Contribution ID: **126**   Type: **not specified**

T-StoRM: a StoRM testing framework

Wednesday, 28 March 2012 16:30 (30 minutes)

Description of the Work

T-StoRM has been designed considering the need of the StoRM team including utilities' libraries and structuring code for test categories. It verifies StoRM's SRM implementation by using all SRM clients, such as lcg-, *srm*, clientSRM. Furthermore, it provides a set of atomics tests that can be arbitrarily arranged to build more complex tests. T-StoRM's workplan is planning to extend the current framework in order to the set-up a virtual environment where the downloading and installation of the packages, the configuration of the services and the tests execution are orchestrated by a proper deployment and test engine fed with a pre-built configuration file. The usage of virtualization technologies will allow T-StoRM to enhance testing flexibility, provide dynamic on-demand resources, to greatly simplify the use of the test-bed, and to optimize the usage of test-bed machines.

Moreover, virtual images, with the required Operating System version, including host certificate when necessary, will be started automatically before running tests. Running automated tests will contribute to being effective and accurate, and to reducing time consuming.

Conclusions

T-StoRM is being used by the StoRM team for testing, validation and verification activities. However, it is not peculiar for StoRM and can be easily customized for other software team who just needs to provide configuration file and virtual images for the deployment and test engine.

Impact

A variety of people can profit with the adoption of T-StoRM. People involved in testing StoRM can benefit because of the amounts of tests already included in the framework and the set of developed facilities to optimize testing activity. StoRM developers can receive the notification of issues quickly and react tempestively. Furthermore, administrators of sites that deploy StoRM can evaluate the StoRM instances easily.

Overview (For the conference guide)

StoRM, an implementation of the SRM interface, is a multi-service software subject to intense testing, validation and verification activities in order to guarantee high-quality services. Its characteristics of being usable on different file systems and of supporting several transfer protocols raise the need of

StoRM to be validated on a variety of deployment scenarios with multiple machines. With this in mind, T-StoRM is a StoRM testing framework
that aims at improving and automating service evaluation. It provides several abstract support classes that can simplify writing test suites, which are logical group of similar test cases amongst installation, configuration, conformance, system, regression and stress categories. Such solution addresses the need of improving software development life cycle and optimizing the deployment of a new software release. In this paper, we describe the design and development of T-StoRM, and we present its usage
during the StoRM development life cycle.

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Session Classification: EMI: Quality Assurance of software