
GemStone

GemBuilder[®] for Java
Release Notes

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Version 2.1 for GemStone/S 6.1

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Patents

Facets is covered by U.S. Patent Number 6,256,637 "Transaction virtual machine architecture" and Patent Number 6,360,219 "Object queues with concurrent updating". Facets may also be covered by one or more pending United States patent applications.



Release Notes for GemBuilder for Java 2.1

GemBuilder for Java 2.1 introduces several new product features and fixes several bugs in previous product releases.

If you have any questions regarding this release, please contact your GemStone account manager.

1.1 New Features

The following new features are introduced with version 2.1 of GemBuilder for Java.

Session Brokers

In version 2.1, the GBJ session broker is run as a daemon (gbjd) in a linked GCI application. Executables are provided to start (startgbj) and stop (stopgbj) the session broker. For the sake of backward compatibility, these executables behave similarly to the corresponding TCL scripts shipped in earlier versions of GBJ. The most significant difference is that you can now specify passwords on the command line (or be prompted, for security).

The executables are packaged and shipped in a new bin directory at the top level of the GemBuilder for Java product tree.

To use the GBJ (gbjd) broker, you must have the GBJ_directory/bin directory in your executable search path on UNIX. (This is not required on Windows.)

startgbj Usage

```
startgbj [infile][-h][-a gbjAdministratorPassword][-p password] \
[-P hostPassword][-T gbjBrokerConnectToken]
```

Table 1.1 presents the command line options on the startgbj command line.

Table 1.1 startgbj Command Line Options

Option	Meaning
infile	The path to a valid GBJ initialization file. Defaults to "gbj.ini" in the current working directory.
-h	Display command line help.
-a <i>gbjAdministratorPassword</i>	The GemStone password for the GbjAdministrator account.
-p <i>password</i>	The GemStone password for spawning Gems.
-P <i>hostPassword</i>	The host password for launching Gems.
-T <i>gbjBrokerConnectToken</i>	The GemStone username for connecting to a running broker.

stopgbj Usage

```
stopgbj [infile][-h][-a gbjAdministratorPassword][-p password] \
[-i|-t timeout][-T gbjBrokerConnectToken]
```

Table 1.2 lists the command line options on the stopgbj command line.

Table 1.2 stopgbj Command Line Options

Option	Meaning
infile	The path to a valid GBJ initialization file. Defaults to "gbj.ini" in the current working directory.
-h	Display command line help.

Table 1.2 stopgbj Command Line Options (Continued)

Option	Meaning
<i>-a gbjAdministratorPassword</i>	The GemStone password for the GbjAdministrator account.
<i>-i</i>	Shut down the broker immediately, even if clients are logged in.
<i>-t timeout</i>	Wait <i>timeout</i> seconds for users to log off before attempting to shut down the broker.
<i>-T gbjBrokerConnectToken</i>	The GemStone username for connecting to a running broker.

Smalltalk Protocol

As an alternative to these new executables, you can still start the session broker using Smalltalk protocol, as described in Chapter 2 of the *GemBuilder for Java Programming Guide*.

Preferences File for GBJ Tools

The GBJ Tools application now has a preferences file (*.gbjtoolsprefs.properties*), which is stored in your home directory.

The values in the preferences file are read at startup and are used to initialize the GBJ Tools application. If the file is not found at startup, default values are used to initialize the tools.

As shown in Example 1.1, the preferences file uses the format specified by the Java API for properties files: *<key>=<value>*, separated by a newline written in plain text. The parameters are generally the same as those used by *GbjParameters* for creating and logging into a GBJ session. Under normal circumstances, you should not need to modify this file.



Example 1.1 A sample GBJ Tools preferences file

```
#GBJ Preferences
#Tue Mar 25 13:50:52 PST 2003
GemService=
Theme=Metal
FontSize=14
HostPassword=
ServerVerbose=true
ClientVerbose=true
ConnectionTimeout=150
SavePassword=false
GemstoneUser=DataCurator
GemBrokerPort=9090
AutoLogin=true
GemstoneServer=gemserver60
HostUser=john_doe
GemBrokerMachine=localhost
Font=serif
GemstonePassword=
TransactionMode=MANUAL_TRANSACTIONS
Timeout=900
WordWrap=false
TabSize=3
```

The preferences file is only used by the GBJ Tools application and is not used by customer applications.

All values for the preferences file are either set in the Settings or Login dialogs in the GBJ Tools application.

- If you select Save Preferences in the Settings dialog, the GBJ Tools preferences file is overwritten.
- If you select Save Password in the Settings dialog, your host password and GemStone password are saved as clear text into the preferences file. This is insecure and should only be used during development in a secure environment — and **never** in production!

Table 1.3 lists the possible values for each of the fields in the preferences file.

Table 1.3 Possible values in the GBJ preference file

Field	Possible values
GemService	[empty, gemnetobject, gemnetobjcsh]
Theme	[Metal, Windows, CDE, Kunststoff]
FontSize	[8, 9, 10, 12, 14, 18, 24, 32]
HostPassword	[empty, User Host Password]
ServerVerbose	[true, false]
ClientVerbose	[true, false]
ConnectionTimeout	[Integer value such as 150]
SavePassword	[true, false]
GemstoneUser	[empty, Gemstone User]
GemBrokerPort	[Integer value such as 9090]
AutoLogin	[true, false]
GemstoneServer	[Server name such as gemserver61]
HostUser	[empty, User Login Name]
GemBrokerMachine	[Broker Machine Name]
Font	[Font Name such as serif or dialog]
GemstonePassword	[empty, Gemstone User Password]
TransactionMode	[MANUAL_TRANSACTIONS, AUTOMATIC_TRANSACTIONS]
Timeout	[Integer value such as 900]
WordWrap	[true,false]
TabSize	[1,2,3,4,5,6,7,8,9,10]

New Logging Facility Based on Log4J

GBJ Tools and protocol stack now use Log4J (from the Apache group) as the basis for logging. In previous versions, logging was simply sent to stdout or stderr. In the version 2.1 of GBJ, the log is written to a file (by default, .gbjlog in your home directory). To redirect the log to a different file, include the UseLogFile parameter on the GBJ Tools command line, as described on page 1-6.

To reduce the risk of conflicting usage between GBJ and customer applications, Log4J is under the package `com.gemstone.org.apache.log4j`. (Ordinarily, Log4J is under the package `org.apache.log4j`.)

For verbose logging, you can select the Client parameter in the Settings dialog or call the `setDebugOptions` of `GbjSession`.

As shown in Example 1.2, the log file format is based on the following standard used by Log4J:

```
"Time Stamp","Message Type -Info, Warning, Debug..","Thread","Message"
```

Example 1.2 A sample GBJ Tools log file

```
2003-04-04 09:32:03,044 INFO [main]: GemBuilder for Java
2003-04-04 09:32:03,048 INFO [main]: Copyright - Gemstone Systems
Inc. 2003
2003-04-04 09:32:03,048 INFO [main]: Operating system: SunOS
2003-04-04 09:32:03,049 INFO [main]: Operating system version: 5.8
2003-04-04 09:32:03,049 INFO [main]: System architecture: sparc
2003-04-04 09:32:03,050 INFO [main]: Java home:
/SystemA/users/john_doe/software/j2sdk1.4.1_02/jre
2003-04-04 09:32:03,051 INFO [main]: Java version: 1.4.1_02
2003-04-04 09:32:03,052 INFO [main]: gbj21.jar:.
2003-04-04 09:32:03,053 INFO [main]: User name: john_doe
2003-04-04 09:32:03,053 INFO [main]: User home: /home/john_doe
2003-04-04 09:32:03,080 INFO [main]: Current working directory:
/SystemA/users/john_doe/software/gbj
2003-04-04 09:32:03,081 INFO [main]: Beginning GBJ initialization
2003-04-04 09:32:03,081 INFO [main]: Loading Fonts
2003-04-04 09:32:04,672 INFO [main]: Loading GBJ preferences file
2003-04-04 09:32:31,105 INFO [AWT-EventQueue-0]: Exiting GBJ
```

Command Line Parameters

There are two ways to invoke the GBJ launcher:

```
C:\> java com.gemstone.tools.GbjLauncher [options]
```

or

```
C:\> java -jar gbj21.jar [options]
```

The first form of invocation assumes that your CLASSPATH is set to include `gbj21.jar`.

For both forms of invocation, you may specify the following command line options:

- `help` — print a help message (to standard output)
- `version` — print GBJ version information
- `UseLogFile filename` — write log output to the specified file
- `NoFileLogger` — send log output to standard output rather than to a file
- `UsePrefFile filename` — use the specified file for the preferences file
- `NoPrefFile` — do not load or save a preferences file

Version Compatibility

GemBuilder for Java 2.1 supports Version 6.1 of the GemStone/S server.

Broker and Server Gems named for VSD

The GBJ Broker and Server Gems now set their names to "GbjBroker-*<int>*" and "GbjGem-*<int>*", where *<int>* is an integer that uniquely identifies the process.

1.2 Bugs Fixed

The following bugs have been fixed in GemBuilder for Java version 2.1.

Logins fail with AUTH_ERR_SEG_READ

In some cases, client logins could fail with AUTH_ERR_SEG_READ. (28996)

Propagation of unmarshalling exceptions

When an error occurs on the server unmarshalling an object sent from the Java client, the server now sends back an exception to the client. (27388)

Excessive logging when verbose=false

Both the broker and server Gems would log many spurious messages to their log files, regardless of verbose settings. Setting verbose to false now limits log messages to startup, shutdown, and error messages. (29060, 28514)



Miscellaneous Smalltalk code optimizations

Smalltalk code has been optimized for performance and to reduce garbage creation. (29003)

Login to Broker Gem hangs

Attempts to login to the broker Gem (using the `gbjBrokerConnectToken`) would hang. This is not an issue when using JDK version 1.4.1. (29129)

Problem editing "large" files in GBJ Workspace and Launcher

Keyboard entry in GBJ workspaces ceased to work correctly on Windows when the text area contained a large amount of text. This is not a problem with the new Swing-based Java interface. (14629)

Settings dialog takes a long time to appear

Launching the Settings dialog box for the first time from the GBJ Launcher took a long time. This was due to a font loading issue and has been corrected. (28096)

ArrayIndexOutOfBoundsException in GUI with JDK 1.3

Selecting an option from a context or popup menu could produce a `java.lang.ArrayIndexOutOfBoundsException` exception when moving the mouse pointer. This is not an issue with JDK version 1.4.1. (27707)

Method List Browser doesn't update after an abort

After changing a method using the Method List Browser and issuing an abort, the code would not revert to its original form. This is not a problem with the new Swing-based Java interface. (14806)

1.3 Documentation Change Information

- In both the *GemBuilder for Java Tools* manual and the *GemBuilder for Java Programming Guide*, replace all occurrences of "gemserver51" or "gemserver60" with "gemserver61".