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GemStone®

# *GemStone/S* *Release Notes*

Version 6.5.4

October 2009

GEMSTONE ™

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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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### **GemStone Systems, Inc.**

1260 NW Waterhouse Avenue, Suite 200  
Beaverton, OR 97006

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## *Preface*

### **About This Documentation**

These release notes describe changes in the GemStone/S version 6.5.3 release. We recommend that everyone migrating to this version read these release notes before beginning installation, testing or development.

For information on installing or upgrading to this version of GemStone/S, please refer to the *GemStone/S Installation Guide* for version 6.5.3.

These documents are also available on the GemStone customer website, as described below.

### **Technical Support**

GemStone provides several sources for product information and support. The product-specific manuals provide extensive documentation, and should be your first source of information.

**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:

**Documentation** for GemStone/S is provided in PDF format. This is the same documentation that is included with your GemStone/S 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, and past and current versions of GemBuilder for Smalltalk.

**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.

**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.

## Help Requests

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.

**Website:** <http://techsupport.gemstone.com>

**Email:** [support@gemstone.com](mailto:support@gemstone.com)

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

Requests for technical assistance may be submitted online, or 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 as 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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# *GemStone/S 6.5.4*

## *Release Notes*

### **Overview**

GemStone/S 6.5.4 is a new version of the GemStone Smalltalk object server. This release provides new features and fixes several critical bugs; we recommend everyone using GemStone/S upgrade to version 6.5.4.

These release notes provide changes between the previous version of GemStone/S, version 6.5.2, and version 6.5.4. (Version 6.5.3 was a limited release; these release notes include all changes in version 6.5.3). If you are upgrading from a version prior to 6.5.2, please also review the release notes for each intermediate release to see the full set of changes.

For details about installing GemStone/S 6.5.4 or upgrading from earlier versions of GemStone/S or other GemStone server products, see the *GemStone/S Installation Guide* for version 6.5.4.

This release supports Solaris, Linux, AIX, and Windows.

### **Technical Support**

GemStone Technical Support has a new Help Request system. Customers with support agreements are invited to submit Help Requests to:

<http://techsupport.gemstone.com>

## Changes and New Features

### Ability to listInstances in page order

The following method has been added:

```
Repository >> listInstancesInPageOrder: anArray
```

This method returns a list of instances on the receiver that belong to one of the classes listed in *anArray* sorted by page order. The result of this method is a single Array containing all instances of all input classes.

This method is especially useful when the result will be scanned by one or more sessions to perform instance migration. Scanning the list in page order should perform much faster than scanning it in object ID order, which is how the results from `listInstances:` and `listReferences:` are returned.

### Extended Character Set has improved collation

GemStone/S v6.5.4 includes support for the Default Unicode Collation Element Table (DUCET), to improve collation and increase the options for customizing collation.

In GemStone, extended character set collation (ordering of characters for sort) is provided by the sequencing of characters within the CharacterDataTable structures. Previous releases ordered Characters according to the order in the Unicode data, which did not provide appropriate collation for some characters, such as ß.

The CharTableUnicode510.dat file provided with v6.5.4 is ordered according to the Default Unicode Collation Element Table (DUCET), as provided in the unicode sort file:

```
http://www.unicode.org/Public/UCA/latest/allkeys.txt
```

Correct collation depends on the language and usage, so this default collation will not be appropriate for all languages and all sorting conditions. For details, see the collation discussions in the Unicode Collation Algorithm:

```
http://unicode.org/reports/tr10/
```

The default collation using DUCET provides normal sorting order for English and most European languages; or collation can be customized for specific application needs.

The code that is provided as a extra file in to generate Character Data Tables from raw Unicode data, UnicodeData.gs, has been enhanced to allow the DUCET table to be used.

In addition to improved collation, v6.5.4 also includes the latest version of the Unicode data, version 5.1. GemStone documentation incorrectly indicated that previous releases included Unicode v5.1 data; in fact, previous releases included v4.1 data. To avoid confusion, the data files provided with GemStone releases have been renamed to include the version number.

The data file corresponding to the CharTableUnicode.dat file included in previous releases is now:

```
$GEMSTONE/examples/CharTableUnicode410.dat
```

The Unicode version 5.1, which was generated with the DUCET sort, is

```
$GEMSTONE/examples/CharTableUnicode510.dat.
```

## Bugs Fixed

The following bugs in GemStone/S 6.5.2 have been fixed in GemStone/S 6.5.4:

### Remote gem configurations on Windows

*Windows only*

Remote logins, where the Gem or linked session is on a separate machine than the Stone, failed when the Stone was running on Windows and the Gem or linked session was not on Windows. (#40322)

Remote linked logins from Windows clients may have encountered “Fatal Internal Error” problems on commit. (#40271)

These bugs, which are related to communication mechanisms that had problems specific to Windows, did not affect local logins on Windows, where both Gem and Stone are on the same machine. Also, logins from Windows clients where the Stone and Gem are on Unix or Linux platforms did not have problems.

### Remote Cache Timing condition may cause system shutdown

Under a rare timing condition, the Stone may have become confused about the status of a remote cache, and terminated gems, including the Page Manager gem. This caused the system to shut down. This could occur if the page manager requested that a remote shared cache be shutdown while a new remote shared cache on the same host was in the process of starting up. (#40281)

#### Additional logging

When a remote cache connection is lost, the timeout in seconds is now printed in the pagemanager log.

When a remove gem is terminated due to a lost remote cache connection, print the host name of the remote gem in the message in the stone log.

### Login following install of Character Data Tables could coredump

After installing a Character Data Table, subsequent logins could encounter the error “Freeing a NULL pointer”, and coredump. (#40262)

### Small inaccuracy in Float to Fraction conversion

Certain Float values, when converted to Fraction, produced results that did not exactly correspond to the Float. Binary Float cannot represent all Decimal Floats, while any Float can be exactly represented by some Fraction. (#40033)

For example, 7.6 is not exactly representable as a BinaryFloat; the Float equivalent is 7.5999999999999996E+00. When this is converted to a Fraction, the result should be (4278419646001971/562949953421312). Previous GemStone/S versions returned (38/5), which is exactly equivalent to the DecimalFloat 7.6, but is not exactly equivalent to the Binary Float 7.6.

### **Poor handling of too-large SPC specification**

If a size is specified for SHR\_PAGE\_CACHE\_SIZE\_KB that is larger than can be accommodated by 32-bit GemStone, but within the capacity of the hardware, GemStone did not handle cache sizing correctly. Results depended on the size specified, including failure to start with a shrpcmon coredump, or starting up with a cache smaller than specified. (#40054)

### **Unnecessary warning messages in Stone log**

If a session aborted immediately before logout, a message was printed to the stone log including the line:

transaction already aborted, ignoring ABORT record

This did not indicate any problem. These messages are no longer printed. (#40087)