VISHNU - TMS - Tests report

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	TITLE : VISHNU - TMS - Tests report		
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WRITTEN BY	Benjamin Isnard, Daouda Traoré, Eugène Pamba Capo-Chichi, Kevin Coulomb, and Ibrahima Cissé	May 2011	

REVISION HISTORY			
NUMBER	DATE	DESCRIPTION	NAME
1	05/05/2011	Deliverable version	SYSFERA SAS
2	22/12/2011	Add tests for T1.1-B2 and T1.1-B3	SYSFERA SAS
3	18/01/2012	Add tests for T1.2-B, T2.8-B and T2.4-B2	SYSFERA SAS
4	14/03/2012	Merge of this report with SLURM tests report	SYSFERA SAS
5	15/03/2012	Added LSF tests report	SYSFERA SAS

Contents

Chapter 1

Introduction

Author of the test code : Ibrahima CISSE

Author of the test report : Eugène PAMBA CAPO-CHICHI

Author of the SLURM and LSF tests report : Daouda TRAORE

The tests which follows have been done in the following environment:

- Database used for TORQUE and SLURM: PostgreSQL 8.4
- Database used for LSF: mysql 14.14
- OS used for the TORQUE and SLURM tests: Ubuntu 10.10
- OS used for the LSF test: CentOS 6.2
- Cmake version for TORQUE test: V2.6
- Cmake version for SLURM and LSF tests: V2.8
- gcc version for TORQUE: V4.3.3
- gcc version for SLURM: V4.4.5
- gcc version for LSF: V4.4.6
- DIET version for TORQUE: V2.6.1
- DIET version for SLURM and LSF: V2.7
- Batch schedulers : TORQUE V2.5, SLURM V2.2.1, LSF 7.0.6
- RAM memory : 4Gb

Chapter 2

Functional tests

2.1 T1.1 - Submit a job

API command: submitJob

ID test	Description of the test cases	Output expected	Output gotten	Error
T1.1-B	Normal execution of submitJob	The job identifier is returned	The job identifier is returned	0
T1.1-B2	Normal execution of submitJob	The job output environment variables are returned	The job output environment variables are returned	0
T1.1-B3	Normal execution of submitJob	The job option working directory is correctly set	The job option working directory is correctly set	0
T1.1-E1	Bad session key	VishnuException	VishnuException	0
T1.1-E2	Bad machine Identifier	VishnuException	VishnuException	0
T1.1-E3	Bad script content	VishnuException	VishnuException	0
T1.1-E4	Bad script path	VishnuException	VishnuException	0

2.2 T1.2 - Automatic Submit a job

API command: submitJob

ID test	Description of the test cases	Output expected	Output gotten	Error
T1.2-B	Normal execution of automatic submitJob	The job identifier is returned	The job identifier is returned	0
T1.2-E1	The user has not an account on any machines	VishnuException	VishnuException	0

2.3 T2.2 - Cancel a job

API command: cancelJob

ID test	Description of the test cases	Output expected	Output gotten	Error
T2.2-B	Normal execution of cancelJob	The job is cancelled	The job is cancelled	0
T2.2-E1	Bad session key	VishnuException	VishnuException	0
T2.2-E2	Bad machine Identifier	VishnuException	VishnuException	0
T2.2-E3	Bad job identifier	VishnuException	VishnuException	0

ID test	Description of the test cases	Output expected	Output gotten	Error
T2.2-E4	Job canceling by a user who is not an administrator and not the owner of the job	VishnuException	VishnuException	0

2.4 T2.1 - Get job information

API command: getJobInfo

ID test	Description of the test cases	Output expected	Output gotten	Error
T2.1-B	Normal execution of getJobInfo	The job object is returned	The job object is returned	0
T2.1-E1	Bad session key	VishnuException	VishnuException	0
T2.1-E2	Bad machine Identifier	VishnuException	VishnuException	0
T2.1-E3	Bad job identifier	VishnuException	VishnuException	0

2.5 T2.5 - Get jobs progression

API command: getJobProgress

ID test	Description of the test cases	Output expected	Output gotten	Error
T2.5-B	Normal execution of getJobProgress	The job progression object is returned	The job progression object is returned	0
T2.5-E1	Bad session key	VishnuException	VishnuException	0
T2.5-E2	Bad machine Identifier	VishnuException	VishnuException	0
T2.5-E3	Bad job identifier	VishnuException	VishnuException	0

Remarks T2.5-B : when the job is not on running state, there is no progression.

2.6 T2.6 - Get one job outputs

API command: getJobsOutput

ID test	Description of the test cases	Output expected	Output gotten	Error
T2.6-B	Normal execution of getJobsOutput	The job output files are returned	The job output files are returned	0
T2.6-E1	Bad session key	VishnuException	VishnuException	0
T2.6-E2	Bad machine Identifier	VishnuException	VishnuException	0
T2.6-E3	Bad job identifier	VishnuException	VishnuException	0
T2.6-E4	Identifier of job not terminated	VishnuException	VishnuException	0

2.7 T2.7 - Get all completed jobs outputs

API command: getCompletedJobsOuput

ID test	Description of the test cases	Output expected	Output gotten	Error
T2.7-B	Normal execution of getCompletedJobsOuput	The job output files of all completed jobs are returned	The job output files of all completed jobs are returned	0
T2.7-E1	Bad session key	VishnuException	VishnuException	0

ID test	Description of the test cases	Output expected	Output gotten	Error
T2.7-E2	Bad machine Identifier	VishnuException	VishnuException	0

Remarks T2.7-B : there is a failure when the script's execution is very fast (under one seconds).

2.8 T2.3 - List job queues

API command: listQueues

ID test	Description of the test cases	Output expected	Output gotten	Error
T2.3-B	Normal execution of listQueues	The list of queues is returned	The list of queues is returned	0
T2.3-E1	Bad session key	VishnuException	VishnuException	0
T2.3-E2	Bad machine Identifier	VishnuException	VishnuException	0

Remarks T2.3-B : to make this test, you must have administrator rights on the batch scheduler for adding a new queue.

2.9 T2.4 - List jobs

API command: listJobs

ID test	Description of the test cases	Output expected	Output gotten	Error
T2.4-B	Normal execution of listJobs	The list of jobs is returned	The list of jobs is returned	0
T2.4-E1	Bad session key	VishnuException	VishnuException	0
T2.4-E2	Bad machine Identifier	VishnuException	VishnuException	0

2.10 T2.4-B2 - List batch jobs

API command: listJobs

ID test	Description of the test cases	Output expected	Output gotten	Error
T2.4-B	Normal execution of list batch Jobs	The list of batch jobs is returned	The list of batch jobs is returned	0
T2.4-E1	Bad session key	VishnuException	VishnuException	0
T2.4-E2	Bad machine Identifier	VishnuException	VishnuException	0

2.11 T2.8 - List jobs on all machines

API command: listJobs

ID test	Description of the test cases	Output expected	Output gotten	Error
T2.8-B	Normal execution of list Jobs on all machines	The list of jobs on all machines is returned	The list of jobs on all machines is returned	0
T2.8-E1	Bad session key	VishnuException	VishnuException	0

Chapter 3

Stress tests

ID test	Date	Test description	Command(s) tested	Results
STR-SERV-DOWN	TORQUE: 05/05/11 SLURM: 09/08/11 LSF: 20/03/12	The tms sed is stopped and restarted	submitJob	Success - normal job submission
STR-AGENT-DOWN	TORQUE: 05/05/11 SLURM: 09/08/11 LSF: 20/03/12	The SysFera-DS Agent is stopped and restarted		failure
STR-BATCH-DOWN	TORQUE: 05/05/11 SLURM: 09/08/11 LSF: 20/03/12	The batch scheduler is stopped and the command submitJob is launched	submitJob	Success - the corresponding error message is returned

Chapter 4

Load tests

ID test	Date	Test description	Command(s) tested	Results
LOAD-2.1-submitJob	TORQUE: 05/05/11 SLURM: 09/08/11 LSF: 20/03/12	Simultaneous launch of 100 commands	submitJob	Success - normal execution of all commands launched
LOAD-2.1-listJobs	TORQUE: 05/05/11 SLURM: 09/08/11 LSF: 20/03/12	Success - Simultaneous launch of 100 commands	listJobs	Success - normal execution of all commands launched
LOAD-2.1-listQueues	TORQUE: 05/05/11 SLURM: 09/08/11 LSF: 20/03/12	Simultaneous launch of 100 commands	listQueues	Success - normal execution of all commands launched

LOAD-2.1-submitJob : To allow 100 simultaneous ssh connexion, we have changed the default value of *MaxStartups* to *50:50:200* in /etc/ssh/sshd_config.

Chapter 5

Performance tests for TORQUE

ID test	Test description	Command(s) tested	VISHNU execution time	SSH execution time	Results
CDP-3.1-submitJob	comparison with " ssh localhost qsub "	submitJob	0,30s	0,17s	Failure
CDP-3.1-cancelJob	comparison with " ssh localhost qsub "	cancelJob	0,25s	0,21s	Failure
CDP-3.1-listJobs	comparison with " ssh localhost qstat "	listJobs	0,08s	0,17s	Success
CDP-3.2.1-listQueues	execution time less than "ssh localhost qstat -Q"	listQueues	0,10s	0,16s	Success

ID test	Test description	Command(s) tested	Memory comsumption	Results
CDP-3.2.2-submitJob	memory consumption	submitJob	0,8% of the RAM memory	Success
CDP-Memserver	Memory consumption of tms server running during 24 hours	tms server	0,7% of the RAM memory	Success

Chapter 6

Performance tests for SLURM

ID test	Test description	Command(s) tested	VISHNU execution time	SSH execution time	Results
CDP-3.1-submitJob	comparison with " ssh localhost sbatch "	submitJob	0,28s	0,18s	Failure
CDP-3.1-cancelJob	comparison with " ssh localhost scancel "	cancelJob	0,36s	0,18s	Failure
CDP-3.1-listJobs	comparison with " ssh localhost squeue "	listJobs	0,09s	0,18s	Success
CDP-3.2.1-listQueues	execution time less than "ssh localhost scontrol show partition"	listQueues	0,09s	0,17s	Success

ID test	Test description	Command(s) tested	Memory comsumption	Results
CDP-3.2.2-submitJob	CPU consumption	submitJob	5% of the CPU used	Success
CDP-Memserver	Memory consumption of tms server running during 24 hours	tms server	0,5% of the RAM memory	Success

Chapter 7

Performance tests for LSF

ID test	Test description	Command(s) tested	VISHNU execution time	SSH execution time	Results
CDP-3.1-submitJob	comparison with " ssh localhost sbatch "	submitJob	1,05s	0,82s	Failure
CDP-3.1-cancelJob	comparison with " ssh localhost scancel "	cancelJob	0,95s	0,82s	Failure
CDP-3.1-listJobs	comparison with " ssh localhost squeue "	listJobs	0,10s	0,80s	Success
CDP-3.2.1-listQueues	execution time less than "ssh localhost scontrol show partition"	listQueues	0,10s	0,85s	Success

ID test	Test description	Command(s) tested	Memory comsumption	Results
CDP-3.2.2-submitJob	CPU consumption	submitJob	5% of the CPU used	Success
CDP-Memserver	Memory consumption of tms server running during 24 hours	tms server	0,5% of the RAM memory	Success