

CREAM JDL vs JSDL

Massimo Sgaravatto
INFN - Padova



Introduction

□ **CREAM service**

- Computing Resource Execution And Management service

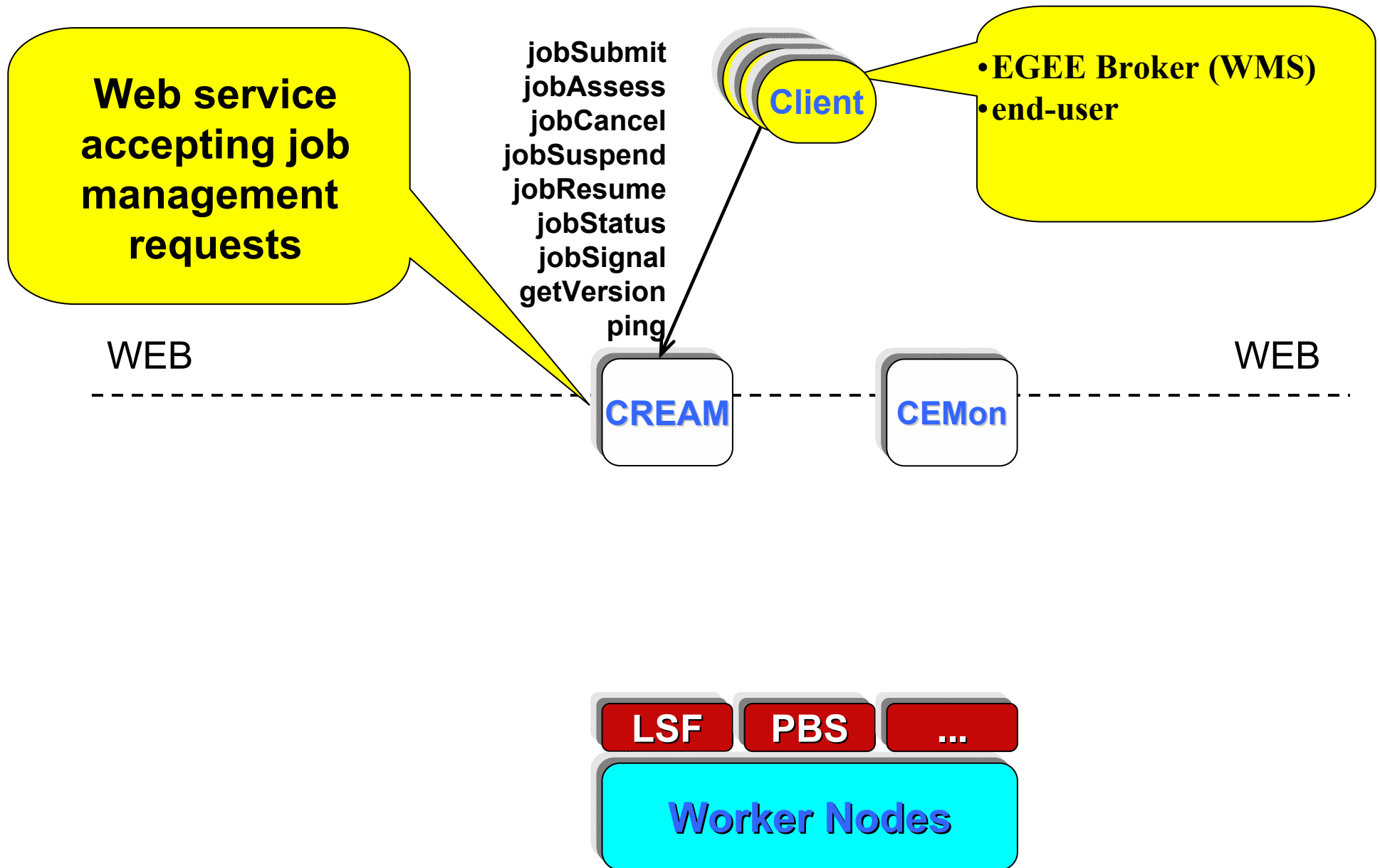
□ **CREAM JDL subset of EGEE Workload Management System (WMS) JDL**

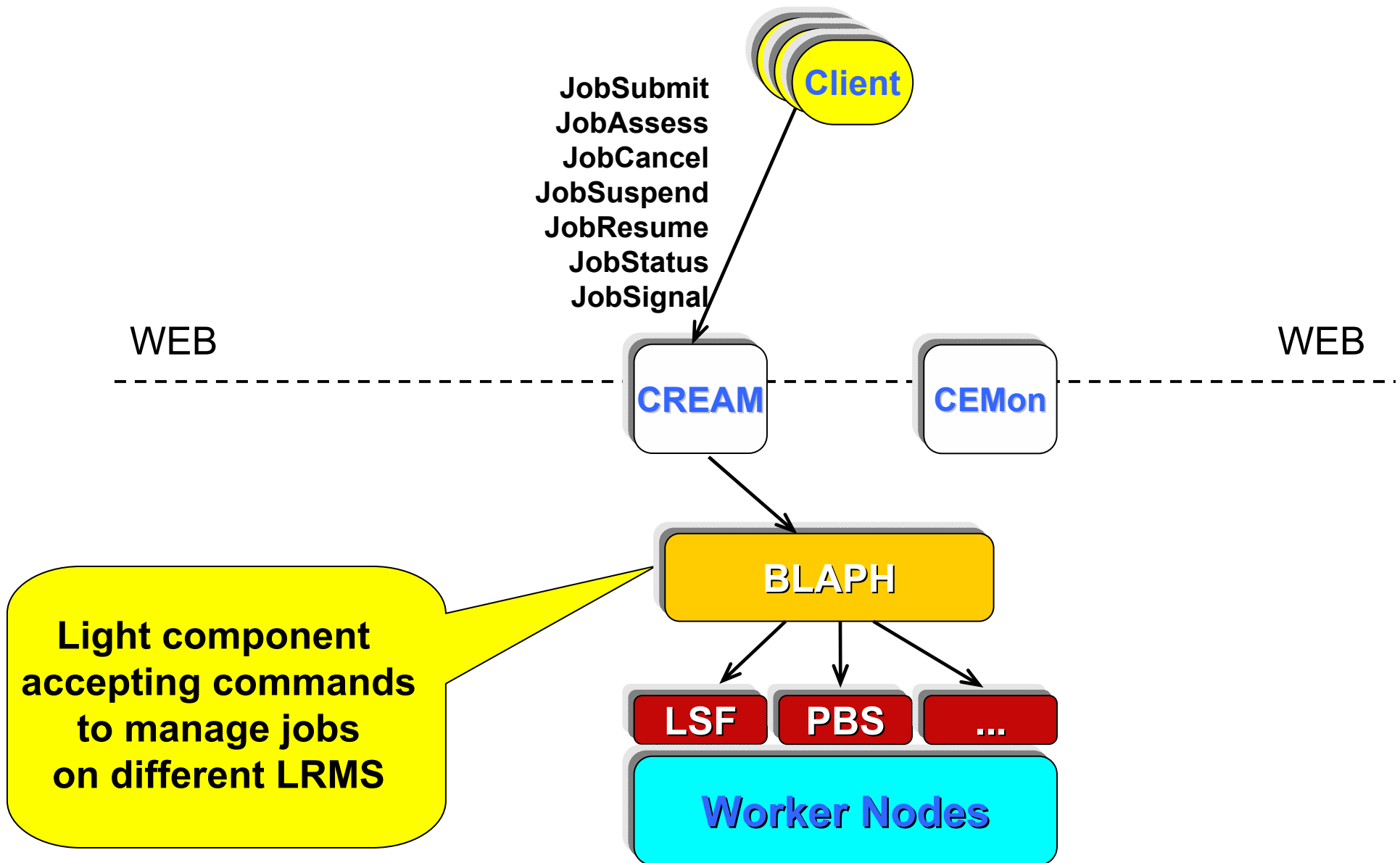
- Language used to specify job characteristics and requirements
- High level, user oriented language
- Based on Condor Classads
- Extensible language
- Only a certain set of “supported attributes” taken into account

□ **Evaluation**

- If/how CREAM JDL directives can be translated into JSDL directives
 - The opposite was not done
- JSDL v. 0.9.5-00

CREAM







Non issues

- **Specification of executable/command name**
 - Executable of the PosixApplication element
- **Specification of job command line arguments**
 - Argument of the PosixApplication element
- **Specification of stdin**
 - Input of the PosixApplication element
- **Specification of stdout**
 - Output of the PosixApplication element
- **Specification of stderr**
 - Error of the PosixApplication element



Non issues

- **Specification of environment settings**
 - Environment of the POSIXApplication element
- **Specification of files that have to be transferred to the executing node before the job is started**
 - Source and FileName of the DataStaging Element
- **Specification of files generated by the job that are then retrieved on job completion**
 - Target and FileName of the DataStaging Element
- **Specification of number of nodes needed for a MPI job**
 - CPUCount of the Resource element



Issues

- **Specification of job type**
 - Need to know if the submitted job is a batch job, a MPI job, etc.
 - Not specific JSDL attribute for this purpose
 - Some attribute of the JobIdentification element ?
- **Specification of automatic upload (on Storage Elements) and registration (on data catalogues) directives for data produced by the job**
 - Target and FileName of the DataStaging Element (just for the automatic upload part)
 - No specific JSDL directives for the registration part
 - Not surprising, since very specific to our architecture
- **Specification of the name of the Virtual Organization**
 - UserGroup of the User element?
- **Specification of the maximum number of job re-submissions to be done in case of failure**
 - No specific JSDL directives exist for this purpose



Issues

- **Specification of (MyProxy) server address where the user has registered her long-term proxy certificate**
 - No specific JSDL directives exist for this purpose
- **Specification of the Grid accounting service responsible for managing the accounts of the user**
 - No specific JSDL directives exist for this purpose
 - Not surprising, since very specific to our architecture
- **Specification of attributes needed for interactive jobs**
 - No specific JSDL directives exist for this purpose
 - Not surprising, since very specific to our architecture
- **Specification of requirements on the target computing resource**
 - In CREAM JDL requirements expressed via boolean ClassAd expression, that can contain attributes describing the CE according to the Glue Schema
 - JSDL use Resource, Application and POSIXApplication elements
 - They don't cover all the attributes represented in the Glue schema

Issues

- **Specification of preferences when choosing the target computing resource**
 - To choose the resource among the ones matching the requirements
 - No specific JSDL directives exist for this purpose
- **Specification of parametric jobs**
 - A *Parametric* job is a job having one or more parametric attributes in the JDL
 - The submission of a *Parametric* job results in the submission of a set of jobs having the same descriptions apart from the values of the parametric attribute
 - No specific JSDL directives exist for this purpose
- **Specification of job collections**
 - A job *Collection* is a set of independent jobs that have to be submitted, monitored and controlled as a single request.
 - Necessary to specify the single jobs composing the whole collection.
 - No specific JSDL directives exist for this purpose

Conclusions

- **Several missing pieces**
- **Some missing directives refer to some functionality very specific to our architecture that could be hardly represented by “default” JSDL attributes**
 - E.g. Grid accounting, interactive jobs, ...
 - Use of JSDL extensions ?
- **Some other issues could/should probably be addressed by the “default” JSDL directives**
 - E.g. job collections, resource ranking, etc.

<http://www.pd.infn.it/grid/jra1/CREAMJDL-vs-JSDL.pdf>