GemStone®

GemStone/S™ Release Notes

Version 6.6.4

October 2013

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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 changes in the GemStone/S™ version 6.6.4 release. Read these release notes carefully before you begin installation, conversion testing, or development with this release.

No separate Installation Guide is provided with this release. For instructions on installing GemStone/S version 6.6.4, or upgrading or converting from previous products or versions, see the Installation Guide for version 6.6.2.

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

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

GemStone Website

http://gemtalksystems.com/techsupport

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**, including current and recent versions of GemStone/S products.

- **Bugnotes**, identifying performance issues or error conditions that you may encounter when using a GemStone product.
- **TechTips**, providing information and instructions that are not 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 assistance may be submitted online, 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 down. The support website is the preferred way to contact Technical Support.

Website: http://techsupport.gemtalksystems.com

Email: techsupport@gemtalksystems.com

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

When submitting a request, please include the following information:

- Your name and company name.
- 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.

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 your GemStone account manager.

Training and Consulting

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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Chapter 1

GemStone/S 6.6.4 Release Notes

Overview

GemStone/S 6.6.4 is a new version of the GemStone/S object server. This release adds a new feature to allow login/logout audit, and includes several bug fixes.

These release notes provide changes between the previous version of GemStone/S, version 6.6.3.3, and version 6.6.4. If you are upgrading from a version prior to 6.6.3.3, review the release notes for each intermediate release to see the full set of changes.

No separate Installation Guide is provided with this release. For installation instructions, use the Installation Guide for version 6.6.2.

Supported Platforms and GBS Versions

Platforms

GemStone/S version 6.6.4 is supported on the following platforms:

- Solaris 8, 9 and 10 on SPARC
- AIX 5.3, 6.1, and 7.1
- Red Hat Linux ES 5.0, 5.5, and 6.1
- Windows XP, Windows 2003, Windows 7, and Windows 2008 R2

For more information and detailed requirements for each supported platforms, please refer to the GemStone/S v6.6.2 Installation Guide for that platform.

GBS version summary

The following versions of GBS are supported with GemStone/S version 6.6.4, with the following client Smalltalk and platforms versions.

GBS version 7.6

VW 7.9.1	VW 7.9
▸ Windows XP, Windows 7, and Windows 2008 R2 ▸ Solaris 9 and 10 on SPARC ▸ RedHat Linux ES 5.0, 5.5, and 6.1	▸ Windows XP, Windows 7, and Windows 2008 R2 ▸ Solaris 9 and 10 on SPARC ▸ RedHat Linux ES 5.0, 5.5, and 6.1

GBS version 5.2.7

VA Smalltalk 8.5.2	VA Smalltalk 8.0.2
▸ Windows XP, Windows 7, and Windows 2008 R2	▸ Windows XP, Windows 7, and Windows 2008 R2

GemConnect

Existing GemConnect shared libraries will not load into GemStone/S version 6.6.4 on Solaris and AIX. On these platforms, please contact GemTalk Technical Support for recompiled libraries. (#43362, #43363)

On other platforms, the existing GemConnect shared libraries can be used.

Changes in this Release

Logging of session logins and logouts

A feature has been added to allow automatic recording of each login and logout from the stone (as well as other operations that are related, such as stone startup and shutdown).

This feature is disabled by default. To enable, set the new configuration parameter STN_LOGIN_LOG_ENABLED to TRUE in the configuration file used by the stone, prior to stone startup.

By default, all sessions that login to the stone will have logins and logouts logged, when enabled in the stone. You can disable logging for specific users by using the new method **`UserProfile >> disableLoginLogging`**. After this is executed, that UserProfile will not have logins or logouts recorded in the log file.

Logins and logouts are recorded to a text file named *stoneName*`_login.log`, in the same directory as the stone log.

Each log entry is on a line, with the following fields:

```
TimestampString TimeStampSeconds EventKind UserName SessionId
ProcessId RealUserID EffectiveUserID HostName GemIPAddress
ClientIPAddress NumCommits
```

These are described in more detail in the next section. For example:

```
"10/03/2013 16:42:48.720" 1380843768 STARTUP Stone 0 15270 631 631
kata.gemtalksystems.com 204.45.122.94 0.0.0.0 0
"10/03/2013 16:43:13.017" 1380843793 LOGIN DataCurator 3 15317 631
631 kata.gemtalksystems.com 204.45.122.94 10.94.141.15 0
"10/03/2013 16:43:23.488" 1380843803 SHUTDOWN Stone 0 15270 631
631 kata.gemtalksystems.com 204.45.122.94 0.0.0.0 0
```

Added Configuration Parameter

STN_LOGIN_LOG_ENABLED
Enable the logging of all session login and logout events to s separate log file owned by the stone. The file will be named %s_login.log and will be placed in the same directory as the stone log.

When this feature is enabled, logins and logouts are recorded for all sessions by default. Logging may by disabled for a UserProfile by sending the #disableLoginLogging message to a UserProfile instance and committing the transaction.

The login log file is a text file that contains one line per event. Fields within a line are separated by spaces; the Timestamp String is quoted. The fields logged in each line are:

- Timestamp String - time in human-readable form
- Timestamp Seconds - seconds from the epoch (January 1, 1970, 00:00 UTC)
- Event Kind - one of STARTUP, SHUTDOWN, LOGIN, LOGIN_FAIL, LOGOUT, or COMMIT_RESTORE.
- UserName - the UserProfile's userId, or "Stone" for the stone process.
- SessionId
- ProcessId
- Real UNIX user ID - numeric value; always 0 on Windows.
- Effective UNIX user ID - numeric value; always 0 on Windows.
- Host Name - node name where the gem process is running.
- Gem IP Address - IP Address of the gem.
- Client IP Address - IP Address of the gem's client.
- NumCommits - number of commits performed by the session.

STARTUP and SHUTDOWN records are written to indicate when the stone was started and stopped and do not indicate a session login or logout.

Login failures are written for non-exempt sessions that fail a login attempt, usually due to specifying a bad password.

Default: FALSE

Added methods

The following new methods allow you to manage login/logout logging status for specific UserProfiles, which overrides the status in the stone.

Note that setting this status for a particular UserProfile has no effect if login/logout logging is not enabled in the stone. However, once the logging status is set for a UserProfile, that will remain in effect. If the stone later does have logging enabled, that UserProfile's status will then control logging.

`UserProfile >> disableLoginLogging`
Disables the printing of login/logout events for the receiver to the stone's login log file. This method requires write access to the DataCurator segment and the #OtherPassword privilege.

`UserProfile >> enableLoginLogging`
Enables the printing of login/logout events for the receiver to the stone's login log file, if login logging is enabled in the stone. This method requires write access to the DataCurator segment and the #OtherPassword privilege.

`UserProfile >> hasLoginLogging`
Answer true if the receiver is configured to write login and logout events to the stone's login log file, false otherwise.

New method to get the host name

The following method has been added:

`System class >> hostname`
Return a String which is the name of the host on which the session is running.

Objects may fail to be GCed due to stored OOP tracking

Stored OOP tracking may be responsible for the GcGem voting down the entire possible dead set after an garbage collection operation such as MFC or MGC, if the GC session needed to perform a commit to process objects with weak references before the record dead. (#43173)

Very long hostnames not handled properly

Very long hostnames caused problems in GemStone: they were truncated in gslist, and caused errors in VSD. (#43303)

Statmonitor did not collect disk stats for Linux SAN

Statmonitor did not recognize the disk type commonly used by SAN devices, and did not collect disk stats for these disks. (#42934)

Socket buffer sizes smaller than OS default

The internal socket buffer sizes were smaller than the OS default. This could impact performance. (#43364)

Stone startup failure on AIX due to invalid ftok() argument

In a previous release (v6.6), the way the project id argument to ftok() was generated was changed, due to bug 41642. This change involved random generation of a number between 0 and 255. On AIX only, however, 0 is not a valid argument. When 0 happened to be generated on AIX, stone startup failed. (#43246).

In addition, the error message in this case has been improved. (#43246).