

Bulk job submission

DIRAC Tutorial



A parametric job consists in submission of a set of jobs where only one parameter make the difference between the jobs.

Parametric jobs share the same Input Sandbox

The parametric 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 parameterized.

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

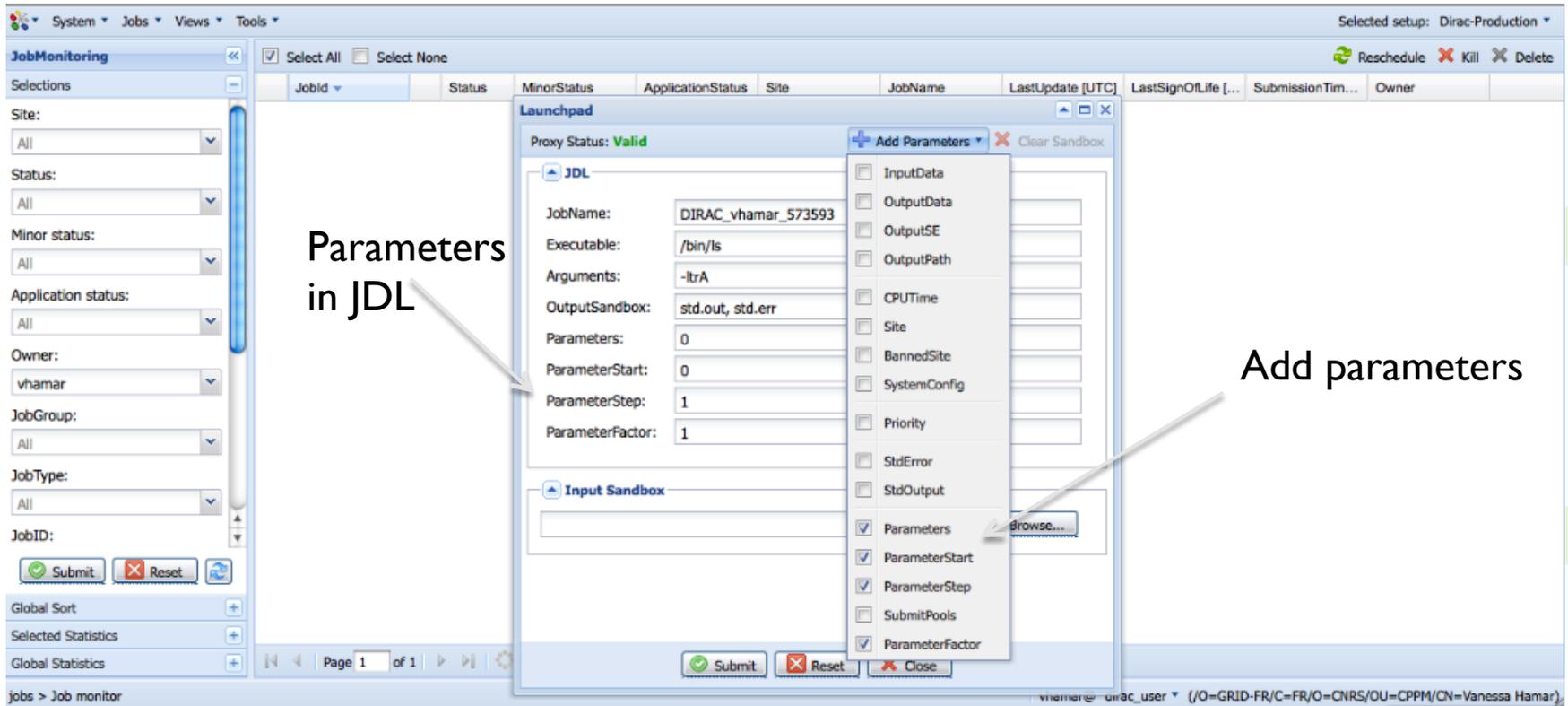
Can be useful in the OutputPath JDL attribute

```
Executable = "testJob.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 displays the DIRAC JobMonitoring interface. On the left, there is a 'JobMonitoring' sidebar with various filters for Site, Status, Minor status, Application status, Owner, JobGroup, JobType, and JobID. The main area shows a table of jobs, with one job selected. A 'Launchpad' window is open, showing the configuration for a parametric job. The job name is 'DIRAC_vhamar_573593'. The executable is '/bin/lis' with arguments '-ltrA'. The output sandbox is 'std.out, std.err'. The parameters are set to 0, with a start of 0, a step of 1, and a factor of 1. An 'Add Parameters' dialog box is open, showing a list of parameters to be added to the job. The 'Parameters' checkbox is checked, and a 'Browse...' button is visible. An arrow points from the text 'Parameters in JDL' to the 'Parameters' field in the job configuration. Another arrow points from the text 'Add parameters' to the 'Add Parameters' dialog box.

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