

# **VISHNU - IMS - 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 : V2.6.1
  - Batch scheduler : TORQUE V2.5
  - RAM memory : 2Gb
-

## Chapter 2

# Functional tests

### 2.1 I2-B: Get metric data

API command: *getMetricHistory*

| ID test | Description of the test cases        | Output expected                           | Output gotten                             | Error |
|---------|--------------------------------------|---|---|-------|
| I2-B    | Normal execution of getMetricHistory | The list of FREEMEMORY metric is returned | The list of FREEMEMORY metric is returned | 0     |
| I2-E1   | Bad machine Identifier               | VishnuException                           | VishnuException                           | 0     |
| I2-E2   | Bad metric type                      | VishnuException                           | VishnuException                           | 0     |

### 2.2 I4-B: Get data on the infrastructure

API command: *getMetricCurrentValue*

| ID test | Description of the test cases             | Output expected                                 | Output gotten                                   | Error |
|---------|---|---|---|-------|
| I4-B    | Normal execution of getMetricCurrentValue | The list of current value of metric is returned | The list of current value of metric is returned | 0     |

### 2.3 IA2.1-B: Get a system load threshold

API command: *getSystemThreshold*

| ID test  | Description of the test cases  | Output expected                                       | Output gotten   | Error |
|----------|--|---|---|-------|
| IA2.1-B  | Normal execution of getSystemThreshold                               | The threshold of the metric FREEDISKSPACE is returned | The threshold of the metric FREEDISKSPACE is returned | 0     |
| IA2.1-E1 | Bad machine Identifier   | VishnuException                                       | VishnuException                                       | 0     |
| IA2.1-E2 | Bad metric value   | VishnuException                                       | VishnuException                                       | 0     |
| IA2.1-E3 | getSystemThreshold is launched by a user who is not an administrator | VishnuException                                       | VishnuException                                       | 0     |

## 2.4 IA2-B[1-3]: Define a system load threshold (CPUUSE, FREE\_DISK\_SPACE and FREE\_MEMORY)

API command: *setSystemThreshold*

| ID test    | Description of the test cases  | Output expected                                   | Output gotten                                     | Error |
|------------|--|---|---|-------|
| IA2-B[1-3] | Normal execution of setSystemThreshold                               | The threshold for the corresponding metric is set | The threshold for the corresponding metric is set | 0     |
| IA2-E1     | Bad machine Identifier   | VishnuException                                   | VishnuException                                   | 0     |
| IA2-E2     | Bad metric value   | VishnuException                                   | VishnuException                                   | 0     |
| IA2-E3     | getSystemThreshold is launched by a user who is not an administrator | VishnuException                                   | VishnuException                                   | 0     |

## 2.5 I1-B: Get the update frequency

API command: *getUpdateFrequency*

| ID test | Description of the test cases          | Output expected                        | Output gotten                          | Error |
|---------|--|--|--|-------|
| I1-B    | Normal execution of getUpdateFrequency | The update frequency value is returned | The update frequency value is returned | 0     |

## 2.6 IA6-B: Set the update frequency

API command: *setUpdateFrequency*

| ID test | Description of the test cases  | Output expected                   | Output gotten                     | Error |
|---------|--|-----------------------------------|-----------------------------------|-------|
| IA6-B   | Normal execution of setUpdateFrequency                               | The update frequency value is set | The update frequency value is set | 0     |
| IA6-E1  | The frequency is zero  | VishnuException                   | VishnuException                   | 0     |
| IA6-E2  | The frequency is negative  | VishnuException                   | VishnuException                   | 0     |
| IA2-E3  | setUpdateFrequency is launched by a user who is not an administrator | VishnuException                   | VishnuException                   | 0     |

## 2.7 IA3-B: Define User/Machine/Job/FileTransfer identifier

API command: *define[User|Machine|Job|Transfer]Identifier*

| ID test | Description of the test cases  | Output expected                     | Output gotten                       | Error |
|---------|--|-------------------------------------|-------------------------------------|-------|
| IA3-B   | Normal execution of define[User Machine Job]Identifier                               | The corresponding identifier is set | The corresponding identifier is set | 0     |
| IA3-E1  | Bad format identifier  | VishnuException                     | VishnuException                     | 0     |
| IA3-E2  | define[User Machine Job]Identifier is launched by a user who is not an administrator | VishnuException                     | VishnuException                     | 0     |

**Remarks IA3-B :** In this version of tests, only define[User|Machine|Job]Identifier is tested.

## 2.8 I5-B: Get system info

API command: *getSystemInfo*

| ID test | Description of the test cases     | Output expected  | Output gotten  | Error |
|---------|-----------------------------------|--|--|-------|
| I5-B    | Normal execution of getSystemInfo | The system information (disk space and memory) is returned | The system information (disk space and memory) is returned | 0     |
| I5-E1   | Bad machine Identifier            | VishnuException  | VishnuException  | 0     |

## 2.9 IA5-B: Set system info

API command: *setSystemInfo*

| ID test | Description of the test cases                                   | Output expected   | Output gotten   | Error |
|---------|---|---|---|-------|
| IA5-B   | Normal execution of setSystemInfo                               | The memory and the disk space of the corresponding machine is set | The memory and the disk space of the corresponding machine is set | 0     |
| IA5-E1  | Bad machine Identifier  | VishnuException   | VishnuException   | 0     |
| IA5-E2  | Bad metric value (negative memory and disk space)               | VishnuException   | VishnuException   | 0     |
| IA5-E3  | setSystemInfo is launched by a user who is not an administrator | VishnuException   | VishnuException   | 0     |

## 2.10 IA1-B: Get the running processes

API command: *getProcesses*

| ID test | Description of the test cases                                  | Output expected                           | Output gotten                             | Error |
|---------|--|---|---|-------|
| IA5-B   | Normal execution of getProcesses                               | The list of running processes is returned | The list of running processes is returned | 0     |
| IA5-E1  | Bad machine Identifier   | VishnuException                           | VishnuException                           | 0     |
| IA5-E2  | getProcesses is launched by a user who is not an administrator | VishnuException                           | VishnuException                           | 0     |

## 2.11 IA4.1-B: Load scheduling

API command: *loadShed*

| ID test                    | Description of the test cases                       | Output expected  | Output gotten  | Error |
|----------------------------|---|--|--|-------|
| IA5-B Soft Load scheduling | Normal execution of loadShed with LoadShedType SOFT | The jobs launched on the corresponding batch scheduler are stopped | The jobs launched on the corresponding batch scheduler are stopped | 0     |
| IA5-B Hard Load scheduling | Normal execution of loadShed with LoadShedType HARD | All VISHNU elements are stopped                                    | All VISHNU elements are stopped                                    | 0     |

**Remarks IA5-B Hard Load scheduling :** It has been tested manually with a remote machine.



## 2.12 IA9-B: Restart

API command: restart

| ID test | Description of the test cases | Output expected          | Output gotten            | Error |
|---------|-------------------------------|--------------------------|--------------------------|-------|
| IA9-B   | Normal execution of restart   | The sed UMS is restarted | The sed UMS is restarted | 0     |

**Remarks IA9-B Restart:** It works locally but there is a problem when we restart processes on a remote machine.

## 2.13 IA9-B: Stop

API command: stop

| ID test | Description of the test cases                          | Output expected                              | Output gotten                                | Error |
|---------|--|--|--|-------|
| IA9-B   | Normal execution of stop                               | The sed UMS on the remote machine is stopped | The sed UMS on the remote machine is stopped | 0     |
| IA9-E1  | Bad machine Identifier                                 | VishnuException                              | VishnuException                              | 0     |
| IA9-E2  | The remote process to stop is unknown                  | VishnuException                              | VishnuException                              | 0     |
| IA9-E3  | stop is launched by a user who is not an administrator | VishnuException                              | VishnuException                              | 0     |

**Remarks IA9-B Stop :** It has been tested manually with a remote machine.

## 2.14 I3-B: Export and replay commands

API command: exportCommands

| ID test | Description of the test cases      | Output expected   | Output gotten   | Error |
|---------|------------------------------------|---|---|-------|
| I3-B    | Normal execution of exportCommands | The commands launched within an old session is exported | The commands launched within an old session is exported | 0     |
| I3-E1   | Bad old session Identifier         | VishnuException   | VishnuException   | 0     |
| I3-E2   | Bad file path                      | VishnuException   | VishnuException   | 0     |

## Chapter 3

### Stress tests

| ID test        | Date     | Test description                              | Command(s) tested  | Results   |
|----------------|----------|---|--------------------|---|
| STR-SERV-DOWN  | 06/06/11 | The ims sed is stopped and restarted          | setUpdateFrequency | Success - normal update frequency setting             |
| STR-AGENT-DOWN | 06/06/11 | The SysFera-DS Agent is stopped and restarted |                    | failure   |
| STR-DB-DOWN    | 06/06/11 | The VISHNU database is stopped and restarted  | getUpdateFrequency | Success - the corresponding error message is returned |

## Chapter 4

### Load tests

| ID test                            | Date     | Test description                                    | Command(s) tested     | Results   |
|------------------------------------|----------|---|-----------------------|---|
| LOAD-2.1-<br>getMetricCurrentValue | 06/06/11 | Simultaneous launch<br>of 100 commands              | getMetricCurrentValue | Success - normal<br>execution of all<br>commands launched |
| LOAD-2.1-<br>getMetricHistory      | 06/06/11 | Success -<br>Simultaneous launch<br>of 100 commands | getMetricHistory      | Success - normal<br>execution of all<br>commands launched |

## Chapter 5

### Performance tests

| ID test                       | Test description                     | Command(s) tested     | VISHNU execution time | SSH execution time | Results |
|-------------------------------|--------------------------------------|-----------------------|-----------------------|--------------------|---------|
| CDP-3.1-getMetricCurrentValue | comparison with " ssh host ps -efl " | getMetricCurrentValue | 0,156s                | 0,280s             | Success |
| CDP-3.1-getMetricHistory      | comparison with " ssh host ps -efl " | getMetricHistory      | 0,116s                | 0,280s             | Success |

| ID test                         | Test description   | Command(s) tested     | Consumption     | Results |
|---------------------------------|--|-----------------------|-----------------|---------|
| CDP-3.2.1-getMetricCurrentValue | memory consumption less than 500 Mb                      | getMetricCurrentValue | 1,3% of the RAM | Success |
| CDP-3.2.1-getMetricHistory      | memory consumption less than 500 Mb                      | getMetricHistory      | 1,6% of the RAM | Sucess  |
| CDP-3.2.2-getMetricCurrentValue | CPU consumption less than 10%                            | getMetricCurrentValue | 0,7% of the CPU | Sucess  |
| CDP-3.2.2-getMetricHistory      | CPU consumption less than 10%                            | getMetricHistory      | 0,7% of the CPU | Sucess  |
| CDP-Memserver                   | Memory consumption of ims server running during 24 hours | ims server            | 1,1% of the RAM | Sucess  |