

# **VISHNU - SLURM - Tests report**



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# Chapter 1

## Introduction

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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-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     |
| 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     |
| 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 |

## 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 consumption     | 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        | 0,7% of the RAM memory | Success |