for details.

Could not correctly replicate DateTimes in both 2006 and 2007

VisualWorks and GBS previously only supported a single client local TimeZone instance. If the rules governing the start and end of Daylight Savings Time changed from year to year, only one rule could be active. (#36432, #36563)

Replicated DateTimes incorrect for one hour at end of DST

The calculation to adjust server DateTime GMT values to client local time incorrectly applied the end Daylight Savings Time (DST) at the time of the change (usually 2am) in local standard time, one hour off from the correct time to apply the change. (#36400)

DST change applied at GMT, not local time

The calculation for the start and end of Daylight Savings Time incorrectly calculated the time the DST change should take effect as the GMT time, not the local time. Start and end times for DST were incorrect by the number of hours of difference between local time and GMT. (#36390)

Replicated DateTimes may adjust for DST a week early

The calculation of the start of Daylight Savings Time, based on OS information, included an error that was exposed by the 2007 changes in DST start time. This resulted in applying the DST change a week early. (#36360)

Daylight Savings Time starts and ends a second late

Daylight Savings Time officially occurs at specified time such as 2:00:00 AM; meaning that there should be no time 2:00:00 AM, the local time at the instant following 1:59:59 will be 3:00:00 AM. GBS replication did not begin applying the DST change until the second following, which becomes 3:00:01. (#36433)

The equivalent bug exists in older versions of the GemStone server products; see GemStone/S bug #36374 and GemStone/S 64 Bit bug #37080.