



Bulk job submission

DIRAC Project

- ▶ A parametric job consists in submission of a set of jobs where only one parameter make the difference between the jobs.
 - ▶ Parameteric jobs share the same Input Sandbox
- ▶ The parameteric job must define a JDL attribute **“Parameters”**. It can take the following values:
 - ▶ A list (strings or numbers).
 - ▶ `Parameters = {"value1", "value2", "value3"};`
 - ▶ Or, an integer specifying the number of parameters to generate, in this case the JDL attributes *ParameterStart* and *ParameterStep/ParameterFactor* must be defined in order to create the sequence of values:
 - ▶ $P_0 = \text{ParameterStart}$
 - ▶ $P_i = P_{i-1} * \text{ParameterFactor} + \text{ParameterStep}$

- ▶ The %s placeholder is substituted by the parameter value and can be put in any JDL attributes.
 - ▶ Not all the attributes can be parameterized this way, e.g. Input Sandbox files can not be parametrized.

- ▶ The %n placeholder is replaced by the parameter sequential number
 - ▶ Useful to be used in job and file names
 - ▶ Left padded with zeros to make names alphabetically sortable

- ▶ The %j placeholder is replaced by the DIRAC job ID
 - ▶ Can be useful in the OutputPath JDL attribute

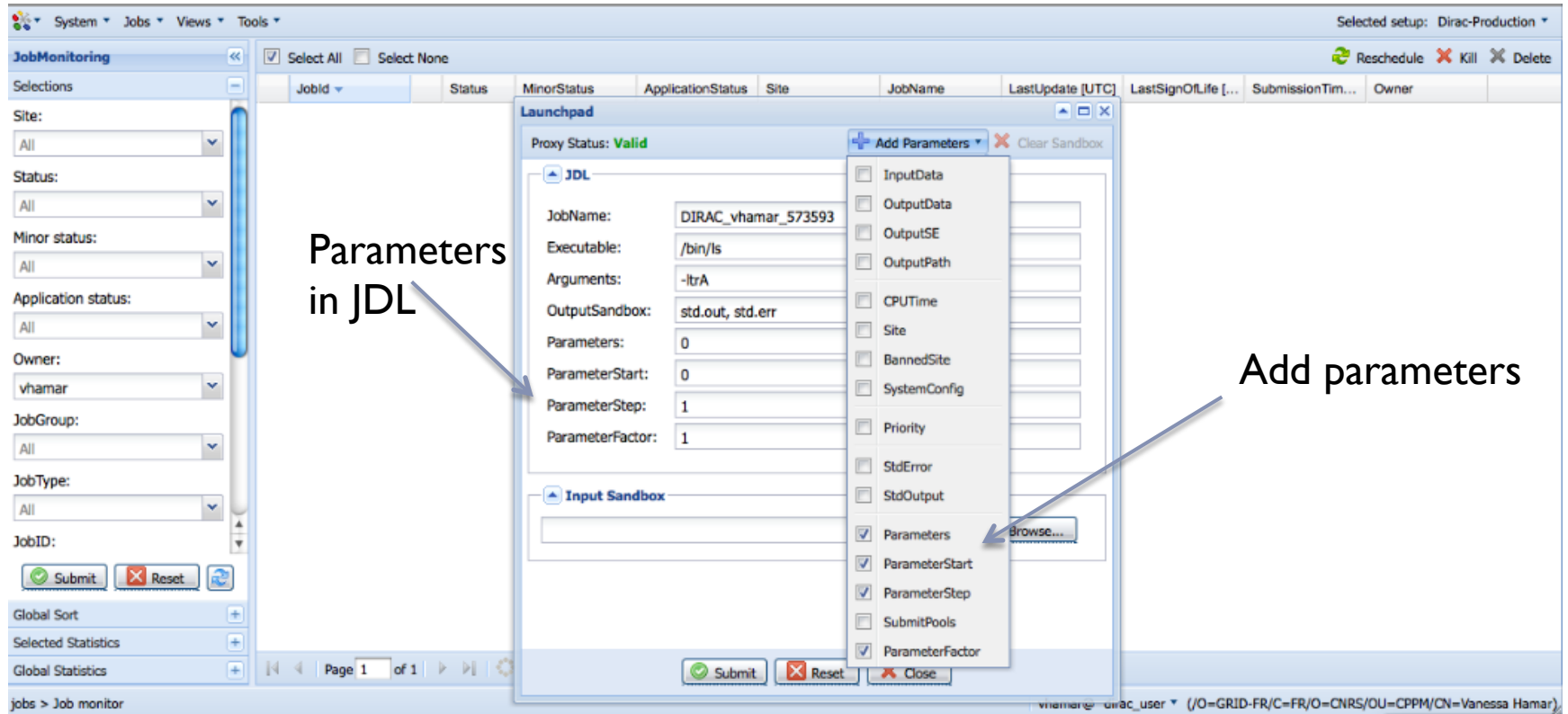
Parametric Job - JDL

```
Executable = "testParametricJob.sh";  
JobName = "Parametric_ %n";  
Arguments = "%s";  
Parameters = 20;  
ParameterStart = 0;  
ParameterStep = 0.02;  
ParameterFactor = 1;  
StdOutput = "StdOut_ %j";  
StdError = "StdErr_ %j";  
InputSandbox = {"testJob.sh"};  
OutputSandbox = {"StdOut_ %j", "StdErr_ %j"};
```

Placeholder replaced by Parameter number value for each job

Placeholder replaced by Parameter value for each job

Placeholder replaced by Parameter value for each job



The screenshot shows the DIRAC JobMonitoring interface. On the left, there are filters for Site, Status, Minor status, Application status, Owner, JobGroup, JobType, and JobID. The main area displays a table of jobs. A 'Launchpad' window is open, showing the configuration for a job named 'DIRAC_vhamar_573593'. The 'JDL' section is expanded, and the 'Add Parameters' menu is open, highlighting the 'Parameters' option. The 'Parameters' option is checked, and a 'Browse...' button is visible next to it. The 'Add Parameters' menu also includes options for InputData, OutputData, OutputSE, OutputPath, CPUTime, Site, BannedSite, SystemConfig, Priority, StdError, StdOutput, SubmitPools, and ParameterFactor.

Parameters in JDL

Add parameters

- ▶ **Submit series of “mandelbrot” jobs with Web Launchpad**
 - ▶ Submit multiple jobs to explore the C seeds
 - ▶ Submit multiple jobs with increasing precision to make a series of frames for the Mandelbrot movie
 - ▶ Submit jobs to multiple sites, one per site
 - ▶ Monitor jobs
 - ▶ Store results in the grid SE

- ▶ **Goals**
 - ▶ Understand bulk job description
 - ▶ Understanding job input/output data