
GemStone®

GemStone/S *Release Notes*

Limited Distribution Special Release

Version 6.6.3.1

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vmware®

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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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GemStone/S 6.6.3.1 Release Notes (Limited Distribution Special Release)

Overview

GemStone/S 6.6.3.1 is a new limited distribution special release version of the GemStone 32-bit Smalltalk object server, containing changes to allow a larger shared page cache on AIX.

These release notes provide changes between the previous version of GemStone/S, version 6.6.3, and version 6.6.3.1. If you are upgrading from a version prior to 6.6.3, please also 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 6.6.3.

Supported Platforms

GemStone/S version 6.6.3.1 is supported on the following platforms:

- ▶ AIX 5.3, 6.1, and 7.1

For more information and detailed requirements for each supported platforms, please refer to the *GemStone/S Installation Guide v6.6.3* for that platform.

Changes in this release

Executable changes to allow larger SPC

The way the GemStone executable is built on AIX has been modified to allow a larger shared page cache. In this release, the hard upper limit on the SPC size is 3.25 GB (3355443200 bytes). (#42595)

One change that allows this is a modification to the address space model of the GemStone processes. Now, processes specify their address model using the equivalent of:

```
ldedit -b maxdata:0/dsa
```

With a maxdata of 0, AIX allows 13 segments to be used for shared memory. In previous releases, GemStone processes specified the very large address-space model using the equivalent of:

```
ldedit -b maxdata:0xD0000000/dsa
```

which allowed 12 segments.

This change provides an additional .25 GB, but with this change, other cache sizes will be more limited. The memory requirements for heap and stack together cannot exceed 256M for any process.

In this release, we recommend the `STN_PRIVATE_PAGE_CACHE` be limited to no more than 65536, regardless of SPC size. Since the stone allocates small amounts of memory as it runs, this size provides sufficient space so that unusual demands, such as a commit record backlog, do not result in the stone running out of memory and shutting down.

Gem processes will also need to limit the `GEM_TEMPOBJ_CACHE_SIZE`, `GEM_PRIVATE_PAGE_CACHE_KB`, and the size of the MFC buffers so that the total remains within the 256K limit.

In addition to this change, the Smalltalk interpreter stack is now allocated on the heap instead of using `mmap()`. This change allows another .25GB of memory.

Object >> `_objectWithOop`: wrong return for object that does not exist

When the method `Object >> _objectWithOop`: is passed an OOP that is not in use, it returned a primitive error. Per method comments, this should return `nil`. (#42572)