GemStone®

GemStone/S 64 Bit™
Release Notes

Special Limited Distribution Release

Version 2.2.6

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Chapter

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GemStone/S 64 Bit 2.2.6 Release Notes (Special Limited Distribution Release)

Overview

GemStone/S 64 Bit 2.2.6 is a new limited distribution special release version of the GemStone/S 64 Bit object server. This release adds support for POWER7, as well as a small number of other key changes. This release is only available for AIX, and GBS support is provided for a limited set of configurations.

These release notes provide changes between the previous version of GemStone/S 64 Bit, version 2.2.5.3.3, and version 2.2.6. If you are upgrading from a version prior to 2.2.5.3.3, 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 2.2.5.2.

Supported Platforms and GBS Versions

Platforms

GemStone/S 64 Bit version 2.2.6 is supported on the following platforms:

▸ AIX 5.3, AIX 6.1, and AIX 7.1

For more information and detailed requirements for each supported platforms, please refer to the GemStone/S 64 Bit v2.2.5.2 Installation Guide for that platform.

Changes in this release

Support for AIX on POWER7

The POWER7 chip provides more aggressive prefetch of data and instructions. This required additional memory barriers on atomic updates within GemStone, to avoid the risk of coherency and audit problems.

Previous versions of GemStone/S 64 Bit were not certified on POWER7. These earlier versions could encountered cache coherency and corruption problems when running with production loads on POWER7 systems. This included problems with page pinning in the object table, and reclaim gem aborts after translating dead oops to pageIds. (#42089)

Failure in pregrow of dynamically added extent causes extent corruption

When an extent is added dynamically using methods such as createExtent:withMaxSize:, the new extent is pregrown if DBF_PRE_GROW is true. If the operation fails, for example if the specified size is larger than available disk, the system does not clean up properly, and it can result in the wrong information written to the root page. (#42147)

Changes in handing of temporary object memory

TOC on AIX now flexibly-sized without growable configuration

In previous versions, the GEM_TEMP_OBJ_CACHE_SIZE on AIX was configured to a base size using GEM_TEMPOBJ_INITIAL_SIZE, and was dynamically growable to the GEM_TEMP_OBJ_CACHE_SIZE limit. Now this is no longer necessary on AIX. The TOC has an initial smaller size based on the space needed, and can expand as needed to the upper limit, as is done on Solaris and Linux

Upper limit on temporary object memory raised to 2 GB

Previous, the maximum GEM_TEMP_OBJ_CACHE_SIZE was 1000000 (1 GB). this has been increased to 2000000 (2 GB).