

## **D1.1d - VISHNU Command-line interface specifications**



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	<i>TITLE :</i>  D1.1d - VISHNU Command-line interface specifications		
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# Chapter 1

## Document presentation

### 1.1 Document objectives

This document presents the detailed specifications of the VISHNU command line user interface. These specifications include the definition of all commands including administration commands.

### 1.2 Document structure

The document is divided into 4 parts corresponding to the 4 modules that compose the Vishnu system:

- UMS: Users Management Service
- TMS: Tasks Management Service
- FMS: Files Management Service
- IMS: Information Management Service

Each module corresponds to a chapter in the document, and each chapter contains the following sections:

- A first section describing the definition of all commands provided by the package.
- A second section describing the definition of all enumerated values used as command parameters.

### 1.3 References

- D1.1a : VISHNU General specifications

### 1.4 Glossary

- VISHNU admin: any user having the administrator privilege
-

## 1.5 Generic command definition format

This section presents the generic format used in the following chapters to describe the commands. It also details the environment variables required and the user options.

A commands is defined as follows:

### Access

Here is detailed the access level of the command line (i.e. the privilege required to use this command)

### Description

Here is detailed the purpose of the command line.

### Example of use

Here is detailed an example of the use of the command line which starts by optional arguments preceded by a short letter and the required arguments at the end.

myCommand -l acLogin -s sshKeyPath userId

### Parameters

The following table contains all the input arguments of the command with their type and description, their short letter for options and a required flag.

Parameter	Type	Option	Description	Required
userId	string		This is an example of a required argument	YES
acLogin	string	l	This is an example of an optional argument	NO
sshKeyPath	string	s	This is an example of an optional argument	NO

The following table contains the list of environment variables information, a required flag and a user option flag. When the user option flag is true, the environment variable can be defined as a user option stored in the database.

### Environment variables

Name	Parameter	Type	Description	Required	User option
VISHNU_SESSION_KEY	sessionKey	string	This is an example of an environment variable	YES	NO

### Note:

For each command line the -h option can be used for help.

## 1.6 Environment variables and options

Here is detailed the way to use the user options which are stored in the database and environment variables in VISHNU.

---

**Example 1.1** Pseudo code

---

```
if (the option is provided in the command line) {
    optionValue = option
} else {
    if (an environment variable exists) {
        optionValue = EnVariable_Value

    } else {

        if (a value has been defined in the user configuration) {
            optionValue = user_Option
        }
        else {
            //The default value of the option defined by VISHNU admin is used
            optionValue = defaultValueOption
        }
    }
}
```

---



## Chapter 2

# Commands specification for User Management Service (UMS)

### 2.1 Command definitions

#### 2.1.1 vishnu\_connect

##### Access

This command line can be used by any VISHNU user

##### Description

The vishnu\_connect command opens a session

##### Example of use

```
vishnu_connect [-p closePolicy] [-d sessionInactivityDelay] [-s substituteUserId] userId
```

##### Parameters

Parameter	Type	Option	Description	Required
userId	string		userId represents the VISHNU user identifier	YES
password	string		password represents the password of the user, it is an interactive parameter	YES
closePolicy	SessionCloseType	p	is an option for closing session automatically	NO
sessionInactivityDelay	int	d	is the maximum delay in seconds between two user requests when the CLOSE_ON_TIMEOUT policy is set	NO
substituteUserId	string	s	is an admin option which allows an admin to open a session as if she was another user identified by her userId	NO

##### Environment variables

This command defines no environment variables.

#### 2.1.2 vishnu\_reconnect

##### Access

This command line can be used by any VISHNU user

## Description

The vishnu\_reconnect command reconnects to a session that is still active

## Example of use

```
vishnu_reconnect userId sessionId
```

## Parameters

Parameter	Type	Option	Description	Required
userId	string		userId represents the VISHNU user identifier	YES
password	string		password represents the password of the user, it is an interactive parameter	YES
sessionId	string		sessionId is the identifier of the session defined in the database	YES

## Environment variables

This command defines no environment variables.

### 2.1.3 vishnu\_add\_user

#### Access

This command line can be used by ADMIN users only

#### Description

The vishnu\_add\_user command adds a new VISHNU user

#### Example of use

```
vishnu_add_user firstname lastname privilege email
```

#### Parameters

Parameter	Type	Option	Description	Required
firstname	string		is the firstname of the user	YES
lastname	string		is the lastname of the user	YES
privilege	PrivilegeType		is the privilege of the user (admin or simple user)	YES
email	string		is the email of the user	YES

## Environment variables

Name	Parameter	Type	Description	Required	User option
VISHNU_SESSION_KEY	sessionKey	string	The sessionKey is the encrypted identifier of the session generated by VISHNU	YES	NO

### 2.1.4 vishnu\_update\_user

#### Access

This command line can be used by ADMIN users only

#### Description

The vishnu\_update\_user command updates the user information except the userId and the password

**Example of use**

```
vishnu_update_user [-f firstname] [-l lastname] [-p privilege] [-m email] [-s status] userId
```

**Parameters**

Parameter	Type	Option	Description	Required
userId	string		represents the VISHNU user identifier	YES
firstname	string	f	represents the updated firstname of the user	NO
lastname	string	l	represents the updated lastname of the user	NO
privilege	PrivilegeType	p	represents the updated privilege of the user	NO
email	string	m	represents the updated email adress of the user	NO
status	StatusType	s	represents the status of the user (LOCKED or ACTIVE)	NO

**Environment variables**

Name	Parameter	Type	Description	Required	User option
VISHNU_SESSION_KEY	sessionKey	string	The sessionKey is the encrypted identifier of the session generated by VISHNU	YES	NO

**2.1.5 vishnu\_delete\_user****Access**

This command line can be used by ADMIN users only

**Description**

The vishnu\_delete\_user command removes a user from VISHNU

**Example of use**

```
vishnu_delete_user userId
```

**Parameters**

Parameter	Type	Option	Description	Required
userId	string		userId represents the VISHNU user identifier of the user who will be deleted from VISHNU	YES

**Environment variables**

Name	Parameter	Type	Description	Required	User option
VISHNU_SESSION_KEY	sessionKey	string	The sessionKey is the encrypted identifier of the session generated by VISHNU	YES	NO

**2.1.6 vishnu\_close****Access**

This command line can be used by any VISHNU user

### Description

The vishnu\_close command closes the session

### Example of use

```
vishnu_close
```

### Parameters

This command defines no arguments.

### Environment variables

Name	Parameter	Type	Description	Required	User option
VISHNU_SESSION_KEY	sessionKey	string	The sessionKey is the encrypted identifier of the session generated by VISHNU	YES	NO

## 2.1.7 vishnu\_change\_password

### Access

This command line can be used by any VISHNU user

### Description

The vishnu\_change\_password command changes the password

### Example of use

```
vishnu_change_password userId
```

### Parameters

Parameter	Type	Option	Description	Required
userId	string		userId represents the VISHNU user identifier	YES
password	string		password represents the password of the user, it is an interactive parameter	YES
passwordNew	string		passwordNew represents the new password of the user, it is an interactive parameter	YES

### Environment variables

This command defines no environment variables.

## 2.1.8 vishnu\_reset\_password

### Access

This command line can be used by ADMIN users only

### Description

The vishnu\_reset\_password command resets the password of a user

### Example of use

```
vishnu_reset_password userId
```

### Parameters

Parameter	Type	Option	Description	Required
userId	string		userId represents the VISHNU user identifier of the user whose password will be reset	YES

#### Environment variables

Name	Parameter	Type	Description	Required	User option
VISHNU_SESSION_KEY	sessionKey	string	The sessionKey is the encrypted identifier of the session generated by VISHNU	YES	NO

### 2.1.9 vishnu\_add\_local\_account

#### Access

This command line can be used by any VISHNU user

#### Description

The vishnu\_add\_local\_account command adds a new local user configuration

#### Example of use

```
vishnu_add_local_account userId machineId acLogin sshKeyPath homeDirectory
```

#### Parameters

Parameter	Type	Option	Description	Required
userId	string		The userId represents the VISHNU user identifier of the user of the local user configuration	YES
machineId	string		The MachineId represents the identifier of the machine associated to the local user configuration	YES
acLogin	string		accLogin represents the login of the user on the associated machine	YES
sshKeyPath	string		sshKeyPath is the path of the ssh key of the user on the associated machine	YES
homeDirectory	string		HomeDirectory is the path of the home directory of the user on the associated machine	YES

#### Environment variables

Name	Parameter	Type	Description	Required	User option
VISHNU_SESSION_KEY	sessionKey	string	The sessionKey is the encrypted identifier of the session generated by VISHNU	YES	NO

### 2.1.10 vishnu\_update\_local\_account

#### Access

This command line can be used by any VISHNU user

#### Description

The vishnu\_update\_local\_account command updates a local user configuration

**Example of use**

```
vishnu_update_local_account [-l acLogin] [-s sshKeyPath] [-d homeDirectory] userId machineId
```

**Parameters**

Parameter	Type	Option	Description	Required
userId	string		The userId represents the VISHNU user identifier of the user of the local user configuration	YES
machineId	string		The MachineId represents the identifier of the machine associated to the local user configuration	YES
acLogin	string	l	accLogin represents the login of the user on the associated machine	NO
sshKeyPath	string	s	sshKeyPath is the path of the ssh key of the user on the associated machine	NO
homeDirectory	string	d	HomeDirectory is the path of the home directory of the user on the associated machine	NO

**Environment variables**

Name	Parameter	Type	Description	Required	User option
VISHNU_SESSION_KEY	sessionKey	string	The sessionKey is the encrypted identifier of the session generated by VISHNU	YES	NO

**2.1.11 vishnu\_delete\_local\_account****Access**

This command line can be used by any VISHNU user

**Description**

The `vishnu_delete_local_account` command removes a local user configuration (for a given user on a given machine) from VISHNU

**Example of use**

```
vishnu_delete_local_account userId machineId
```

**Parameters**

Parameter	Type	Option	Description	Required
userId	string		userId represents the VISHNU user identifier of the user whose local configuration will be deleted for the given machine	YES
machineId	string		machineId represents the identifier of the machine whose local configuration will be deleted for the given user	YES

**Environment variables**

Name	Parameter	Type	Description	Required	User option
VISHNU_SESSION_KEY	sessionKey	string	The sessionKey is the encrypted identifier of the session generated by VISHNU	YES	NO

### 2.1.12 vishnu\_save\_configuration

#### Access

This command line can be used by ADMIN users only

#### Description

The vishnu\_save\_configuration command saves the configuration of VISHNU

#### Example of use

```
vishnu_save_configuration
```

#### Parameters

This command defines no arguments.

#### Environment variables

Name	Parameter	Type	Description	Required	User option
VISHNU_SESSION_KEY	sessionKey	string	The sessionKey is the encrypted identifier of the session generated by VISHNU	YES	NO

### 2.1.13 vishnu\_restore\_configuration

#### Access

This command line can be used by ADMIN users only

#### Description

The vishnu\_restore\_configuration command restores the configuration of VISHNU

#### Example of use

```
vishnu_restore_configuration filePath
```

#### Parameters

Parameter	Type	Option	Description	Required
filePath	string		The filePath is the path of the file used to restore VISHNU configuration	YES

#### Environment variables

Name	Parameter	Type	Description	Required	User option
VISHNU_SESSION_KEY	sessionKey	string	The sessionKey is the encrypted identifier of the session generated by VISHNU	YES	NO

### 2.1.14 vishnu\_add\_machine

#### Access

This command line can be used by ADMIN users only

#### Description

The vishnu\_add\_machine command adds a new machine in VISHNU

#### Example of use

```
vishnu_add_machine name site language sshPublicKeyFile
```

#### Parameters

Parameter	Type	Option	Description	Required
name	string		represents the name of the machine	YES
site	string		represents the location of the machine	YES
machineDescription	string		represents the description of the machine, it is an interactive parameter	YES
language	string		represents the language used for the description of the machine	YES
sshPublicKeyFile	string		contains the path to the SSH public key used by VISHNU to access local user accounts	YES

#### Environment variables

Name	Parameter	Type	Description	Required	User option
VISHNU_SESSION_KEY	sessionKey	string	The sessionKey is the encrypted identifier of the session generated by VISHNU	YES	NO

### 2.1.15 vishnu\_update\_machine

#### Access

This command line can be used by ADMIN users only

#### Description

The vishnu\_update\_machine command updates machine description

#### Example of use

```
vishnu_update_machine [-n name] [-s site] [-d ] [-l language] [-t status] [-k sshPublicKeyFile] machineId
```

#### Parameters

Parameter	Type	Option	Description	Required
machineId	string		represents the identifier of the machine	YES
name	string	n	represents the name of the machine	NO
site	string	s	represents the location of the machine	NO
machineDescription	string	d	represents the description of the machine, it is an interactive parameter	NO
language	string	l	represents the language used for the description of the machine	NO
status	StatusType	t	represents the status of the machine	NO
sshPublicKeyFile	string	k	contains the path to the SSH public key used by VISHNU to access local user accounts	NO



## Environment variables

Name	Parameter	Type	Description	Required	User option
VISHNU_SESSION_KEY	sessionKey	string	The sessionKey is the encrypted identifier of the session generated by VISHNU	YES	NO

### 2.1.16 vishnu\_delete\_machine

#### Access

This command line can be used by ADMIN users only

#### Description

The vishnu\_delete\_machine command removes a machine from VISHNU

#### Example of use

```
vishnu_delete_machine machineId
```

#### Parameters

Parameter	Type	Option	Description	Required
machineId	string		machineId represents the identifier of the machine	YES

## Environment variables

Name	Parameter	Type	Description	Required	User option
VISHNU_SESSION_KEY	sessionKey	string	The sessionKey is the encrypted identifier of the session generated by VISHNU	YES	NO

### 2.1.17 vishnu\_list\_local\_account

#### Access

This command line can be used by any VISHNU user

#### Description

The vishnu\_list\_local\_account command lists the local user configurations

#### Example of use

```
vishnu_list_local_account [-a ] [-u userId] [-i machineId]
```

#### Parameters

Parameter	Type	Option	Description	Required
adminListOption	boolean	a	is an admin option for listing all local configurations of all users	NO
userId	string	u	is an admin option for listing the local configurations of a specific user	NO
machineId	string	i	is an option for listing local user configurations on a specific machine	NO

**Environment variables**

Name	Parameter	Type	Description	Required	User option
VISHNU_SESSION_KEY	sessionKey	string	The sessionKey is the encrypted identifier of the session generated by VISHNU	YES	NO

**2.1.18 vishnu\_list\_machine****Access**

This command line can be used by any VISHNU user

**Description**

The vishnu\_list\_machine command lists the machines in which the local user configurations are defined for the given user

**Example of use**

```
vishnu_list_machine [-u userId] [-a ] [-m machineId]
```

**Parameters**

Parameter	Type	Option	Description	Required
userId	string	u	is an admin option for listing machines in which a specific user has a local configuration	NO
listAllmachine	boolean	a	is an option for listing all VISHNU machines	NO
machineId	string	m	is an option for listing information about a specific machine	NO

**Environment variables**

Name	Parameter	Type	Description	Required	User option
VISHNU_SESSION_KEY	sessionKey	string	The sessionKey is the encrypted identifier of the session generated by VISHNU	YES	NO

**2.1.19 vishnu\_list\_history\_cmd****Access**

This command line can be used by any VISHNU user

**Description**

The vishnu\_list\_history\_cmd command lists the commands

**Example of use**

```
vishnu_list_history_cmd [-a ] [-u userId] [-i sessionId] [-s startDateOption] [-e endDateOption]
```

**Parameters**

Parameter	Type	Option	Description	Required
adminListOption	boolean	a	is an admin option for listing all commands of all users	NO

Parameter	Type	Option	Description	Required
userId	string	u	is an admin option for listing commands launched by a specific user identified by his/her userId	NO
sessionId	string	i	lists all commands launched within a specific session	NO
startDateOption	long	s	allows the user to organize the commands listed by providing the start date (the UNIX timestamp of the start date is used)	NO
endDateOption	long	e	allows the user to organize the commands listed by providing the end date (the timestamp of the end date is used). By default, the end date is the current day	NO

#### Environment variables

Name	Parameter	Type	Description	Required	User option
VISHNU_SESSION_KEY	sessionKey	string	The sessionKey is the encrypted identifier of the session generated by VISHNU	YES	NO

### 2.1.20 vishnu\_list\_options

#### Access

This command line can be used by any VISHNU user

#### Description

The vishnu\_list\_options command lists the options of the user

#### Example of use

```
vishnu_list_options [-a ] [-u userId] [-n optionName]
```

#### Parameters

Parameter	Type	Option	Description	Required
listAllDeftValue	boolean	a	is an option for listing all default option values defined by VISHNU administrator	NO
userId	string	u	is an admin option for listing the options of a specific user	NO
optionName	string	n	allows the user to get the value of a specific option identified by its name	NO

#### Environment variables

Name	Parameter	Type	Description	Required	User option
VISHNU_SESSION_KEY	sessionKey	string	The sessionKey is the identifier of the session generated by VISHNU	YES	NO

### 2.1.21 vishnu\_list\_users

#### Access

This command line can be used by ADMIN users only

### Description

The vishnu\_list\_users command lists VISHNU users

### Example of use

```
vishnu_list_users [-i userIdOption]
```

### Parameters

Parameter	Type	Option	Description	Required
userIdOption	string	i	allows an admin to get information about a specific user identified by his/her userId	NO

### Environment variables

Name	Parameter	Type	Description	Required	User option
VISHNU_SESSION_KEY	sessionKey	string	The sessionKey is the identifier of the session generated by VISHNU	YES	NO

## 2.1.22 vishnu\_list\_sessions

### Access

This command line can be used by any VISHNU user

### Description

The vishnu\_list\_sessions command lists all sessions of the user

### Example of use

```
vishnu_list_sessions [-t status] [-p sessionClosePolicy] [-d sessionInactivityDelay] [-m machineId] [-a ] [-u userId] [-i sessionId] [-s startDateOption] [-e endDateOption]
```

### Parameters

Parameter	Type	Option	Description	Required
status	StatusType	t	specifies the status of the sessions which will be listed	NO
sessionClosePolicy	SessionCloseType	p	specifies the closure mode of the sessions which will be listed (CLOSE_ON_TIMEOUT or CLOSE_ON_DISCONNECT)	NO
sessionInactivityDelay	int	d	specifies the inactivity delay in seconds of the sessions which will be listed	NO
machineId	string	m	allows the user to list sessions opened on a specific machine	NO
adminListOption	boolean	a	is an admin option for listing all sessions of all users	NO
userId	string	u	is an admin option for listing sessions opened by a specific user	NO
sessionId	string	i	allows the user to list all commands launched within a specific session	NO
startDateOption	long	s	allows the user to organize the commands listed by providing the start date (the UNIX timestamp of the start date is used)	NO

Parameter	Type	Option	Description	Required
endDateOption	long	e	allows the user to organize the commands listed by providing the end date (the timestamp of the end date is used). By default, the end date is the current day	NO

#### Environment variables

Name	Parameter	Type	Description	Required	User option
VISHNU_SESSION_KEY	sessionKey	string	The sessionKey is the encrypted identifier of the session generated by VISHNU	YES	NO

### 2.1.23 vishnu\_configure\_default\_option

#### Access

This command line can be used by ADMIN users only

#### Description

The vishnu\_configure\_default\_option command configures a default option value

#### Example of use

```
vishnu_configure_default_option optionName value
```

#### Parameters

Parameter	Type	Option	Description	Required
optionName	string		represents the name of an option	YES
value	string		represents the value of an option	YES

#### Environment variables

Name	Parameter	Type	Description	Required	User option
VISHNU_SESSION_KEY	sessionKey	string	The sessionKey is the encrypted identifier of the session generated by VISHNU	YES	NO

### 2.1.24 vishnu\_configure\_option

#### Access

This command line can be used by any VISHNU user

#### Description

The vishnu\_configure\_option command configures an option of the user

#### Example of use

```
vishnu_configure_option optionName value
```

#### Parameters

Parameter	Type	Option	Description	Required
optionName	string		represents the name of an option	YES
value	string		represents the value of an option	YES

#### Environment variables

Name	Parameter	Type	Description	Required	User option
VISHNU_SESSION_KEY	sessionKey	string	The sessionKey is the encrypted identifier of the session generated by VISHNU	YES	NO

## 2.2 Parameters definitions

#### Enumeration UMS::PrivilegeType Type

Name	Value
USER	0
ADMIN	1

#### Enumeration UMS::SessionCloseType Type

Name	Value
UNDEFINED	0
CLOSE_ON_TIMEOUT	1
CLOSE_ON_DISCONNECT	2

#### Enumeration UMS::StatusType Type

Name	Value
INACTIVE	0
ACTIVE	1

## Chapter 3

# Commands specification for Tasks Management Service (TMS)

### 3.1 Command definitions

#### 3.1.1 vishnu\_submit\_job

##### Access

This command line can be used by any VISHNU user

##### Description

The vishnu\_submit\_job command submits job on a machine through the use of a script (scriptFilePath). The script is a shell script which will be executed by a command shell such as sh or csh

##### Example of use

```
vishnu_submit_job [-n name] [-p priority] [-q queue] [-t wallTime] [-m memory] [-P nbCpu] [-N nbNodesAndCpuPerNode] [-o outPutPath] [-e errorPath] machineId scriptFilePath
```

##### Parameters

Parameter	Type	Option	Description	Required
machineId	string		Is the id of the machine where the job must be submitted	YES
scriptFilePath	string		The path to the file containing the characteristics (job command, and batch scheduler directive required or optional) of the job to submit.	YES
name	string	n	Assigns a job name. The default is the path of job.	NO
priority	JobPriority	p	Assigns priority of the job.	NO
queue	string	q	Assigns the queue or class of the job.	NO
wallTime	int	t	The maximum wall-clock time during which the job can run.	NO
memory	int	m	Is the memory size that the job requires.	NO
nbCpu	int	P	The number of cpu that the job requires.	NO
nbNodesAndCpuPerNode	string	N	The number of nodes and processors per node.	NO
outPutPath	string	o	Assigns the path and file for job output.	NO
errorPath	string	e	Assigns the path and file for job error.	NO

##### Environment variables

Name	Parameter	Type	Description	Required	User option
VISHNU_SESSION_KEY	sessionKey	string	The sessionKey is the identifier of the session generated by VISHNU	YES	NO

### 3.1.2 vishnu\_get\_job\_info

#### Access

This command line can be used by any VISHNU user

#### Description

The vishnu\_get\_job\_info command gets information on a job from its id

#### Example of use

```
vishnu_get_job_info machineId jobId
```

#### Parameters

Parameter	Type	Option	Description	Required
machineId	string		Machine hash key	YES
jobId	string		The id of the job	YES

#### Environment variables

Name	Parameter	Type	Description	Required	User option
VISHNU_SESSION_KEY	sessionKey	string	The sessionKey is the identifier of the session generated by VISHNU	YES	NO

### 3.1.3 vishnu\_get\_job\_progress

#### Access

This command line can be used by any VISHNU user

#### Description

The vishnu\_get\_job\_progress command gets the progression status of jobs

#### Example of use

```
vishnu_get_job_progress [-i jobId] [-u jobOwner] machineId
```

#### Parameters

Parameter	Type	Option	Description	Required
machineId	string		Is the id of the machine to get the jobs progression.	YES
jobId	string	i	Represents the id of the job that the user wants to see the progression of.	NO
jobOwner	string	u	Represents the owner of the job.	NO

#### Environment variables



Name	Parameter	Type	Description	Required	User option
VISHNU_SESSION_KEY	sessionKey	string	The sessionKey is the identifier of the session generated by VISHNU	YES	NO

### 3.1.4 vishnu\_list\_queues

#### Access

This command line can be used by any VISHNU user

#### Description

The vishnu\_list\_queues command gets queues information

#### Example of use

```
vishnu_list_queues machineId
```

#### Parameters

Parameter	Type	Option	Description	Required
machineId	string		Machine hash key	YES

#### Environment variables

Name	Parameter	Type	Description	Required	User option
VISHNU_SESSION_KEY	sessionKey	string	The sessionKey is the identifier of the session generated by VISHNU	YES	NO

### 3.1.5 vishnu\_list\_jobs

#### Access

This command line can be used by any VISHNU user

#### Description

The vishnu\_list\_jobs command gets a list of all submitted jobs

#### Example of use

```
vishnu_list_jobs [-i jobId] [-P nbCpu] [-d fromSubmitDate] [-D toSubmitDate] [-u owner] [-s status]  
[-p priority] [-o outPutPath] [-e errorPath] [-q queue] machineId
```

#### Parameters

Parameter	Type	Option	Description	Required
machineId	string		Machine hash key	YES
jobId	string	i	To list job which has this id.	NO
nbCpu	int	P	To list jobs which have this number of cpu.	NO
fromSubmitDate	long	d	List jobs submitted after this date (unix timestamp).	NO
toSubmitDate	long	D	List jobs submitted before this date (unix timestamp)	NO
owner	string	u	To list all jobs submitted by this owner.	NO
status	JobStatus	s	To list jobs which have this status.	NO

Parameter	Type	Option	Description	Required
priority	JobPriority	p	To list jobs which have this priority	NO
outPutPath	string	o	Gets the path and file for each job output.	NO
errorPath	string	e	Gets the path and file for each job error.	NO
queue	string	q	To list jobs which have this queue name.	NO

#### Environment variables

Name	Parameter	Type	Description	Required	User option
VISHNU_SESSION_KEY	sessionKey	string	The sessionKey is the identifier of the session generated by VISHNU	YES	NO

### 3.1.6 vishnu\_get\_job\_out\_put

#### Access

This command line can be used by any VISHNU user

#### Description

The vishnu\_get\_job\_out\_put command gets outputPath and errorPath of a job from its id

#### Example of use

```
vishnu_get_job_out_put machineId jobId
```

#### Parameters

Parameter	Type	Option	Description	Required
machineId	string		Machine hash key	YES
jobId	string		The Id of the job	YES

#### Environment variables

Name	Parameter	Type	Description	Required	User option
VISHNU_SESSION_KEY	sessionKey	string	The sessionKey is the identifier of the session generated by VISHNU	YES	NO

### 3.1.7 vishnu\_get\_all\_jobs\_out\_put

#### Access

This command line can be used by any VISHNU user

#### Description

The vishnu\_get\_all\_jobs\_out\_put command dynamically gets outputPath and errorPath of completed jobs

#### Example of use

```
vishnu_get_all_jobs_out_put machineId
```

#### Parameters

Parameter	Type	Option	Description	Required
machineId	string		Machine hash key	YES

## Environment variables

Name	Parameter	Type	Description	Required	User option
VISHNU_SESSION_KEY	sessionKey	string	The sessionKey is the identifier of the session generated by VISHNU	YES	NO

### 3.1.8 vishnu\_cancel\_job

#### Access

This command line can be used by any VISHNU user

#### Description

The vishnu\_cancel\_job command cancels a job from its id

#### Example of use

```
vishnu_cancel_job machineId jobId
```

#### Parameters

Parameter	Type	Option	Description	Required
machineId	string		Machine hash key	YES
jobId	string		The Id of the job	YES

## Environment variables

Name	Parameter	Type	Description	Required	User option
VISHNU_SESSION_KEY	sessionKey	string	The sessionKey is the identifier of the session generated by VISHNU	YES	NO

### 3.1.9 vishnu\_set\_machine\_env

#### Access

This command line can be used by ADMIN users only

#### Description

The vishnu\_set\_machine\_env command sets environment variables on a remote machine

#### Example of use

```
vishnu_set_machine_env machineId listEnv
```

#### Parameters

Parameter	Type	Option	Description	Required
machineId	string		Represents the machine id	YES
listEnv	string		Represents the list environnement variables	YES

## Environment variables

Name	Parameter	Type	Description	Required	User option
VISHNU_SESSION_KEY	sessionKey	string	The sessionKey is the identifier of the session generated by VISHNU	YES	NO

### 3.1.10 vishnu\_set\_machine\_refresh\_period

#### Access

This command line can be used by ADMIN users only

#### Description

The vishnu\_set\_machine\_refresh\_period command sets the refresh period of output and error files contents

#### Example of use

```
vishnu_set_machine_refresh_period machineId value
```

#### Parameters

Parameter	Type	Option	Description	Required
machineId	string		The id of the machine	YES
value	int		Is the refresh interval value (in seconds)	YES

#### Environment variables

Name	Parameter	Type	Description	Required	User option
VISHNU_SESSION_KEY	sessionKey	string	The sessionKey is the identifier of the session generated by VISHNU	YES	NO

## 3.2 Parameters definitions

#### Enumeration TMS::JobPriority Type

Name	Value
VERY_LOW	100
LOW	200
NORMAL	300
HIGH	400
VERY_HIGH	500

#### Enumeration TMS::JobStatus Type

Name	Value
RUNNING	0
WAITING	1
COMPLETED	2
CANCELED	3
HELD	4
QUEUED	5
FAILED	6
NOT_SUBMITTED	7

**Enumeration TMS::QueuePriority Type**

Name	Value
VERY_LOW	0
LOW	1
NORMAL	2
HIGH	3
VERY_HIGH	4

**Enumeration TMS::QueueStatus Type**

Name	Value
STARTED	0
RUNNING	1
NOT_STARTED	2
NOT_AVAILABLE	3

---

## Chapter 4

# Commands specification for Information Management Service (IMS)

### 4.1 Command definitions

#### 4.1.1 vishnu\_export\_commands

##### Access

This command line can be used by any VISHNU user

##### Description

The vishnu\_export\_commands command exports all the commands made by a user during a session

##### Example of use

```
vishnu_export_commands oldSessionId
```

##### Parameters

Parameter	Type	Option	Description	Required
oldSessionId	string		The id of the session to export (session has ended)	YES

##### Environment variables

Name	Parameter	Type	Description	Required	User option
VISHNU_SESSION_KEY	sessionKey	string	The key of the session of the user that submits the command (current session key)	YES	NO

#### 4.1.2 vishnu\_get\_metric\_current\_value

##### Access

This command line can be used by any VISHNU user

##### Description

The vishnu\_get\_metric\_current\_value command retrieve the current value of a metric on a machine

### Example of use

```
vishnu_get_metric_current_value machineId metricType
```

### Parameters

Parameter	Type	Option	Description	Required
machineId	string		The id of the machine	YES
metricType	MetricType		Type of metric	YES

### Environment variables

Name	Parameter	Type	Description	Required	User option
VISHNU_SESSION_KEY	sessionKey	string	The key of the session of the user that submits the command	YES	NO

## 4.1.3 vishnu\_get\_metric\_history

### Access

This command line can be used by any VISHNU user

### Description

The vishnu\_get\_metric\_history command retrieve the history of values of a metric on a machine

### Example of use

```
vishnu_get_metric_history machineId startTime endTime metricType
```

### Parameters

Parameter	Type	Option	Description	Required
machineId	string		The id of the machine	YES
startTime	long		Start time of metric history	YES
endTime	long		End time of metric history	YES
metricType	MetricType		Type of metric	YES

### Environment variables

Name	Parameter	Type	Description	Required	User option
VISHNU_SESSION_KEY	sessionKey	string	The key of the session of the user that submits the command	YES	NO

## 4.1.4 vishnu\_get\_processes

### Access

This command line can be used by ADMIN users only

### Description

The vishnu\_get\_processes command gets the list of the processes running over a front machine

### Example of use

```
vishnu_get_processes machineId
```

**Parameters**

Parameter	Type	Option	Description	Required
machineId	string		The id of the machine the user wants the running processes	YES

**Environment variables**

Name	Parameter	Type	Description	Required	User option
VISHNU_SESSION_KEY	sessionKey	string	The key of the session of the user that submits the command	YES	NO

**4.1.5 vishnu\_set\_system\_info****Access**

This command line can be used by ADMIN users only

**Description**

The vishnu\_set\_system\_info command updates the system information of a machine

**Example of use**

```
vishnu_set_system_info [-m memory] [-d diskSpace] machineId
```

**Parameters**

Parameter	Type	Option	Description	Required
machineId	string		The id of the machine	YES
memory	long	m	Amount of RAM memory available on the machine (in Bytes)	NO
diskSpace	long	d	Amount of disk space available on the machine (in Bytes)	NO

**Environment variables**

Name	Parameter	Type	Description	Required	User option
VISHNU_SESSION_KEY	sessionKey	string	The key of the session of the user that submits the command	YES	NO

**4.1.6 vishnu\_set\_system\_threshold****Access**

This command line can be used by ADMIN users only

**Description**

The vishnu\_set\_system\_threshold command sets a threshold on a machine of a system

**Example of use**

```
vishnu_set_system_threshold machineId thresholdType value
```

**Parameters**



Parameter	Type	Option	Description	Required
machineId	string		The id of the machine	YES
thresholdType	MetricType		The type of the metric to set	YES
value	double		The threshold value	YES

#### Environment variables

Name	Parameter	Type	Description	Required	User option
VISHNU_SESSION_KEY	sessionKey	string	The key of the session of the user that submits the command	YES	NO

### 4.1.7 vishnu\_get\_system\_threshold

#### Access

This command line can be used by ADMIN users only

#### Description

The vishnu\_get\_system\_threshold command gets a System threshold on a machine

#### Example of use

```
vishnu_get_system_threshold machineId type
```

#### Parameters

Parameter	Type	Option	Description	Required
machineId	string		The id of the machine	YES
type	MetricType		The threshold type desired	YES

#### Environment variables

Name	Parameter	Type	Description	Required	User option
VISHNU_SESSION_KEY	sessionKey	string	The key of the session of the user that submits the command	YES	NO

### 4.1.8 vishnu\_define\_user\_identifier

#### Access

This command line can be used by ADMIN users only

#### Description

The vishnu\_define\_user\_identifier command defines the shape of the identifiers automatically generated for the users

#### Example of use

```
vishnu_define_user_identifier format
```

#### Parameters

Parameter	Type	Option	Description	Required
format	string		The new format to use	YES

## Environment variables

Name	Parameter	Type	Description	Required	User option
VISHNU_SESSION_KEY	sessionKey	string	The key of the session of the user that submits the command	YES	NO

### 4.1.9 vishnu\_define\_machine\_identifier

#### Access

This command line can be used by ADMIN users only

#### Description

The vishnu\_define\_machine\_identifier command defines the shape of the identifiers automatically generated for the machines

#### Example of use

```
vishnu_define_machine_identifier format
```

#### Parameters

Parameter	Type	Option	Description	Required
format	string		The new format to use	YES

## Environment variables

Name	Parameter	Type	Description	Required	User option
VISHNU_SESSION_KEY	sessionKey	string	The key of the session of the user that submits the command	YES	NO

### 4.1.10 vishnu\_define\_job\_identifier

#### Access

This command line can be used by ADMIN users only

#### Description

The vishnu\_define\_job\_identifier command defines the shape of the identifiers automatically generated for the jobs

#### Example of use

```
vishnu_define_job_identifier format
```

#### Parameters

Parameter	Type	Option	Description	Required
format	string		The new format to use	YES

## Environment variables

Name	Parameter	Type	Description	Required	User option
VISHNU_SESSION_KEY	sessionKey	string	The key of the session of the user that submits the command	YES	NO

#### 4.1.11 vishnu\_define\_transfer\_identifier

##### Access

This command line can be used by ADMIN users only

##### Description

The vishnu\_define\_transfer\_identifier command defines the shape of the identifiers automatically generated for the file transfers

##### Example of use

`vishnu_define_transfer_identifier format`

##### Parameters

Parameter	Type	Option	Description	Required
format	string		The new format to use	YES

##### Environment variables

Name	Parameter	Type	Description	Required	User option
VISHNU_SESSION_KEY	sessionKey	string	The key of the session of the user that submits the command	YES	NO

#### 4.1.12 vishnu\_load\_shed

##### Access

This command line can be used by ADMIN users only

##### Description

The vishnu\_load\_shed command load sheds a machine

##### Example of use

`vishnu_load_shed machineId loadShedType`

##### Parameters

Parameter	Type	Option	Description	Required
machineId	string		The id of the machine to stop	YES
loadShedType	LoadShedType		Selects a load shedding mode (SOFT: stops all services and they can be restarted, HARD: stops all services, they cannot be restarted)	YES

##### Environment variables

Name	Parameter	Type	Description	Required	User option
VISHNU_SESSION_KEY	sessionKey	string	The key of the session of the user that submits the command	YES	NO

#### 4.1.13 vishnu\_set\_update\_frequency

##### Access

This command line can be used by ADMIN users only

##### Description

The vishnu\_set\_update\_frequency command sets the update frequency of the IMS tables

##### Example of use

```
vishnu_set_update_frequency freq
```

##### Parameters

Parameter	Type	Option	Description	Required
freq	int		Frequency the data are updated, in second	YES

##### Environment variables

Name	Parameter	Type	Description	Required	User option
VISHNU_SESSION_KEY	sessionKey	string	The key of the session of the user that submits the command	YES	NO

#### 4.1.14 vishnu\_get\_update\_frequency

##### Access

This command line can be used by any VISHNU user

##### Description

The vishnu\_get\_update\_frequency command gets the update frequency of the IMS database

##### Example of use

```
vishnu_get_update_frequency
```

##### Parameters

This command defines no arguments.

##### Environment variables

Name	Parameter	Type	Description	Required	User option
VISHNU_SESSION_KEY	sessionKey	string	The key of the session of the user that submits the command	YES	NO

### 4.1.15 vishnu\_restart

#### Access

This command line can be used by ADMIN users only

#### Description

The vishnu\_restart command restarts the whole VISHNU infrastructure. Actions are saved and restarted from the beginning once the infrastructure has been restarted

#### Example of use

```
vishnu_restart [-n componentName] [-m machineId] [-f file] type
```

#### Parameters

Parameter	Type	Option	Description	Required
type	RestartType		The type of restart	YES
componentName	string	n	If not restarting all, the name of the component to restart	NO
machineId	string	m	The id of the machine where the component is to be relaunched	NO
file	string	f	The config file to use to restart	NO

#### Environment variables

Name	Parameter	Type	Description	Required	User option
VISHNU_SESSION_KEY	sessionKey	string	The key of the session of the user that submits the command	YES	NO

## 4.2 Parameters definitions

#### Enumeration IMS::LoadShedType Type

Name	Value
SOFT	0
HARD	1

#### Enumeration IMS::MetricType Type

Name	Value
CPUNBR	0
CPUUSE	1
DISKSPACE	2
FREEDISKSPACE	3
MEMORY	4
FREEMEMORY	5

#### Enumeration IMS::RestartType Type

Name	Value
ALL	0
SED	1

Name	Value
AGENT	2
DAEMON	3

## Chapter 5

# Commands specification for File Management Service (FMS)

### 5.1 Command definitions

#### 5.1.1 vishnu\_create\_file

##### Access

This command line can be used by any VISHNU user

##### Description

The vishnu\_create\_file command creates files on remote machines.

##### Example of use

```
vishnu_create_file [-m mode] path
```

##### Parameters

Parameter	Type	Option	Description	Required
path	string		The file to create following the pattern [host:]file path	YES
mode	int	m	The file access permissions in octal numeral system	NO

##### Environment variables

Name	Parameter	Type	Description	Required	User option
VISHNU_SESSION_KEY	sessionKey	string	The session key	YES	NO

#### 5.1.2 vishnu\_create\_dir

##### Access

This command line can be used by any VISHNU user

##### Description

The vishnu\_create\_dir command creates directories on remote machines.

### Example of use

```
vishnu_create_dir [-m mode] path
```

### Parameters

Parameter	Type	Option	Description	Required
path	string		The directory to create following the pattern [host:]directory path	YES
mode	int	m	the new directories permission access in octal numeral system	NO

### Environment variables

Name	Parameter	Type	Description	Required	User option
VISHNU_SESSION_KEY	sessionKey	string	The session key	YES	NO

## 5.1.3 vishnu\_remove\_file

### Access

This command line can be used by any VISHNU user

### Description

The vishnu\_remove\_file command removes files from remote hosts.

### Example of use

```
vishnu_remove_file path
```

### Parameters

Parameter	Type	Option	Description	Required
path	string		The file to remove following the pattern [host:]file path	YES

### Environment variables

Name	Parameter	Type	Description	Required	User option
VISHNU_SESSION_KEY	sessionKey	string	The session key	YES	NO

## 5.1.4 vishnu\_remove\_dir

### Access

This command line can be used by any VISHNU user

### Description

The vishnu\_remove\_dir command removes directories (and subdirectories) from remote machines.

### Example of use

```
vishnu_remove_dir path
```

### Parameters



Parameter	Type	Option	Description	Required
path	string		The directory to remove following the pattern [host:]directory path	YES

#### Environment variables

Name	Parameter	Type	Description	Required	User option
VISHNU_SESSION_KEY	sessionKey	string	The session key	YES	NO

### 5.1.5 vishnu\_ch\_grp

#### Access

This command line can be used by any VISHNU user

#### Description

The vishnu\_ch\_grp command changes group owner of remote files/directories.

#### Example of use

```
vishnu_ch_grp path group
```

#### Parameters

Parameter	Type	Option	Description	Required
path	string		The file/directory following the pattern [host:]file path	YES
group	string		the new group owner of file/directory	YES

#### Environment variables

Name	Parameter	Type	Description	Required	User option
VISHNU_SESSION_KEY	sessionKey	string	The session key	YES	NO

### 5.1.6 vishnu\_ch\_mod

#### Access

This command line can be used by any VISHNU user

#### Description

The vishnu\_ch\_mod command changes access rights of remote files/directories.

#### Example of use

```
vishnu_ch_mod path mode
```

#### Parameters

Parameter	Type	Option	Description	Required
path	string		The file/directory following the pattern [host:]file path	YES
mode	int		the access rights of file/directory in octal system.	YES

#### Environment variables

Name	Parameter	Type	Description	Required	User option
VISHNU_SESSION_KEY	sessionKey	string	The session key	YES	NO

### 5.1.7 vishnu\_head\_of\_file

#### Access

This command line can be used by any VISHNU user

#### Description

The vishnu\_head\_of\_file command displays a few first lines of files located on remote machines.

#### Example of use

```
vishnu_head_of_file [-n nLine] path
```

#### Parameters

Parameter	Type	Option	Description	Required
path	string		The file following the pattern [host:]file path	YES
nLine	int	n	Number of lines to display	NO

#### Environment variables

Name	Parameter	Type	Description	Required	User option
VISHNU_SESSION_KEY	sessionKey	string	The session key	YES	NO

### 5.1.8 vishnu\_tail\_of\_file

#### Access

This command line can be used by any VISHNU user

#### Description

The vishnu\_tail\_of\_file command displays a few last lines of files located on remote machines

#### Example of use

```
vishnu_tail_of_file [-n nLine] path
```

#### Parameters

Parameter	Type	Option	Description	Required
path	string		The file following the pattern [host:]file path	YES
nLine	int	n	number of lines to display	NO

#### Environment variables

Name	Parameter	Type	Description	Required	User option
VISHNU_SESSION_KEY	sessionKey	string	The session key	YES	NO

### 5.1.9 vishnu\_content\_of\_file

#### Access

This command line can be used by any VISHNU user

### Description

The `vishnu_content_of_file` command displays content of files located on remote machines

### Example of use

```
vishnu_content_of_file path
```

### Parameters

Parameter	Type	Option	Description	Required
path	string		The file to display following the pattern [host:]file path	YES

### Environment variables

Name	Parameter	Type	Description	Required	User option
VISHNU_SESSION_KEY	sessionKey	string	The session key	YES	NO

## 5.1.10 vishnu\_list\_dir

### Access

This command line can be used by any VISHNU user

### Description

The `vishnu_list_dir` command displays the content of a remote directory.

### Example of use

```
vishnu_list_dir [-l ] [-a ] path
```

### Parameters

Parameter	Type	Option	Description	Required
path	string		The directory to list following the pattern [host:]directory path	YES
longFormat	boolean	l	It specifies the long display format (all available file informations)	NO
allFiles	boolean	a	Allows to display all files including hidden files	NO

### Environment variables

Name	Parameter	Type	Description	Required	User option
VISHNU_SESSION_KEY	sessionKey	string	The session key	YES	NO

## 5.1.11 vishnu\_copy\_file

### Access

This command line can be used by any VISHNU user

### Description

The `vishnu_copy_file` command executes a synchronous copy of file.

### Example of use

```
vishnu_copy_file [-r ] [-c trCommand] src dest
```

**Parameters**

Parameter	Type	Option	Description	Required
src	string		The source file to copy following the pattern [host:]file path	YES
dest	string		The path of the destination file	YES
isRecursive	boolean	r	It specifies when the copy is recursive (case of directory) or not.	NO
trCommand	TransferCommand	c	the command to use to perform file transfer.	NO

**Environment variables**

Name	Parameter	Type	Description	Required	User option
VISHNU_SESSION_KEY	sessionKey	string	The session key	YES	NO
VISHNU_TRANSFER_CMD	trCommand	TransferCommand	the command to use to perform file transfer.	NO	YES

**5.1.12 vishnu\_copy\_async\_file****Access**

This command line can be used by any VISHNU user

**Description**

The vishnu\_copy\_async\_file command executes an asynchronous copy of file.

**Example of use**

```
vishnu_copy_async_file [-r ] [-c trCommand] src dest
```

**Parameters**

Parameter	Type	Option	Description	Required
src	string		The source file to copy following the pattern [host:]file path	YES
dest	string		The path of the destination file	YES
isRecursive	boolean	r	It specifies when the copy is recursive (case of directory) or not.	NO
trCommand	TransferCommand	c	the command to use to perform file transfer.	NO

**Environment variables**

Name	Parameter	Type	Description	Required	User option
VISHNU_SESSION_KEY	sessionKey	string	The session key	YES	NO
VISHNU_TRANSFER_CMD	trCommand	TransferCommand	the command to use to perform file transfer.	NO	YES

**5.1.13 vishnu\_move\_file****Access**

This command line can be used by any VISHNU user

**Description**

The `vishnu_move_file` command executes a synchronous move of file.

**Example of use**

```
vishnu_move_file [-c trCommand] src dest
```

**Parameters**

Parameter	Type	Option	Description	Required
src	string		The source file to move following the pattern [host:]file path	YES
dest	string		The path of the destination file	YES
trCommand	TransferCommand	c	the command to use to perform file transfer.	NO

**Environment variables**

Name	Parameter	Type	Description	Required	User option
VISHNU_SESSION_KEY	sessionKey	string	The session key	YES	NO
VISHNU_TRANSFER_CMD	trCommand	TransferCommand	the command to use to perform file transfer.	NO	YES

**5.1.14 vishnu\_move\_async\_file****Access**

This command line can be used by any VISHNU user

**Description**

The `vishnu_move_async_file` command executes an asynchronous move of file.

**Example of use**

```
vishnu_move_async_file [-c trCommand] src dest
```

**Parameters**

Parameter	Type	Option	Description	Required
src	string		The source file to move following the pattern [host:]file path	YES
dest	string		The path of the destination file	YES
trCommand	TransferCommand	c	the command to use to perform file transfer.	NO

**Environment variables**

Name	Parameter	Type	Description	Required	User option
VISHNU_SESSION_KEY	sessionKey	string	The session key	YES	NO
VISHNU_TRANSFER_CMD	trCommand	TransferCommand	the command to use to perform file transfer.	NO	YES

**5.1.15 vishnu\_stop\_file\_transfer****Access**

This command line can be used by any VISHNU user

**Description**

The `vishnu_stop_file_transfer` command stops an execution of a set of file transfers.

#### Example of use

```
vishnu_stop_file_transfer [-i transferId] [-m fromMachineId] [-u userId]
```

#### Parameters

Parameter	Type	Option	Description	Required
<code>transferId</code>	string	<code>i</code>	a given transfer id	NO
<code>fromMachineId</code>	string	<code>m</code>	the machine that is the source of the file transfer	NO
<code>userId</code>	string	<code>u</code>	allows an admin to stop file transfers of a specific user	NO

#### Environment variables

Name	Parameter	Type	Description	Required	User option
VISHNU_SESSION_KEY	<code>sessionKey</code>	string	The session key	YES	NO

### 5.1.16 vishnu\_list\_file\_transfer\_status

#### Access

This command line can be used by any VISHNU user

#### Description

The `vishnu_list_file_transfer_status` command displays the status of all file transfers submitted by User.

#### Example of use

```
vishnu_list_file_transfer_status [-i transferId] [-m fromMachineId] [-u userId]
```

#### Parameters

Parameter	Type	Option	Description	Required
<code>transferId</code>	string	<code>i</code>	a given transfer id	NO
<code>fromMachineId</code>	string	<code>m</code>	the machine that is the source of the file transfer	NO
<code>userId</code>	string	<code>u</code>	allows the admin to list file transfers initiated by a specific user	NO

#### Environment variables

Name	Parameter	Type	Description	Required	User option
VISHNU_SESSION_KEY	<code>sessionKey</code>	string	The session key	YES	NO

### 5.1.17 vishnu\_list\_file\_transfers

#### Access

This command line can be used by any VISHNU user

#### Description

The `vishnu_list_file_transfers` command displays the history of all file transfers submitted by User.

#### Example of use

```
vishnu_list_file_transfers [-m fromMachineId] [-u userId] [-s status]
```

## Parameters

Parameter	Type	Option	Description	Required
fromMachineId	string	m	the machine that is the source of the file transfer	NO
userId	string	u	allows the admin to list file transfers initiated by a specific user	NO
status	Status	s	the file transfer status	NO

## Environment variables

Name	Parameter	Type	Description	Required	User option
VISHNU_SESSION_KEY	sessionKey	string	The session key	YES	NO

## 5.2 Parameters definitions

### Enumeration FMS::FileType Type

Name	Value
BLOCK	0
CHARACTER	1
DIRECTORY	2
SYMBOLICLINK	3
SCKT	4
FIFO	5
REGULAR	6

### Enumeration FMS::Status Type

Name	Value
INPROGRESS	0
COMPLETED	1
CANCELLED	2
FAILED	3

### Enumeration FMS::TransferCommand Type

Name	Value
SCP	0
RSYNC	1