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Hands on Session: Single Job Submission

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- Information service
- Single job JDL example
- Single advanced job example
- Hands On example
- Links

- VO-specific information on existing Grid resources

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

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

- Other information on existing Grid resources

```
ldapsearch -x -h <hostname> -p 2170 -b mds-vo-name=resource,o=grid!
```

```
ldapsearch -x -H ldap://central-1.grid.seed:2170
```

```
-b mds-vo-name=GRIDSEED-2,mds-vo-name=local,o=grid
```

```
ldapsearch -x -H ldap://ce-1.grid.seed:2170
```

```
-b mds-vo-name=GRIDSEED-1,o=grid
```

```
ldapsearch -x -H ldap://se-2.grid.seed:2170
```

```
-b mds-vo-name=resource,o=grid
```

```
ldapsearch -x -H ldap://central-1.grid.seed:2170
```

```
-b mds-vo-name=local,o=grid
```

```
-x "GlueSAAccessControlBaseRule=gridseed"
```

```
GlueChunkKey
```

- Query the information system

```
[vlada@sopocalo-ui ~]$ lcg-infosites --vo aegis ce
```

```
#CPU      Free Total Jobs      Running  Waiting  ComputingElement
-----
352       192    4           4         0  cream.ipb.ac.rs:8443/cream-pbs-aegis
352       192    4           4         0  ce64.ipb.ac.rs:2119/jobmanager-pbs-aegis
64        64     0           0         0  ce.mi.sanu.ac.rs:2119/jobmanager-pbs-aegis
50        50     0           0         0  cluster1.csk.kg.ac.rs:2119/jobmanager-pbs-aegis
48        48     0           0         0  grid01.rcub.bg.ac.rs:2119/jobmanager-pbs-aegis
24        24     0           0         0  grid-ce.etf.bg.ac.rs:2119/jobmanager-pbs-aegis
128       127    0           0         0  ce-atlas.ipb.ac.rs:2119/jobmanager-pbs-aegis
64        62     0           0         0  grid01.elfak.ni.ac.rs:2119/jobmanager-pbs-aegis
```



Information service (3)

```
[vlada@sopocalo-ui ~]$ lcg-infosites --vo aegis se
```

Avail	Space(Kb)	Used	Space(Kb)	Type	SEs
30109361	5092891			n.a	grid-ce.etf.bg.ac.rs
438145921	42354610			n.a	se.csk.kg.ac.rs
11482700718	7711308602			n.a	dpm.ipb.ac.rs
11482700718	7711308602			n.a	dpm.ipb.ac.rs
11482700718	7711308602			n.a	dpm.ipb.ac.rs
30109361	5092891			n.a	grid-ce.etf.bg.ac.rs
72148274	41391919			n.a	grid15.rcub.bg.ac.rs
1480770224	1140031			n.a	grid02.elfak.ni.ac.rs

- Simple single job example:

```
[
Executable = "script.sh";
StdOutput = "stdout.txt";
StdError = "stderr.txt";
InputSandbox = {"script.sh"};
OutputSandbox = {"stdout.txt", "stderr.txt"};
Requirements = RegExp("ce64.ipb.ac.rs*", other.GlueCEUniqueID);
]
[vlada@ui prenos]$ cat script.sh
echo `pwd`
/bin/hostname
/bin/date
```

- Advanced single job example (NAMD):

```
[  
  JobType           = "Normal";  
  CPUNumber         = 2;  
  Executable        = "script.sh";  
  StdOutput         = "std.out";  
  StdError          = "std.err";  
  InputSandbox      = {"script.sh", "bench.tgz"};  
  OutputSandbox     = {"std.out", "std.err"};  
  Requirements      = RegExp("ce64.ipb.ac.rs*", other.GlueCEUniqueID);  
]
```

- Advanced single job example (NAMD):

```
[vlada@sopocalo-ui for_upload]$ cat script.sh
```

```
#!/bin/sh -x
```

```
PROC_NUM=2
```

```
echo "*****"
```

```
echo "Running on: $HOSTNAME"
```

```
echo "*****"
```

```
if [ "x$PBS_NODEFILE" != "x" ] ; then
```

```
    echo "PBS Nodefile: $PBS_NODEFILE"
```

```
    HOST_NODEFILE=$PBS_NODEFILE
```

```
fi
```

```
if [ "x$HOST_NODEFILE" = "x" ]; then
```

```
    echo "No hosts file defined. Exiting..."
```

```
    exit
```

```
fi
```

```
echo "Creating host file..."
```

```
export NODES=`cat $PBS_NODEFILE`
```

```
export NODELIST=nodelist
```

```
echo group main > $NODELIST
```


- `script.sh` continued:

```
for node in $NODES ; do
    echo host $node ++shell ssh >> $NODELIST
done
echo "Nodelist file:"
cat $NODELIST
tar zxvf bench.tgz
/opt/exp_soft/aegis/namd-2.7b2/charmrun ++remote-shell ssh ++nodelist $NODELIST +p$PROC_NUM /opt/
    exp_soft/aegis/namd-2.7b2/namd2_charm benchmark/apoal.namd
echo "Creating the archive."
tar zcvf izlaz.tgz benchmark/
echo "Uploading archive to SE:"
lcg-cr --vo sgdemo -l lfn:/grid/sgdemo/vlada/namd_example002.tgz file:izlaz.tgz
echo "Finished"
```

- 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 jobs

- 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