

StoRM

Last release, Short roadmap and Support mechanism

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- StoRM in a nutshell
- Latest release: v1.4.0
- Short roadmap: v1.4.x and 1.5.x
- Support mechanism

StoRM overview

- **A SRM service for different disk[†] based storage systems.**

Sites can change storage system without care about the SRM layer.

- **Simple, configurable and highly scalable.**

Easy enough to be the best substitute for a classicSE and scalable enough to satisfy a Tier1-scaled centre.

- **Efficient.**

High performance on SRM requests execution.

- **Secure.**

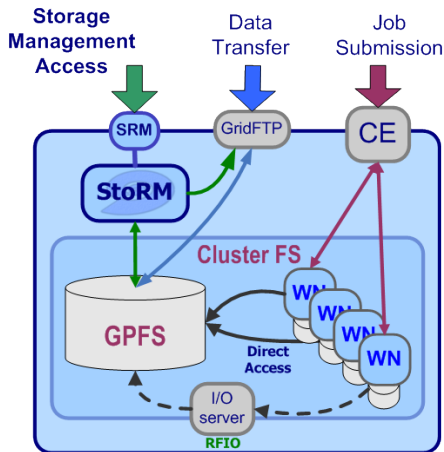
Layered security mechanism, VOMS based and highly configurable.

[†]: tape support (TSM and GPFS) is under development.

StoRM and cluster fs

- StoRM takes advantage of aggregation functionalities provided by dedicated systems, such as parallel and cluster file systems.
- A cluster file system allows large numbers of disks attached to multiple storage servers to be configured as a single file system.
- A cluster file system provides:
 - Transparent parallel access to storage devices while maintaining standard UNIX file system semantics.
 - High-speed file access to applications executing on multiple nodes of a cluster.
 - High availability and fault tolerance.

StoRM in a site

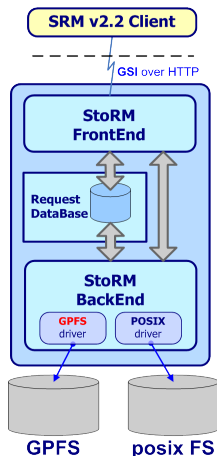


- It is designed to take advantage from **high performing cluster file system**, as GPFS and Lustre, but it supports also every standard POSIX File Systems
- It allows **direct access** to the storage resource (**file protocol**), as well as other standard grid protocol as *gsiftp* and *rfio*

StoRM architecture

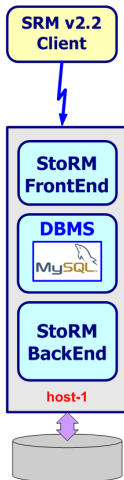
StoRM has a multilayer architecture.

- The **Frontend (FE)** component exposes the web service interface
- The **Database** is used to store SRM request data and the internal StoRM metadata
- The **Backend (BE)** is the main component and executes all SRM requests



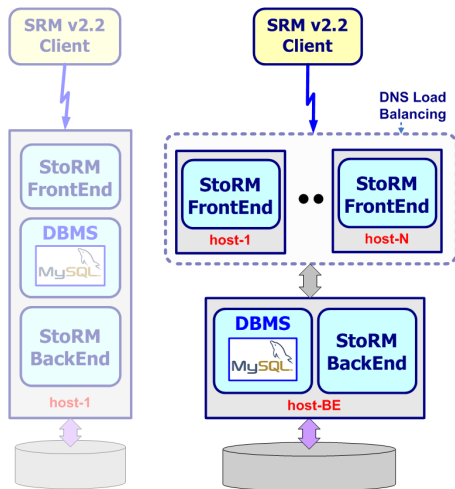
Deployment layouts

- All-in-one installation suitable for small site
- Scaling the number of FE's on the load expected
- Distribute MySQL in case of high performance required



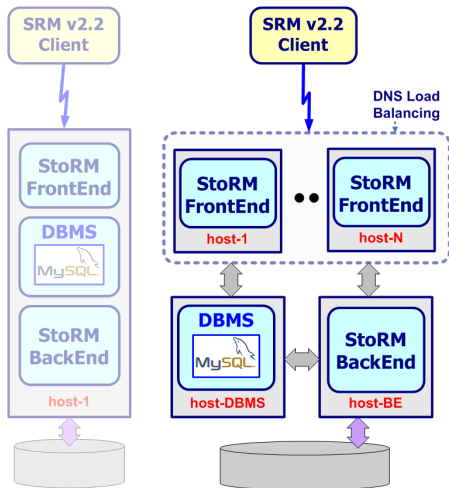
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StoRM 1.4.0

New release includes:

- Improved **documentation** for service installation and configuration ([new StoRM guide in PDF](#)).
- Improved **FAQ** and troubleshooting in StoRM web site
- Authorization on Storage Area by user (DN and FQANs regex) and operation types to provide **space protection** (*complex work, tests on real use case needed*).
- Internal **GridFTP pool balancer**
- New Frontend thread pool manager
- Improved requests garbage collector
- Checksum support (Adler32)
- New installation directory structure and configuration files
- Changelog [here](#)

StoRM 1.4.x: Space Protection

Now, it is possible to define ACL on Storage Area

- Shortcuts are enabled, like:
 - EVERYONE: everyone with a valid proxy
- Make use of Regular Expression to define a set of:
 - DN - to define authz policy on Country or Organization.
 - "C=IT, O=*, OU=*, L=*, CN=*, DC=*"
 - FQAN - guidelines from "FQAN Wildcard" document (C.Witzig, EGEE)
 - "/atlas/prod/Role=*"

StoRM 1.4.x: Internal Pool Balancer on GridFTP

- Definition of pool of GridFTP per Storage Area
- It is possible define balancing policies on pool of GridFTP
- Some policies:
 - ROUND ROBIN: we don't measure the workload of pool member, we rotate on it.
 - RANDOM: the load is distributed among the pool member in a random fashion.
 - WEIGHT: Each pool member has a weight, the load is distributed according to it.
 - FTP PROCESS MONITOR: The load is distributed depending on the FTP processes running each GridFTP server. The one with less processes is selected. The monitor of the process is based on Farm Management and Control (FMC) system.

StoRM 1.4.x: the short roadmap

We have some new features planned (ordered by priority)

- 1 Service effectiveness, stability and performance.
- 2 Service usability (e.g. administration tools)
- 2 Tape support with GPFS and TSM
- 3 Integration with a Notification mechanism
 - Starting a collaboration with LB team (A.Krenek)

StoRM 1.4.x: Service Effectiveness, Performance

- Support for SSL session caching
 - or other tricks to bypass GSI bottleneck
- Minor updates of the latest release of StoRM
- Bugfixing and minor enhancements
 - we follow users requirements and feedbacks
- SL5 support

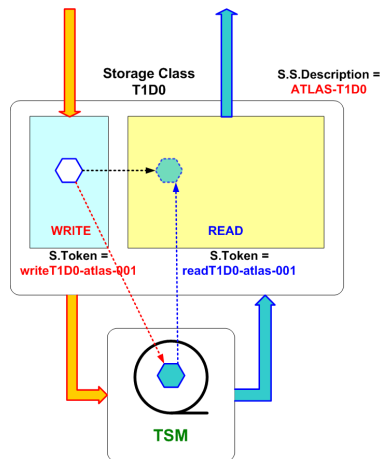
StoRM 1.4.x: Usability

- Improve the documentation
- StoRM administration facilities
 - Command line tools to manage StoRM configuration (namespace.xml)
- StoRM monitoring service

StoRM 1.5.x: Tape support and Space Selection

Support for a hierarchical solution with GPFS and TSM.

- Logic separation between "Staging and Recall buffers"
- User could (eventually) specifies the target Storage Area (token) for Recall operations
- Storage Area will be protected in terms of Authorization and Quota



StoRM R&D: Notification mechanism

Study, design and develop a "Proof of Concept" to avoid a "*storm*" of Status requests.

- In SRM there are asynchronous requests.
- Clients query the SRM service to retrieve the Status of that requests.
- The idea is to use a notification mechanism.
- Starting a collaboration with A.Krenek (LB component)

Decrease the need of support

- A new major release of StoRM is came out.
- We expect a peak in requests for support
- In order to decrease the support need, we're focusing our efforts on:
 - improvement of the documentation
 - improvement of StoRM web site (FAQ and troubleshooting section)
 - invite people to join to the storm-user community
 - train new users (SRM school (INFN) soon)
 - invite people to read/examine the documentation, FAQ and storm-user ML archive
- but, if you really need a support, you are welcome!

How obtain support

- Use the Support Unit (SU) "StoRM" in GGUS
- Send an email to the StoRM support mailing list

StoRM support mechanism

- Our support mechanism is organized in **two layer**:

first-level : INFN-Grid support team (IG-Release team)

second-level: Cluster of competent people, that includes:

- StoRM developer team
 - experts from IG-Release team
 - experts from T1-CNAF
 - Other experts (V.Vagnoni)
- but there is a univocal access point:
 - the **storm-support mailing list** (via SU "StoRM" in GGUS or direct emails).

Join to StoRM

- StoRM web site documentation [[link](#)]
- storm-support@cnaif.infn.it
 - is the official mailing list dedicated to the low level support.
 - is moderated.
- storm-user@cnaif.infn.it
 - is the official mailing list dedicated to StoRM user community.
 - to share information and to receive news about the StoRM project.



Questions?