

Grid Training for Power Users Institute of Physics Belgrade

Hands-On Session: Single job submission

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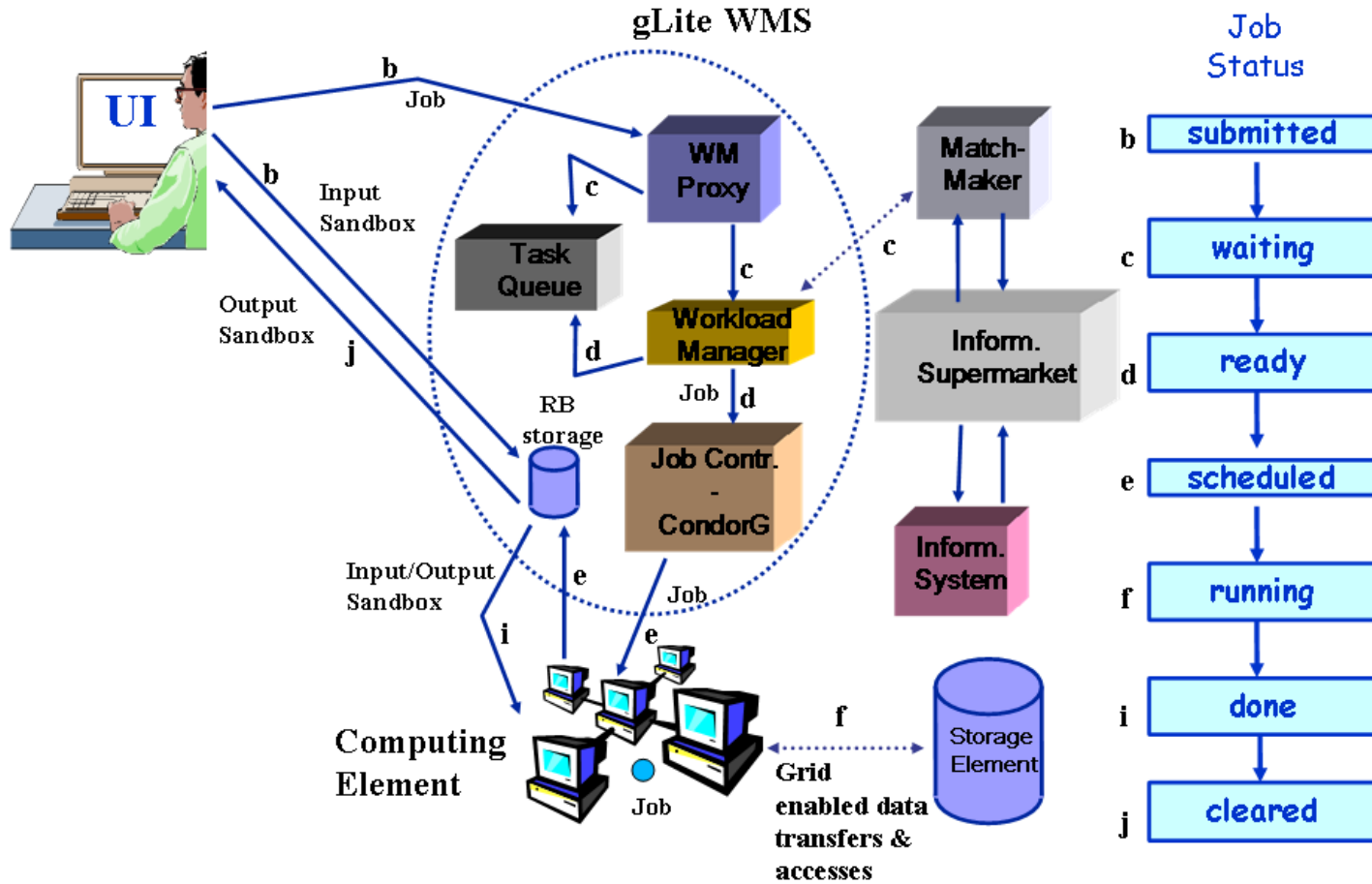
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- WMS and job workflow
- Job Description Language
- Job submission
- Information service
- Hands-On example
- Links



- Job Description Language (JDL) is a high-level language used to describe jobs and aggregates of jobs
- Specifies desired job characteristics and constraints, which are taken into account by the WMS to select the best resource to execute the job
- `attribute = expression;`

- Simple example

```
[  
Type = "Job";  
Executable = "/bin/hostname";  
Arguments = "-f";  
StdOutput = "stdout.txt";  
StdError = "stderr.txt";  
OutputSandbox = {"stdout.txt", "stderr.txt"};  
]
```

- **Additional attributes:**

```
InputSandbox = {"script.sh", "file_A", "file_B", ...}
InputSandbox = {
  "gsiftp://lxb0707.cern.ch/cms/doe/data/fileA", "fileB"};
VirtualOrganisation = "aegis";
RetryCount = 0;
MyProxyServer = "myproxy.ipb.ac.rs";
```

- **Requirements:**

```
Requirements = other.GlueCEPolicyMaxCPUtime > 240 &&
  other.GlueCEPolicyMaxWallClockTime > 220;
Requirements = other.GlueCEUniqueID != "cream.ipb.ac.rs:8443/
  cream-pbs-aegis";
Requirements = (other.GlueHostArchitecturePlatformType == "x86_64");
Requirements = RegExp("Scientific",
  other.GlueHostOperatingSystemName) ;
```

Function	gLite WMS
Submit a job	<code>glite-wms-job-submit [-d delegID] [-a] [-o joblist] jdlfile</code>
See job status	<code>glite-wms-job-status [-v verbosity] [-i joblist] jobIDs</code>
See job logging information	<code>glite-wms-job-logging-info [-v verbosity] [-i joblist] jobIDs</code>
Retrieve job output	<code>glite-wms-job-output [-dir outdir] [-i joblist] jobIDs</code>
Cancel a job	<code>glite-wms-job-cancel [-i joblist] jobID</code>
List available resources	<code>glite-wms-job-list-match [-d delegID] [-a] jdlfile</code>
Delegate proxy	<code>glite-wms-job-delegate-proxy -d delegID</code>

- Delegation of a proxy can be automated, using “-a”
 - Not a very good idea for submitting a lot of jobs – delegation of the proxy takes time, so using the one delegated can speed up the submission process for many jobs

1) Create JDL file

2) Create proxy

3) Delegate proxy

```
glite-wms-job-delegate-proxy
```

4) Check some CEs match your requirements:

```
glite-wms-job-list-match
```

5) Submit a job

```
glite-wms-job-submit
```

6) Do something else for a while! gLite is not written for short jobs!

7) Check job status - occasionally

```
glite-wms-job-status
```

8) When job is “done”, get output

```
glite-wms-job-output
```

- VO-specific information on existing Grid resources

```
lcg-info [--list-ce | --list-se | --list-service | --list-site ] [--query <query>] [--attrs <attrs>]
```

```
lcg-infosites --vo <vo> <option> -v <verbosity> -f <site> --is <bdi>
```

- **Examples:**

```
$ lcg-infosites --vo aegis ce
```

```
$ lcg-infosites --vo aegis se
```

```
$ lcg-info --vo aegis --list-ce --query 'PlatformArch=*x86_64*' --attrs 'Tag'
```

- **WatG Browser:**

- Web-based Grid Information System (GIS) visualization application providing detailed overview of the status and availability of various Grid resources in a given gLite-based e-Infrastructure: <http://watgbrowser.scl.rs:8080/>

- Navigate to the following address:
 - http://wiki.ipb.ac.rs/index.php/Grid_examples
- Choose simple job example and follow the instructions for submitting single job

- gLite user guide:
 - <https://edms.cern.ch/file/722398//gLite-3-UserGuide.pdf>
- Quick user guide for submitting jobs
 - http://wiki.egee-see.org/index.php/Quick_User_Guide_for_Submitting_Jobs
- WatG Browser:
 - https://http.ipb.ac.rs/tools/watg_browser/
 - <http://watgbrowser.scl.rs:8080/>