StoRM

- **StoRM is a storage resource manager for disk based storage systems.**
  - It implements the SRM interface version 2.x.
  - StoRM is designed to support guaranteed space reservation and direct access (native POSIX I/O call), as well as other standard libraries (like RFIO).
  - StoRM take advantage from high performance parallel file systems. Also standard POSIX file systems are supported.
  - A modular architecture decouples StoRM logic from the supported file system.
  - Strong security framework with VOMS support.

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StoRM General Considerations 1/2

- **File system currently supported by StoRM**
  - GPFS from IBM.
  - XFS from SGI.
  - Any other File System with POSIX interface and ACLs support.
- **Light and flexible namespace structure**
  - The namespace of the files managed by StoRM relies upon the underlying file systems.
  - StoRM does not need to query any DB to know the physical location of a requested SURL.

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StoRM General Considerations 2/2
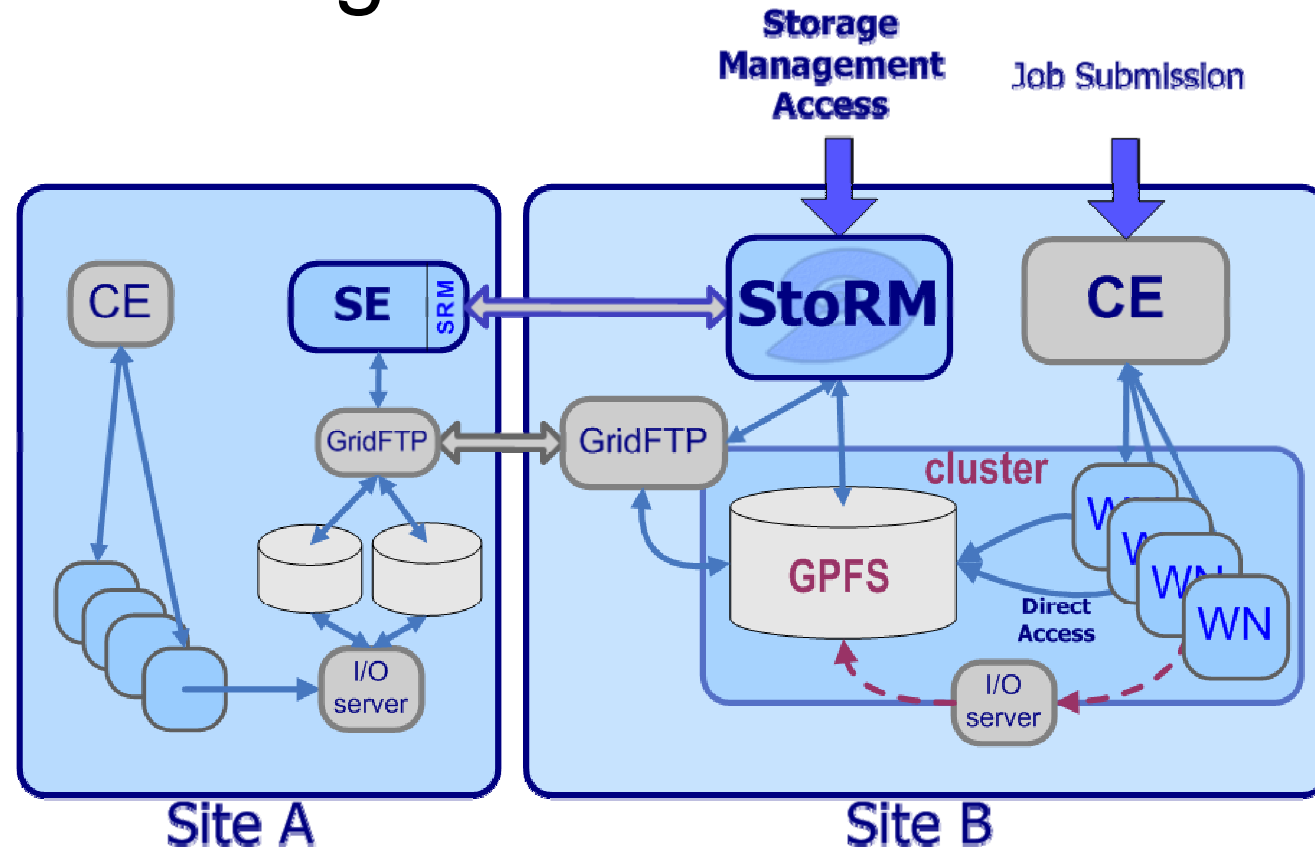
- **ACLs Usage**
  - ☐ StoRM enforce ACL entries on physical files for the local user corresponding to the grid-credential.
  - ☐ <u>Standard grid applications</u> (such as GridFTP, RFIO, etc.) can access the storage on behalf of the user.
- **Scalability and high availability.**
  - ☐ FE, DB, and BE can be deployed in 3 different machines.
  - ☐ StoRM is designed to be configured with n FE and m BE, with a common DB. But more tests are needed to validate this scenario.

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StoRM Grid usage scenario

- **StoRM dynamically manages files and space in the storage system.**

- **Applications can directly access the Storage Element (SE) during the computational process.**

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File metadata are managed (and stored) by underlying file system. No replica of metadata at application level.. That is a file system job! In this way StoRM gain in performance.

Data access is performed without interacting with an external service, with great performance improvement (POSIX calls). Otherwise, standard data access using I/O Server (such as RFIO) is also fully supported.

StoRM status and SRM issues

- **Status**
  - ☐ Migration to SRM v2.2 completed.
  - ☐ All functions requested by the SRM WLCG usage agreement are implemented.
  - ☐ New version of StoRM available.
- **StoRM SRM tests**
  - ☐ StoRM is involved in interoperability tests made by SRM-WG, the results are available here: http://sdm.lbl.gov/srm-tester/v22-progress.html
  - ☐ StoRM is involved also in other SRM tests made with S2 test suite: http://gdrb02.cern.ch:25000/srms2test/scripts/protos/srm/2.2/basic/s2_logs/

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