GemStone®

GemBuilder for Smalltalk Release Notes

Version 7.2.1

July 2008

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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 7.2.1 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

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- 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 7.2.1

GemBuilder for Smalltalk (GBS) version 7.2.1 is a new release of the GemBuilder for Smalltalk product. Please take time to read through these release notes before installing or upgrading, to acquaint yourself with the changes.

This release supports VisualWorks 7.x. It does not support VisualWorks 5i, or VisualAge or VA Smalltalk; support for these is provided in separate releases. For details on supported client platforms, see 'Supported Platforms and Versions' below.

This release supports the new Single-trip GemStone server protocol only, and cannot be used with versions of GemStone/S 64 Bit earlier than 2.2.5, nor with the 32-Bit GemStone/S product. This release is has been tested and is fully supported with GemStone/S 64 Bit 2.2.5.4.

To install GemBuilder for Smalltalk 7.2.1, follow the instructions in the *GemBuilder for Smalltalk Installation Guide.*

If you have any questions regarding this release, please contact your GemStone account manager or GemStone Technical Support.

Supported Platforms and Versions

The following tables describe the client Smalltalk versions and platforms supported by GBS 7.2.1, and the GemStone server product shared library versions that can be used with each.

This version of GemBuilder for Smalltalk can not be used with versions of GemStone/S 64 Bit earlier than 2.2.5, nor with GemStone/S, due to use of the Single-trip protocol. A subsequent GBS release will include support for the previously used Multi-trip as well, allowing use with earlier versions of GemStone/S 64 Bit and GemStone/S.

The following table lists the supported client operating system, client Smalltalk, and GemStone/S 64 Bit server version configurations.

Table 1 Supported GemStone/S 64 Bit Server versions

	VW 7.5 with 7.5 OE	**VW 7.6** with 7.6 OE
Windows XP, SP 1 or later	2.2.5.4 (RPC only)	2.2.5.4 (RPC only)
Windows 2003 Standard Edition SP 1 or later	2.2.5.4 (RPC only)	2.2.5.4 (RPC only)
Windows Vista		2.2.5.4 (RPC only)
SuSE Linux ES 10	2.2.5.4 (RPC only)	2.2.5.4 (RPC only)
HPUX 11.11	2.2.5.4 (RPC only)	2.2.5.4 (RPC only)

Changes and New Features

Performance improvements

Performance has been significantly improved in a number of areas, especially replicating objects from the server to the client.

Stack dumping performance improvement

Dumping cache dictionary contents during stack dumping now avoids contacting the server. Previously, cache dumps could in some circumstances contact the server many times, causing significant slowdown.

Non-support of Sparc/Solaris

Performance improvements in GBS have exposed an alignment problem in the VisualWorks Sparc/Solaris VM, resulting in SIGBUS errors. Therefore, GBS 7.2.1 cannot be run on Sparc/Solaris VMs version 7.6 and earlier. Cincom is aware of the problem, and expects to have it fixed in the next VisualWorks VM version.

Support for qualified namespace names in connectors

GbsNameConnectors and GbsClassConnectors now understand a fully-qualified client object name (stName), allowing these connectors to connect to objects in arbitrary client namespaces.

Debugger Inspect Process

An Inspect Process menu item has been added to the debugger, under the stack menu. This simplifies debugging with multiple processes. In addition, the Process inspector now includes its #identityHash, for cross reference to the Process Monitor.

Change in behavior for isLinkedLoginUnavailable

Previously, the method `GbsSessionManager >> isLinkedLoginUnavailable` returned false if the client library was not yet loaded, even though when the library is not loaded it is unknown if linked logins will be available or not. Now, this method will load the client library in order to return a valid answer.

The impact of this change should be minor, since linked logins cannot be used in configurations including this release of GBS.

Bugs Fixed

The following bugs have been fixed since GemBuilder for Smalltalk version 7.2:

In user creation, selecting existing Segment changed its owner

User creation allows you to select an existing Segment. However, doing this incorrectly changed ownership of that Segment to the newly created user, regardless of the existing owner and user of that Segment. (#38316)

Some error paths could result in undetected loss of synchronization

If an error or process termination interrupts some server interactions, the client and server replicate state may no longer be synchronized. Previously, this condition was undetected in some cases. Now, a GbsInterfaceError is signaled with text warning of this condition. (#36324)

Stack dumps limited to maximum string size

It was possible for very large stack dumps to exceed the maximum string size (2^28) and fail. (#38543, #36797)

Stamp dumps did not include information if session semaphore was held

Delegate information did not display even minimal information in a stack dump if the session semaphore was held. Now, OOP and some basic state is displayed. #(38249)

Viewing stack could unstub stubs

Stack dumping and functions such as gbxDebugPrintOn:, when sent to instances of Collections (other than Array) containing stubs, caused the stubs to be unstubbed. (#38470)

After server restore from backup, GBS sessions could not log in

When the server is in restore mode, such as following a restoreFromBackup:, symbol creation is disallowed. Previously, the GBS login process, specifically time zone replication, created symbols, which meant sessions could not log in via GBS to complete the restore process. (#38490)

Selecting in SymbolListBrowser resulted in error

Selecting a Dictionary in the SymbolListBrowser with GS64 2.2.x repositories containing nil Segments resulted in a walkback. (#37323)

When connecting, client classes could get created on server

At login, when connecting class connectors with a postConnect action of #updateST, it was possible for a second corresponding client class to be created on the server. (#38649, 38651)

Now, class connectors with a postConnect action of #none are connected in bulk at login, and connectors with other postConnect actions are then connected separately.

asLocalObjectUsingReplicationSpecSet: did not use arg replicationSpecSet

The method GbxDelegate >> asLocalObjectUsingReplicationSpecSet: replicated using that session's current replicationSpecSet, rather than the replicationSpecSet passed in as an argument (#38686)

asLocalObjectCopy used the current replication spec

The deprecated method GbxDelegate>>asLocalObjectCopy used the current replication spec set. If anything is clamped by this replication spec set, the replicated object graph could contain stubs instead of replicating the full transitive closure of the requested object. This could later result in many more round trips to the server to unstub the stubs. (#38733)

MNU #hasLiveSessionFlag when disconnecting object and multiple sessions

If multiple sessions are logged in from the same client, the explicit removal of the client/server object mapping could result in the error “Message not understood: #hasLiveSessionFlag”. (#37090)

Server contexts disappear from debugger

Occasionally, after a debugger operation such as a step, all server contexts would disappear from the stack display. This could occur if an error or timeout happened during the operation. Now, if the server stack cannot be retrieved due to an error or timeout, a special entry will appear on the stack, with information about the problem encountered. (#37939)

Debugger lost block variables and temporaries

While debugging a stack which contained a server block context, if you executed a server operation (GS Do-it, etc.) from the block stack frame from within method body of the debugger, the context inspector lost values such as temporaries or parameters. (#36767)

Debugger stack inspector out of bounds error

The computation of the number of local variables fields was incorrect for server contexts, resulting in an out of bounds error. (#38768)

Inspector refresh resulted in walkback

In a client-only inspector, when the Text or Methods tab is selected, but not the Elements or Basic tabs, selecting the Object > refresh menu item resulted in a message not understood error. (#38931)

Inspector dive/inspect in a GemStone Set inspected wrong element

If a GemStone Set or instance of a subclass of Set has fewer than 2000 elements, inspecting or diving into an element in that collection inspected the incorrect element. (#37935)

Inspecting large GemStone Set or Bag fails

Inspecting an instance of a GemStone Set or Bag with more than 2000 elements failed. The left pane displayed “An error occurred trying to access the object.” (#38925)

In Inspector, evaluated expressions use incorrect “self”

In the evaluation pane of an inspector, expressions evaluated with “GS-Do it”, “GS-Print it”, etc. could bind “self” to nil, rather than the object being inspected. Thus, expressions containing “self” could produce errors or unexpected results. In version 7.2.1, “self” is properly bound, as long as it belongs to the current session. (#38962)

Inspector may have labeled client object as delegate

In some cases, a client object that is mapped to a server object may have displayed delegate information in the inspector, causing confusion. (#38929)

Evaluating variable in inspector on TextEditorController may fail

When inspecting a TextEditorController, evaluating an expression that included an instance variable of the object, failed to resolve it. (#38449)

GSMethods tab for server class resulted in walkback

When inspecting a server class, selecting the GS Methods tab resulted in walkback, _definitionInContext: not understood. (#38660)

Stub in gsInstVarNames resulted in infinite recursion

Under rare circumstances, infinite recursion could result when attempting to re-fetch an instance variable name, when that name had been garbage collected such that it was a stub in gsInstVarNames. (#38503)

Traversal in progress error on moreTraversal if stubs in clientTimeZone

If a sessions clientTimeZone object contained stubs, when a DateTime was replicated it required a server call to unstub the clientTimeZone details. If the previous replication was incomplete, requiring a moreTraversal, this resulted in a traversal in progress error, which invalidated the session. (#38638)

Method compile could have got wrong session

If a method is compiled in a session other than the current session, and there is a compile error during compilation, it may incorrectly get the current session and error. (#36138)

findClass... incorrect results for Symbol, ObsoleteSymbol

In a GemStone Classes Browser, doing a “find class...” on “Symbol” selected the class ObsoleteSymbol. Doing a “find class...” on “ObsoleteSymbol” did not select any class. The mapping of server Symbol and ObsoleteSymbol to client ByteSymbol has special handling, causing this problem only for these classes. (#38729)

Some method comments included non-ASCII characters

Several method comments related to new TimeZone classes included non-ASCII characters, which created problems with certain tools. (#38395)