
GemStone®

GemBuilder® for Java™
Release Notes

Version 3.1.1

April 2014



GEMTALK™
SYSTEMS

GEMSTONE S™ 64
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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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About This Documentation

These release notes describe the changes in the GemBuilder® for Java™ version 3.1.1 release. We recommend that everyone using GemBuilder for Java read these release notes before beginning installation or development.

For information on installing or upgrading to this version of GemBuilder for Java, please refer to the *GemBuilder for Java Installation Guide* for version 3.1.1.

These documents are available on the GemStone support 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.

Other Useful Documents

- ▶ The *Javadocs* that are provided with the GemBuilder for Java product distribution are a key source of up-to-date information on GemBuilder for Java functionality.
- ▶ *GemBuilder for Java Tools Guide* describes the independent set of tools that let you explore and modify Smalltalk code in the server.
- ▶ *GemBuilder for Java Programming Guide* describes how to develop java based applications that interface with a GemStone server.
- ▶ Documentation provided with the GemStone/S 64 Bit server describes the GemStone System and programming in GemStone Smalltalk.

Technical Support

Support Website

<http://gemtalksystems.com/techsupport>

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

- ▶ **Documentation** for released versions of GemTalk products, in PDF form.
- ▶ **Downloads**, including current and recent versions of GemTalk products.
- ▶ **Bugnotes**, identifying performance issues or error conditions.
- ▶ **TechTips**, providing information and instructions that are not in the documentation.
- ▶ **Compatibility matrices**, listing supported platforms for GemTalk 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.

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 GemBuilder for Java, JDK, and of all related GemTalk products, and of any other related products, and 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.

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GemBuilder for Java

3.1.1 Release Notes

GemBuilder for Java (GBJ) version 3.1.1 is a new release of the GemBuilder for Java product. This release provides compatibility with GemStone/S 64 Bit version 3.2, and adds support for development of Android applications that can interface to GemStone/S 64 Bit.

These release notes provide details of the changes between GBJ v3.1 and this release. Please take time to read through them before installing the product, to acquaint yourself with the changes. If you are upgrading from a version earlier than 3.1, please refer to the Release Notes for each intermediate release as well. In particular, version 3.1 contained substantial internal redesign and significant changes.

To install GBJ v3.1.1, follow the instructions in the *GemBuilder for Java Installation Guide* for v3.1.1.

This version of GemBuilder for Java supports GemStone/S 64 Bit v3.2 and later only, and cannot be used with 32-Bit GemStone/S.

Server keyfiles and GBJ

With the release of GemStone/S 64 Bit v3.2 and GemBuilder for Java version 3.1.1, authorization for using GemBuilder for Java is now provided by the GS/64 keyfile. You will need to have a keyfile that provides authorization for use with GemBuilder for Java in order to use GemBuilder for Java.

To obtain a new keyfile for GemStone/S v3.2 and GemBuilder for Java (and GemConnect, if you are using that product), write to keyfiles@gemtalksystem.com. In your request, include the specific request for GBJ, as well as your license information, platform, and any updates to contact information. It may be helpful to include your current keyfile with the request.

Contact GemTalk Technical Support if you have issues or questions.

Supported Platforms

GemBuilder for Java version 3.1.1 is tested and supported on the following GemStone server product versions and platforms:

GemStone/S 64 Bit 3.2
<ul style="list-style-type: none">▶ Solaris 10 and 11 on SPARC▶ Solaris 10 on x86▶ AIX 6.1 and 7.1▶ Red Hat Linux ES 6.1 on x86▶ Ubuntu 10.04 on x86▶ Mac OSX 10.6.4 with Darwin 10.4.0 on x86

Changes and New Features

Support for GBJ/Android

GBJ now supports development of Android applications using the Android SDK.

The distribution for this release includes the file GbjTest.zip, which contains Android SDK files. These files can be used to build a simple example Android application that can login to a GemStone repository and execute simple GemStone Smalltalk commands. GbjTest can act as a template for your own GBJ Android applications.

The GBJ distribution does not include the libgbjgci and libssl libraries, since these have to be linked for the particular Android API level and the processor architecture of the Android device or emulator. Possible values include armeabi, MIPS or x86. Contact GemTalk Technical Support with this information to request the correct libraries.

Installing into Eclipse/Android SDK

1. Setup a staging directory and unzip the GbjTest.zip file into it. This directory is called \$GbjTest in these instructions.
2. Create the directory \$GbjTest/libs/\$host, where \$host is the processor architecture, such as armeabi, MIPS or x86.
Place the libgbjgci and libssl libraries you received from Technical Support in this directory.
3. Within the Android SDK, do the following:
 - a. Select File>Import...
 - b. From the Import Select window:
 1. Open the "Android" folder
 2. Highlight "Existing Android Code Into Workspace"
 3. Select Next> button at bottom

- c. From the Import Projects window:
 1. Enter the name of your staging directory \$GbjTest in Root Directory. GbjTest should appear in the Projects list.
 2. Select checkbox for "GbjTest" project, if not already selected.
 3. Select checkbox for "Copy projects into workspace". Alternatively, leave unchecked and use the staging directory.
 4. Select Finish button at bottom
4. The file `com.gemstone.hostenv` contains environmental parameters that would normally be passed through the unix environment, such as `$GEMSTONE`, as well as preferences that are normally set through java class `GbjGciPreferences`. For more information, see the java class documentation.
 Edit `com.gemstone.hostenv` as needed, and then download it to the device/emulator's `/data/local` directory using `adb`. For example


```
adb -e push com.gemstone.hostenv /data/local
```

 Possible fields in `com.gemstone.hostenv` that might require changing:
 - ▶ `GEMSTONE_NRS_ALL` to set netldi name or port
 - ▶ `GbjGciInterface.CLogLevel` to enable diagnostic output for C code
 - ▶ `GBJ.LogLevel` to enable diagnostic output for GBJ java code
5. Build, run, and debug as per Eclipse/Android SDK standards.

GbjTest App Behavior

When first started, the app presents a screen showing a Login button and 5 text fields:

```
IP Address
Stone Name
Netldi Port
User Name
Password
```

These should be filled in as appropriate for logging in to a running Stone. Clicking the Login button at the bottom either brings up an error message, or transfers control to a new screen containing a text field for entering GemStone Smalltalk code and buttons to Abort, Commit, Logout, or Execute the provided code. Clicking on Logout returns control back to the first screen.

When testing using an Android Virtual Device (AVD) in the SDK, the Stone must be accessible via the network for the host running the AVD. For phones/tablets, the device must have wifi activated.

GBJ/Android Development Details

Set network permissions in AndroidManifest.xml

Note the following fields in your application `AndroidManifest.xml` file:

```
<uses-sdk android:minSdkVersion...>
```

Make sure this is set as appropriate for your environment.

```
<uses-permission android:name=
"android.permission.ACCESS_NETWORK_STATE"/>

<uses-permission android:name="android.permission.INTERNET"/>
```

These must be set for networking access to work.

Initialization

Applications must call `GbjSession.initialize(false, <package-name> ...)` in order for the android GCI to be able to find the libssl library.

Configuring stdout/stderr for GBJ Applications on Android

To setup Android device/emulator to print out stdout/stderr messages to LogCat, use adb to setup the `log.redirect-stdio` property:

```
$ adb shell stop
$ adb shell setprop log.redirect-stdio true
$ adb shell start
```

Other Changes and Bugs Fixed

Further updates to the GBJ tools for GS64 3.x

The GBJ tools have had updates for compatibility with GemStone/S 64 Bit v3.2, including updated calls to deprecated methods, and updated filename for the GCSI shared library file. (#43949, #43387)

Improved reporting for library load errors

When libraries failed to load or initialize, previously the error did not provide further information. Now, when GBJ applications are run with `GbjGciPreferences` `GbjGciInterface.LogLevel` (or `GBJ.LogLevel`) set to `FINE` or greater, the stack will be dumped using `printStackTrace()`. (#42788)

Library load problems on AIX

Due to the way libraries are loaded on AIX, the other shared libraries that are now required for login are now linked directly in `libgbjgci`. (#41890)

Note that linked GBJ logins are no longer supported on AIX.