GemStone®

GemBuilder® for Smalltalk
Release Notes

Version 7.6

April 2013

vmware®

GEMSTONE℠

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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 version 7.6 release. This documentation is 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 7.6.

Terminology Conventions

The term "GemStone" is used to refer to the server products GemStone/S 64 Bit and GemStone/S; and may also be used to refer to the company, previously GemStone Systems, Inc., now a division of VMware, Inc.

Technical Support

GemStone Website

http://support.gemstone.com

GemStone's Technical Support website provides a variety of resources to help you use GemStone products:

- ‣ Documentation for released versions of all GemStone products, in PDF form.
- ‣ Downloads and Patches, including past and current versions of GemBuilder for Smalltalk.
- ‣ Bugnotes, identifying performance issues or error conditions you should be aware of.
- ‣ 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. Technical Support is available to customers with current support contracts.

Requests for technical support may be submitted online, by email, or by telephone. We recommend you use telephone contact only for serious requests that require immediate attention, 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**

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. Please also open a ticket on the website, and include error and log information. 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.

GemStone Technical Support is available from 8am to 5pm Pacific Time, Monday through Friday, excluding VMware/GemStone holidays.

24x7 Emergency Technical Support

GemStone Technical Support 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 is available to help you succeed with GemStone products. Training for GemStone software is available at your location, and training courses are offered periodically at our offices in Beaverton, Oregon. 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 7.6

Release Notes for GemBuilder for Smalltalk 7.6

GemBuilder for Smalltalk (GBS) version 7.6 is a new version of the GemBuilder for Smalltalk product. This release provides updated Code Browsers and a new Launcher Tool, which provide a interface more similar to that of the VisualWorks tools, along with many new features supporting programming. This release also includes a number of bug fixes. Please review 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 7.5, and version 7.6. If you are upgrading from a version prior to 7.5, please also review the release notes for each intermediate release to see the full set of changes.

This release supports both GemStone/S 64 Bit, the 64-bit GemStone/S-based object server, and with GemStone/S, the original 32-bit GemStone object server.

GBS v7.6 requires VisualWorks 7.9 or later. This release cannot be used with earlier versions of VisualWorks, nor with VisualAge Smalltalk.

To install GemBuilder for Smalltalk 7.6, follow the instructions in the *GemBuilder for Smalltalk Installation Guide* for version 7.6.

Supported Platforms and Versions

The following tables describe the client Smalltalk versions and platforms supported by GBS 7.6, 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 7.6.

Table 1   Supported 32-bit GemStone/S Server versions

	VW 7.9.1 32-bit	VW 7.9 32-bit
Windows 2008 R2; Windows 7; Windows XP, SP 1 or later	6.6.3.3	6.6.3.3
Red Hat Linux ES 5.0, 5.5, and 6.1	6.6.3.3	6.6.3.3
Solaris 9 and 10 on SPARC	6.6.3.3	6.6.3.3

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

	VW 7.9.1 32-bit	VW 7.9 32-bit
Windows 2008 R2	3.1.0.2	3.1.0.2
Windows 7; Windows XP, SP 1 or later	3.1.0.2, 2.4.5.1	3.1.0.2, 2.4.5.1
SUSE Linux ES 10 and 11 Red Hat Linux ES 5.5 and 6.1	3.1.0.2, 2.4.5.1	3.1.0.2, 2.4.5.1
Solaris 10 on SPARC	3.1.0.2, 2.4.5.1	3.1.0.2, 2.4.5.1
Solaris 9 on SPARC	2.4.5.1	2.4.5.1

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

	VW 7.9.1 64-bit	VW 7.9 64-bit
SUSE Linux ES 10 and 11; Red Hat Linux ES 5.5 and 6.1	3.1.0.2, 2.4.5.1	3.1.0.2, 2.4.5.1
Solaris 10 on SPARC	3.1.0.2, 2.4.5.1	3.1.0.2, 2.4.5.1

New Features

The primary changes in this release are updated Tools; in particular, the GemStone menu from the VisualWorks Launcher and the Session Browser have been combined into a new GemStone Launcher, and the System and other code browsers have been redesigned to have a richer, more usable interface.

These tools also now include complete menu bar menus and Toolbars, as well as the previously existing popup menus.

A number of new features have been added, accessible via the GemStone Launcher and Code Browsers, and some existing features have been significantly enhanced.
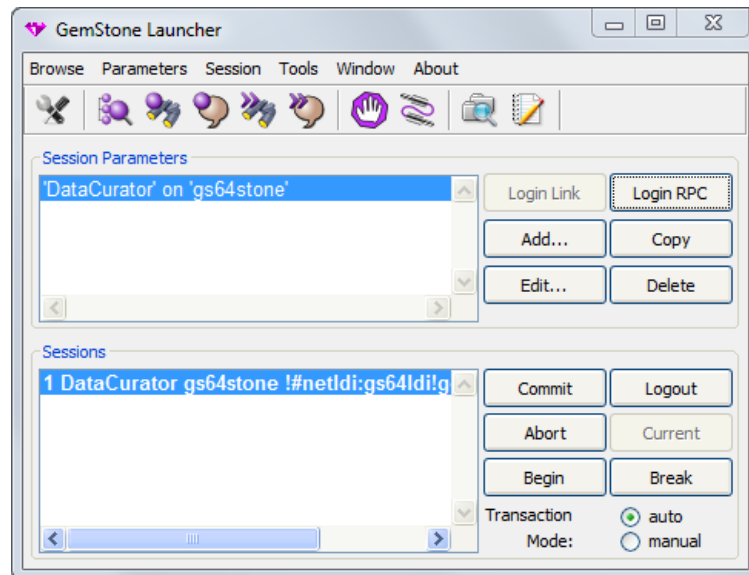
Windows titles and menu items have updated titles and names, and some rearrangement has been done.

For a complete description of the new GemStone Launcher, Code Browsers, and Menus, see the updated *GemBuilder for Smalltalk User's Guide*.

The Administrative Tools have not been updated in this release.

New GemStone Launcher

Previously, most GemStone functions were accessible via a GemStone menu on the VisualWorks Launcher, while login and session management was handled by the Session Browser. These functions have been consolidated into a new Tool, the GemStone Launcher.

The GemStone Launcher is similar to the old Session Browser, including:

▸ All the functionality that was provided by the old Session Browser to manage session parameters and sessions.

▸ Menu bar providing access to all the functions previously provided in the VisualWorks' Launcher GemStone menu, on the **Browse** and **Tools** menus.
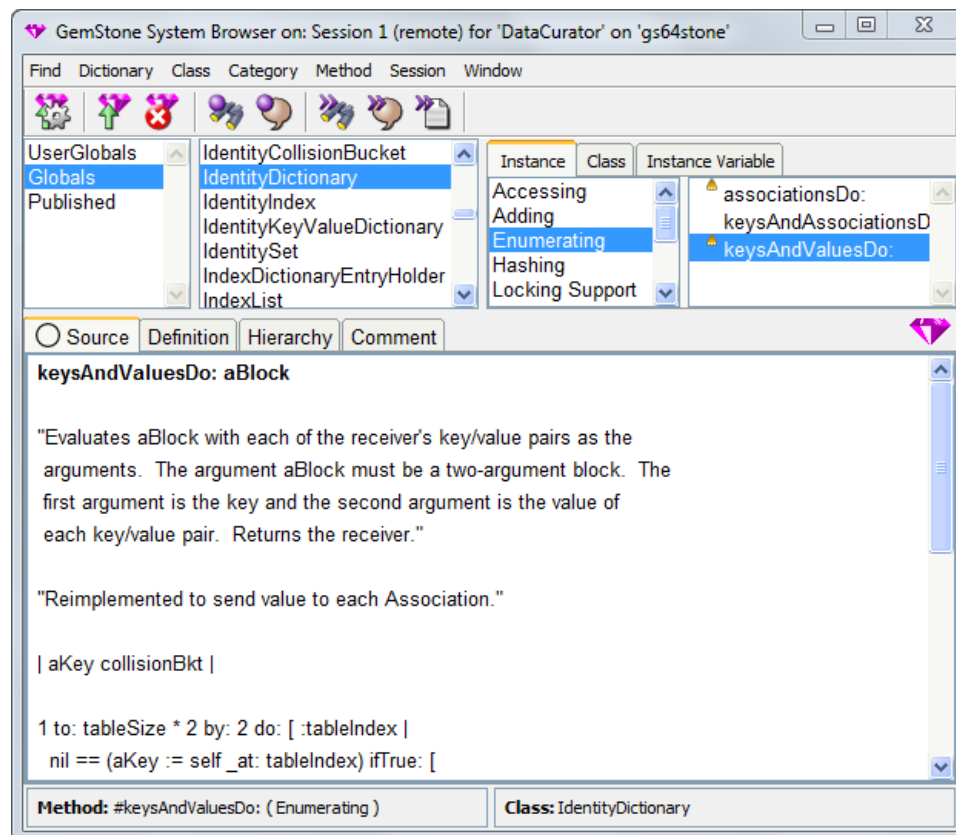
▶ Toolbar containing shortcuts to the most commonly used functions.

▶ Menus and Toolbar shortcuts providing access to the VisualWorks Launcher functions that are most commonly needed while working with server code, such as New Workspace.

While the primary change in the layout is the new position of the lower set of buttons, note that the description string for logged-in sessions has been updated to be more informative.

Some of the new features in the GemStone Launcher are described on page 11. For more details on the GemStone Launcher, see the updated *GemBuilder for Smalltalk User's Guide*.

Updated Code Browsers

The System Browser and other tools that GBS provides to browse and edit GemStone server code have been redesigned to be more usable as well as provide a look and feel closer to the VisualWorks. The changes include many new features.

Changes in the Code Browsers include:

▶ Menu Bars with functions corresponding to the popup menus for each pane

▶ Find menu, consolidating Class and method search functionality, with enhanced search behavior.

▶ Toolbar containing commonly used global operations

‣ Status bar at the bottom providing SymbolDictionary, Class, Protocol and Method

‣ An indicator to show presence of unsaved text changes.

‣ Ability to toggle Auto-Commit to avoid accidental loss of work

‣ Tabbed access to class information, including class definition, hierarchy, and the class comment

‣ Tabbed access to view class or instance methods or instance variables

Some of the new features of the Code Browsers are described below. For more details on the Code Browsers, see the updated *GemBuilder for Smalltalk User's Guide*.

Notable Changes and New Features on Launcher and Code Browsers

Auto-Commit
This is a per-session option that applies to all code browsers for a session. When this is on, each code accept is not only saved, but the change is immediately committed to the repository. Auto-commit can be toggled from the GemStone Launcher or from any of the code browsers. Note that changes made to the repository or to code outside of the code browsers do not trigger the automatic commit, although such changes will be made persistent with the next Code Browser accept.

Raise/Collapse GemStone windows
This option, on both the Launcher and Code Browsers, allows you to minimize all GBS windows except the Launcher, or reopen them.

Find Class
The Find Class dialog now provides a list of classes that you can automatically narrow by typing in the first part of the class name. Selecting a class will navigate to that class if you are in a browser displaying multiple classes that include the target class, otherwise a Hierarchy Browser is opened.

Finding a method
Searching for senders, implementors, or references to now handles wildcards and case. The rules governing search for these:

‣ Search accepts * and ? as wildcard characters. If the search text includes wildcard characters, a list of method selectors will be presented for selection, prior to displaying the list of methods to browse.

‣ Search with no wildcard characters is case-sensitive.

‣ Search with all lowercase text and one or more wildcard character is case-insensitive.

‣ Search with a mixed case or uppercase text, and one or more wildcard characters, is case sensitive.

Code Browser Status Bar
A Status bar at the bottom of the Code Browsers indicates the symbol dictionary, class, protocol, and/or method name, depending on the specific browser and selection.

Code Browsers Commit and Abort
The Symbol Dictionary pane popup menu previously included Commit and Abort. These operations are now available on the Toolbar; they also appear on the new Session menu, which includes Begin Transaction as well. These changes make Commit Transaction and Abort Transaction available in all Code Browsers.

Instance Variable access tab

Along with the tabs providing easy access to instance and class methods, an instance variable tab provides the list of instance variables in the selected class (bold) and inherited instance variables. Selecting an instance variable displays all methods that directly access that instance variable. You may also use this to create accessor methods for a single instance variable.

Enhanced Method menus

The method menus now allow you to find senders/implementors and hierarchy senders/implementors of the method or any of the messages it sends.

Immediate access to class definition, hierarchy, and comment

Tabs on the lower Text pane allow you to see the class definition, hierarchy, or comment at any time, without losing method selection. Clicking back on the Source tab returns to the method text.

Text Modification Indicator

An icon on the Text View Tabs shows you the presence of unsaved text changes.

Method formatting

The Text pane popup menu now provides method formatting, using the underlying client Smalltalk method formatting functionality.

Drag and Drop Symbol Dictionary reordering

Symbol Dictionary order can now be changed using drag and drop.

Changes in method viewing and category behavior

Methods now do not require a category to be selected; without a category selection, all methods for the class are displayed, and newly created methods are placed in the category "unknown". Multiple methods can be selected and some operations, such as Move To, will operate on all selected methods. You may drag and drop methods between categories.

Other Changes and Bug Fixes

Faster bulk class removals

Removing a large number of client classes is faster in this release, for cases in which no sessions are logged into GemStone from that image. With no sessions logged in, it is not necessary to iterate instances of the classes being removed. (#42449)

Inspectors on large collections have improved open and scroll performance

Previously, there was noticeable delay in opening inspectors on large collections; this is now much faster. In addition, in some versions there were multiple repaints if the collection was resized during the delay before the inspector was completely painted; these issues have also been addressed. (#42462, #42025)

Debugger Edit menu GS functions broken

The debugger provides the ability to GS-Do it, etc. from both pop-up menus in the method text pane and from the menu bar Edit menu. These operations from the Edit menu resulted in walkbacks, although the same functions on the pop-up menus worked correctly. (#42669)

Setting Breakpoint in debugger resulted in error

Executing GS-Set Breakpoint in a server context in the debugger resulted in an error, "Selector does not exist in class". (#42426)

Create in ST/Compile in ST non functional

In v7.5 only, attempting to create or compile a class on the client resulted in an error "ServerMap access without sessionProtect". (#42447)

In v7.3.2 through 7.4.1, the Class option "Create in ST" did not create the class on the client, but did not report an error. The option "Compile in ST", which first performs a nonfunctional Create in ST, reported an error when the class was not found for method compilation. (#42446)

Logins failed if connectors involved LargeIntegers

If there is a connector that involves a LargeInteger as a target or the OOP of a target object, on login the connector initialization failed, which resulted the login failing. (#42492)

VW's feature to write stacks to log file causes extra inspector to open

VW permits you to edit the method DebuggerService>>logErrorFor:label: to have error stacks automatically written to a file. If this change is made, then on GemStone server error, a inspector on MessageNotUnderstood pops up, as well as the error notification. (#42445)

Metaclass offset cache in upgraded servers results in warning dialog

When running against a server that was upgraded from 2.x to 3.x, and you replicate a class when the class is not mapped, GBS attempts to build an offset cache. Since the 3.x upgrade does not convert the class's class from Metaclass to Metaclass3, the offset cache uses the Metaclass (2.x) instance variables. This results in warnings of the form Class ABC includes in its instVarMap the name def, which is not a server instance variable name. (#42689)

Recursion in printing of Root NameSpace in debugger

The GBS debugger printString code for NameSpace did not work correctly for Root NameSpace, which printed recursively. (#42570)

Invalid login to Seaside repository resulted in infinite recursion

The keyfile provided with the Seaside product does not allow traversal, which is required to use GemBuilder for Smalltalk. If such a login was attempted, the login error was not handled; instead of displaying an appropriate error, it went into infinite recursion attempting to get details. (#41509, #42577)

GBS applications cannot login to repositories that are started using the Seaside keyfile, or any keyfile that does not allow traversal.