GemStone®

GemBuilder for Smalltalk
Release Notes

August 2004

GemStone/S

GemBuilder for Smalltalk Version 6.0

IMPORTANT NOTICE

cannot attest to the accuracy of this information. Use of a term in this documentation should not be regarded as affecting the validity of any trademark or service mark.

Patents

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

Preface

These release notes describe the new features and bugs fixed in the GemBuilder for Smalltalk version 6.0 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.

Bugnotes 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.

Patches provide code fixes and enhancements that have been developed after product release. A patch generally addresses a specific group of behavior or performance issues. Most patches listed on the GemStone Web site are available for direct downloading.

TechTips 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.

Release Notes and Install Guides for your product software are provided in PDF format.

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

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/S 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 6.0*

GemBuilder for Smalltalk (GBS) version 6.0 adds support for VisualWorks 7.2 and the PDP debugger, and provides several other new features and bug fixes. These release notes provide details of the changes in this release. Please take time to read through them before installing the product, to acquaint yourself with any changes that may not yet be reflected in the printed documentation.

This release supports VisualWorks only, and primarily contains VisualWorks specific changes. Corresponding VisualAge specific changes will appear in a later release, as will further integration with VisualWorks tools such as the Refactoring Browser and Trippy Inspector.

The current product documentation, *GemBuilder for Smalltalk Version 5.2*, does not reflect the changes in GBS 6.0.

To install GemBuilder for Smalltalk 6.0, follow the instructions in the v6.0 *Installation Guide*.

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

1.1 Supported Platforms and Versions

The following table describes the client Smalltalk versions and platforms supported by GBS 6.0 and the GemStone/S shared library versions that can be used with each.

Table 1.1   GemStone/S shared library versions compatible with GBS 6.0 on each platform and client Smalltalk

	Windows 2000, Service pack 1 or later	Windows XP, Service pack 1	Red Hat Linux Advanced Server 2.1	Solaris 2.8	HPUX 11.11
VisualWorks 7.2.1	6.1, 6.1.3	6.1, 6.1.3	6.1.3	6.1, 6.1.3	6.1, 6.1.3 (rpc logins only
VisualWorks 7.2	6.1, 6.1.3	6.1, 6.1.3	6.1.3	6.1, 6.1.3	6.1, 6.1.3 (rpc logins only)

NOTE
We do not recommend running with Windows XP, service pack 2. This service pack is known to cause problems with VisualWorks. GemBuilder for Smalltalk version 6.0 is supported on Windows XP, service pack 1.

1.2 New Features

The following new features and modifications have been made in GemBuilder for Smalltalk 6.0.

Support for the PDP debugger

The PDP debugger is now fully integrated with GemStone, and can be used for all GBS/GemStone debugging. There are still a few known issues with the debugger; see "Known issues with PDP Debugger" on page 1-3.

As part of this effort, the GBS extensions to the classic VisualWorks debugger have been removed, and you should no longer use the classic VisualWorks debugger with GBS.

Server-side stepping in the debugger has also been overhauled and improved. Several actions that were previously not handled properly in all cases, such as steps that encompassed client forwarder sends, or exceptions that were not handled on the server, have been improved greatly in GBS 6.0.

Known issues with PDP Debugger

Server breakpoints cannot be set or viewed from within the PDP debugger. For now, use a GemStone browser to set breakpoints in server code, and use the GemStone Breakpoint browser to view them.(30625)

"Jump to carat" in server code is not implemented. This feature is new in the PDP debugger, and implementing it may require server changes.(30722)

"Return" is not yet implemented (30723)

PDP Server context spelling correction not implemented. This menu item is disabled for all server execution.(30725)

Senders and implementors submenus are incomplete for server methods(30735)

"Run with break on return" fails with Message not understood (30744)

Cannot edit server methods from the debugger (30987)

Cannot "step into" from a server context into a client forwarder send. (31001)

Color-coding server contexts

A new feature of the PDP debugger is the ability to color code contexts. Debugging GBS and GemStone server code is much easier when you can visually distinguish client and server code.

To set the color code of the server contents:

1. In the settings tool, in the **Tools->Debugger** page, edit the Context list presentation.

2. Click "**New**" twice to get two "**Everything**" entries in the pattern list.

3. Select the first "**Everything**".

4. Rename it to something appropriate like "GemStone Server contexts".

5. Change its pattern string to:

    `*$L$GS*`

6. Change its color to something other than black.

7. Click OK.

In the debugger, server contexts will now be listed in the color you selected, and client contexts in black.

Error handling improved

Previously, if an error was encountered while processing a fatal error, only the last error encountered was reported to the user. This could be misleading as well as making failure diagnosis difficult. Handling of fatal errors has been enhanced so that secondary errors resulting from a fatal GemStone error now also report the original error (and other errors encountered) as a probable cause.

ThreadSafeCaches/ProcessSafeCaches removed

The GBS configuration option "processSafeCaches" (also known by the older name "threadSafeCaches") has been removed. GBS now always behaves as it did when this option was set to "true".

MarkDirty mechanism changed

The latest release of VisualWorks has added object immutability, allowing GBS to use this mechanism to implement autoMarkDirty. This allows us to avoid the method bytecode modifications that were formerly used.

The object modification mechanisms #makeGSTransparent, #markDirtyOnInstvarAssign, and #markDirtyOnAtPut have been removed. When autoMarkDirty is enabled, all replicates are automatically tracked, regardless of class.

It is still possible to send #markDirty to an object to mark it dirty, but it is no longer necessarily more efficient than using autoMarkDirty; in some cases it is less efficient.

String class mapping

GemStone server string classes are now mapped to VisualWorks' platform-specific string classes.

GemStone tools now accessible on Launcher toolbar

Icons allowing you to open the GemStone Session Browser, GemStone Class Browser, and GemStone Workspace are now available via toolbar buttons on the VisualWorks Launcher.

1.3 Bugs Fixed

The following bugs have been fixed since GemBuilder for Smalltalk 5.2.2.

GemStone menu added to existing VisualWorks launcher on install

In previous releases, in order to have the GemStone menu on the VisualWorks Launcher, a new launcher had to be opened. This has been changed to use the VisualWorks #pragma facility, so reopening is no longer necessary. (28498)

Reinvocation of GbsSession>>postLogout can invoke user code concurrently

GbsSession>>postLogout may cause user application code to be invoked, for example to cleanup the application as part of session termination. If this application code encountered an error, it was possible to reenter GbsSession>>postLogout and cause the application code to be invoked again. (30873)

Cached Session TimeZone not cleared on logout

On login, a GbsSession caches the current TimeZone. Previously, when the session logged out this cached information was not cleared. If the same GbsSession object was logged in again, the previous TimeZone information would have been used. If the TimeZone was changed between logins, this TimeZone information would have been incorrect. (29776)

GCI library was not found in the current directory on Unix

When searching for a shared library in the current directory, instead of using "./<libraryname>", VisualWorks canonicalized this path to just "<libraryname>". On Unix, however, an unqualified library name is interpreted as instructions to search the $LD_LIBRARY_PATH, rather than in the current directory. If $LD_LIBRARY_PATH did not include the current directory, the GCI library was not found. (29676)

Invalid attempts to generate "ClientForwarder" class

Under rare circumstances when logging in a session for the second time when clientForwarders were being used, the synchronization on login would attempt to

create a ClientFowarder class. This would result in the error "attempting to generate class with nil superclass". 30977