# VISHNU - SLURM - Tests report

| COLLABORATORS | | |
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| | *TITLE* :<br><br>VISHNU - SLURM - Tests report | |
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| *ACTION* | *NAME* | *DATE* | *SIGNATURE* |
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| REVISION HISTORY | | | |
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| NUMBER | DATE | DESCRIPTION | NAME |
|---|---|---|---|
| 1 | 09/08/2011 | Deliverable version | SYSFERA SAS |
| 2 | 22/12/2011 | Add tests for T1.1-B2 and T1.1-B3 | SYSFERA SAS |

# Contents

# Chapter 1

# Introduction

Author of the test code : Ibrahima CISSE and Daouda Traoré

Author of the test report : Daouda Traoré

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

- Database used : PostgreSQL 8.4

- OS used for the test : Ubuntu 10.10

- Cmake version : V2.6

- gcc version : V4.3.3

- DIET version : V2.7.1

- Batch scheduler : SLURM V2.2.1

- 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   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 |
| T2.2-E4 | Job canceling by a user who is not an administrator and not the owner of the job | VishnuException | VishnuException | 0 |

## 2.3   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 |

| ID test | Description of the test cases | Output expected | Output gotten | Error |
|---------|------------------------------|-----------------|---------------|-------|
| 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 |

## 2.4  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.

## 2.5  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 |

## 2.6  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 |
| T2.7-E2 | Bad machine Identifier | VishnuException | VishnuException | 0 |

## 2.7  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 |

| ID test | Description of the test cases | Output expected | Output gotten | Error |
|---------|------------------------------|-----------------|---------------|-------|
| 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.

## 2.8 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 |

# Chapter 3

# Stress tests

| ID test | Date | Test description | Command(s) tested | Results |
|---------|------|------------------|-------------------|---------|
| STR-SERV-DOWN | 09/08/11 | The tms sed is stopped and restarted | submitJob | Success - normal job submission |
| STR-AGENT-DOWN | 09/08/11 | The SysFera-DS Agent is stopped and restarted | | failure |
| STR-BATCH-DOWN | 09/08/11 | 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 | 09/08/11 | Simultaneous launch of 100 commands | submitJob | Success - normal execution of all commands launched |
| LOAD-2.1-listJobs | 09/08/11 | Success - Simultaneous launch of 100 commands | listJobs | Success - normal execution of all commands launched |
| LOAD-2.1-listQueues | 09/08/11 | 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

| 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 |