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# **GemBuilder<sup>TM</sup> for Smalltalk/VW Release Notes**

**Version 8.4**

June 2019



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GemStone software is or has been covered by U.S. Patent Number 6,256,637 “Transactional virtual machine architecture” (1998-2018), Patent Number 6,360,219 “Object queues with concurrent updating” (1998-2018), Patent Number 6,567,905 “Generational garbage collector with persistent object cache” (2001-2021), and Patent Number 6,681,226 “Selective pessimistic locking for a concurrently updateable database” (2001-2021).

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# Preface

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## About This Documentation

These Release Notes describe the changes in the GemBuilder™ for Smalltalk/VW version 8.4 release.

For information on installing or upgrading to this version of GemBuilder for Smalltalk, please refer to the *GemBuilder for Smalltalk Installation Guide* for version 8.4.

## Terminology Conventions

The term “GemStone” is used to refer to the server products GemStone/S 64 Bit and GemStone/S, and the GemStone family of products; the GemStone Smalltalk programming language; and may also be used to refer to the company, now GemTalk Systems, previously GemStone Systems, Inc. and a division of VMware, Inc.

## Technical Support

### Support Website

**[gemtalksystems.com](http://gemtalksystems.com)**

GemTalk’s website provides a variety of resources to help you use GemTalk products:

- ▶ **Documentation** for the current and for previous released versions of all GemTalk products, in PDF form.
- ▶ **Product download** for the current and selected recent versions of GemTalk software.
- ▶ **Bugnotes**, identifying performance issues or error conditions that you may encounter when using a GemTalk product.

- ▶ **Supplemental Documentation** and **TechTips**, providing information and instructions that are not in the regular documentation.
- ▶ **Compatibility matrices**, listing supported platforms for GemTalk product versions.

We recommend checking this site on a regular basis for the latest updates.

## Help Requests

GemTalk Technical Support is limited to customers with current support contracts. Requests for technical assistance may be submitted online (including by email), or by telephone. We recommend you use telephone contact only for urgent requests that require immediate evaluation, such as a production system down. The support website is the preferred way to contact Technical Support.

**Website:** [techsupport.gemtalksystems.com](http://techsupport.gemtalksystems.com)

**Email:** [techsupport@gemtalksystems.com](mailto:techsupport@gemtalksystems.com)

**Telephone:** (800) 243-4772 or (503) 766-4702

Please include the following, in addition to a description of the issue:

- ▶ The versions of GemBuilder for Smalltalk and of all related GemTalk products, and of any other related products, such as client Smalltalk products, and the operating system and version you are using.
- ▶ Exact error message received, if any, including log files and statmonitor data if appropriate.

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

## 24x7 Emergency Technical Support

GemTalk 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 GemTalk Support Renewals.

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GemTalk Professional Services provide consulting to help you succeed with GemStone products. Training for GemStone/S is available at your location, and training courses are offered periodically at our offices in Beaverton, Oregon. Contact GemTalk Professional Services for more details or to obtain consulting services.

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# Table of Contents

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## *Chapter 1. Release Notes for GemBuilder for Smalltalk 8.4*

<i>Supported Platforms and Versions</i>	<b>8</b>
<i>Changes and New Features</i>	<b>8</b>
Support for VW 8.3.2 . . . . .	8
Support for GemStone/S 64 Bit version 3.5 . . . . .	8
library change on UNIX . . . . .	8
Support for X509-Secure GemStone server . . . . .	9
Support for private automatic asynchronous abort feature . . . . .	9
Displaying dynamic instance variables . . . . .	10
Default changed for initialDirtyPoolSize . . . . .	10
<i>Bugs Fixed</i>	<b>10</b>
GbxAbstractProxy ifNotNil: handled Symbol arguments incorrectly . . . . .	10
Remember password during login was not remembered . . . . .	10
GS-Senders of optimized selectors resulted in walkback . . . . .	11
Browse class from inspector on class failed . . . . .	11
Compiling a server class to the client gave too many dialogs . . . . .	11
Committed method changes may have been lost if class option instancesNonPersistent added . . . . .	11
"Compile in GS" may have incorrectly reported structure differences between GemStone and VisualWorks . . . . .	11
UserTools update authentication scheme to GemStone did not work . . . . .	11
Deleting current class version did not update references . . . . .	11
GBS suppressed inspector watches tab . . . . .	11



# Release Notes for GemBuilder for Smalltalk 8.4

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GemBuilder™ for Smalltalk (GBS) version 8.4 is a new version of the GemBuilder for Smalltalk product, adding support for GemStone/S 64 Bit version 3.5 and VW 8.3.2, and fixing a number of bugs. This release includes substantial changes in the infrastructure supporting tracking dirty objects and exception handlers within code that handles Gem interactions, to support a new private feature, automatic asynchronous abort. 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 8.3, and version 8.4.

If you are upgrading from a version prior to 8.3, please also review the release notes for each intermediate release between your version and 8.4, to see the full set of changes.

This release supports GemStone/S 64 Bit only, with VisualWorks 7.10.1 and 8.3.x. GBS 8.4 does not support 32-bit GemStone/S, nor VA Smalltalk.

To install GemBuilder for Smalltalk 8.4, follow the instructions in the *GemBuilder for Smalltalk Installation Guide* for version 8.4.

## Supported Platforms and Versions

The following tables describe the client Smalltalk versions and platforms supported by GBS 8.4, 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 8.4.

**Table 1 Supported GemStone/S 64 Bit Server versions**

	VW 8.3.2 32-bit and 64 bit	VW 7.10.1 32-bit	VW 7.10.1 64-bit
Windows 10	3.5, 3.4.3	3.5, 3.4.3	3.5
Windows 7	3.5, 3.4.3	3.5, 3.4.3	3.4.3
Ubuntu Linux 18.04	3.5		
Ubuntu Linux 16.04	3.5, 3.4.3	3.5, 3.4.3	
Red Hat Linux ES 7.4	3.5, 3.4.3	3.5, 3.4.3	3.5, 3.4.3
Red Hat Linux ES 6.9	3.5, 3.4.3	3.5, 3.4.3	3.5, 3.4.3

## Changes and New Features

The following changes are in version 8.4:

### Support for VW 8.3.2

Support for VisualWorks version 8.3.2 has been added. Testing has also been done with VW 8.3.1.

### Support for GemStone/S 64 Bit version 3.5

Support for the latest version of the GemStone/S 64 Bit server, v3.5, has been added.

If you are upgrading to v3.5 as well as upgrading to GBS v8.4, please read through the Release Notes for v3.5 for changes that impact your GBS application.

### library change on UNIX

In v3.4, a combined library **libfloss** was introduced. This was insufficiently flexible, and the change has been removed. With 3.5, as with v3.3.x and earlier, the required client libraries included, in addition to `libcirpc*` or `libcilnk*`, the shared library `libssl*`.

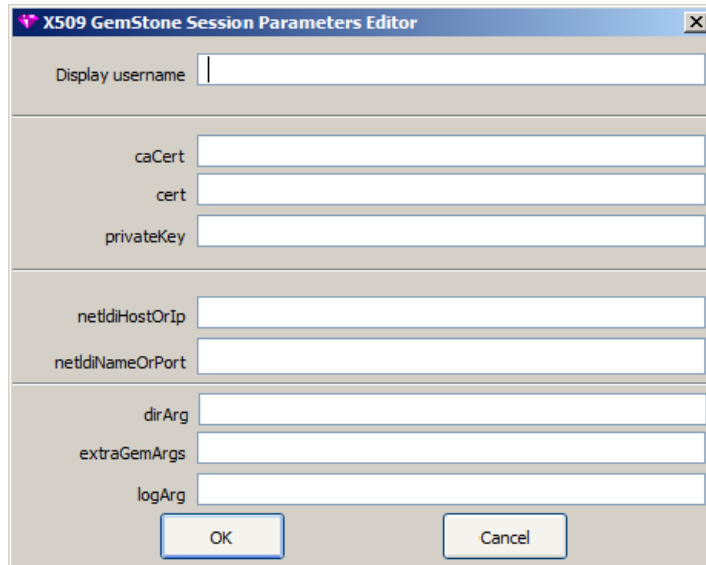
This does not apply to clients on Windows, which continue to require the same set of libraries.



## Support for X509-Secure GemStone server

GemStone/S 64 Bit v3.5 adds a new feature, X509-Secure GemStone, which provides logins secured by X.509 certificates, as well as other security features. These are described in the *GemStone/S 64 Bit X509-Secured GemStone System Administration Guide*.

X509-Secured logins require a different set of login parameters than traditional logins. To support X509-secured logins from GemBuilder clients, a new Parameters Editor has been added. This is available from the GemStone Launcher **Parameters > Add X609...** menu item.



The image shows a dialog box titled "X509 GemStone Session Parameters Editor". It contains several text input fields for configuration:

- Display username
- caCert
- cert
- privateKey
- netIdHostOrIp
- netIdNameOrPort
- dirArg
- extraGemArgs
- logArg

At the bottom of the dialog are "OK" and "Cancel" buttons.

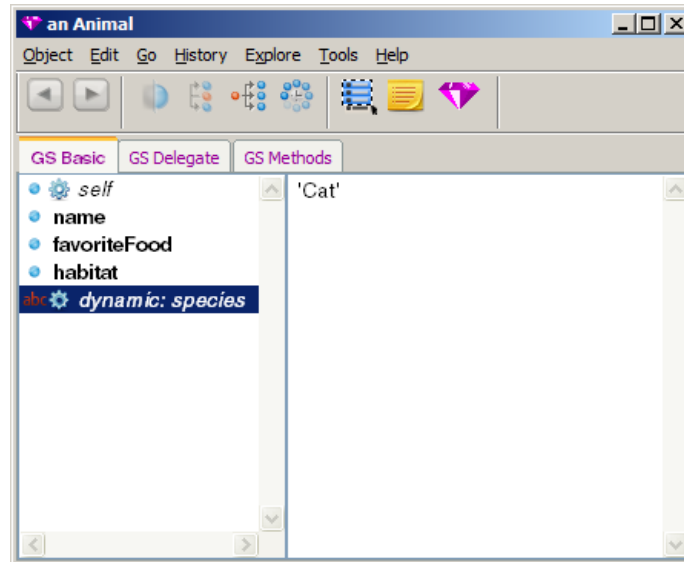
## Support for private automatic asynchronous abort feature

GBS now includes support for the automatic asynchronous abort server feature. This should be used only under the guidance of GemTalk Engineering.

## Displaying dynamic instance variables

Dynamic instance variables are now included in inspectors. Dynamic instance variables are per-instance key/value pairs that do not need to be common to all instances of a class.

The following example shows the display of an instance of `Animal` after sending `dynamicInstVarAt: #species put: 'Cat' .`



## Default changed for initialDirtyPoolSize

The default for GbsConfiguration parameter `initialDirtyPoolSize` was previously 100 and is now 10. While this increases the cost in some situations, many round trips have few or no dirty objects, and each round trip requires iterating over the capacity, regardless of the size of the contents.

## Bugs Fixed

The following bugs have been fixed in v8.4.

### GbxAbstractProxy ifNotNil: handled Symbol arguments incorrectly

When `ifNotNil:` was sent to a stub or forwarder with a `Symbol` as the argument, the results were inconsistent with sending `ifNotNil:` to other objects. `Symbol` arguments are now handled consistently. (#48002)

### Remember password during login was not remembered

If the password is not stored in the Login Browser parameters, and the remember password checkbox was selected in the prompt during login, this was not remembered; the Login Browser parameters were not updated. (#47895)

## GS-Senders of optimized selectors resulted in walkback

While optimized selectors appear in the source code for methods, the compiled bytes are optimized, so these are not actually message sends. Starting with GemStone/S 64 Bit v3.3, the set of methods with the occurrences of that optimized selector is returned from the server query; however, attempting to display these methods resulted in a subscript out of bounds error. (#47392)

## Browse class from inspector on class failed

When in a inspector on a GemStone server class, the menu item **Browse** did not correctly open a GemStone class hierarchy browser. (#47389)

## Compiling a server class to the client gave too many dialogs

The process of compiling a server class on the client, if there was already a server class on the client, displayed a replacement dialog for each individual method. Now, the dialog allows you to skip, replace, or replace all. (#47426)

## Committed method changes may have been lost if class option instancesNonPersistent added

Adding the class option `#instancesNonPersistent` does not create a new version of the class; this is behavior on the GemStone server. When the `#instancesNonPersistent` was added to a class's definition, the methods for that class were reverted to the methods that existed the previous time that class had been versioned, regardless of method changes that had been committed meanwhile. This resulted in the loss of committed method changes. (#47385)

## "Compile in GS" may have incorrectly reported structure differences between GemStone and VisualWorks

The private method `GbsSession>>privdoesClientClass:matchServerClass:` incorrectly counted inherited instance variables, which resulted in it detecting differences where none actually existed. (#47632)

## UserTools update authentication scheme to GemStone did not work

Attempting to modify a GemStone user's authenticationScheme to GemStone, using the User Tools, encountered an error, `#enableGemStoneAuthentication: not understood`. In v3.4, the method was renamed to `#enableGemStoneAuthenticationWithPassword:`. (#47294)

## Deleting current class version did not update references

In the Class Versions Browser, deleting the current class version (usually the most recent class version at the top of the list) did not update the SymbolAssociation, so references to the removed version remained. This was indicated by `ClassName[0]` in browsers. (#47209)

## GBS suppressed inspector watches tab

VisualWorks 8.x introduced a watches tab on the inspector. This was not being opened due to method overrides in GBS code. (#46523)