How To Use The UI command line

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Summary

Fist Part

- a brief description of the machines used during hands-on
- description of the User Interface environment
- explaining the User Interface commands specifying the options used during the demo

Second Part

- a brief description of what I am going to show in the demo
- simple job submission examples

Brief description of the machines used during hands-on

- lx01.hep.ph.ic.ac.uk for User Interface in London
- grid004f.cnaf.infn.it for Broker, Logging, Job Submission and for User Interface rpm installation in Bologna;
- grid001f.cnaf.infn.it for Information Index in Bologna;
- lxde01.pd.infn.it for CE in Padova
- skurut.cesnet.cz for CE in Praga
- bbqmi.infn.it for CE in Milano
- sunlab2g.cnaf.infn.it for Replica Catalog in Bologna

User Interface external pkgs

The external packages used by the User Interface are the following:

- python-2.1.1
- swig-1.3.7
- expat-1.95.1 (is used only by Logging Client)
- classads (is used only by Broker Client)
- ssl-0.9.0b
- gsincftp-0.3
- gsi-wuftp-0.5
- GAA (globus_gaa)
- GSS (globus_gss_assist and globus_gss)

WP1 User Interface pkg

The WP1 User Interface is held under <*install*>path:

DIRS	FILES
bin	JobAdv.py, JobAdv.pyc, UIchecks.py, UIchecks.pyc, UIutils.py, UIutils.pyc, dg-job-cancel, dg-job-get-logging-info, dg-job-get-output, dg-job-id-info, dg-job-list-match, dg-job-status, dg-job-submit, libRBapi.py, libRBapi.pyc
lib	libLBapi.a, libLBapi.la, libLBapi.so, libLBapi.so.0, libLBapi.so.0.0.0, libLOGapi.a, libLOGapi.la, libLOGapi.so, libLOGapi.so.0, libLOGapi.so.0.0.0, libRBapic.a, libRBapic.la, libRBapic.so, libRBapic.so.0, libRBapic.so.0.0.0
etc	UI_ConfigENV.cfg, UI_Errors.cfg, job_template.tpl
utils	set_python

Description of the User Interface environment (1)

- the default *<install>* path is */opt/edg*. (at the moment the rpms are not relocable, but they will be after the porting to gt2)
- the User Interface installation consists of four directories and the most important are:
  - */opt/edg/bin* contains the commands (it should be added to the user PATH environment variable)
  - */opt/edg/etc* contains some User Interface configuration files. The most relevant for the user is *UI_ConfigEnv.cfg* (the only editable one) that contains some information such as address and port of accessible RBs and LBs.
- common *command* options are *-config*, *-noint*, *-debug*, *-help* and *-version*:
  - **-help** displays command usage
  - **-version** displays User Interface version

Description of the User Interface environment (2)

- there are few environment variables that have to be set
  - EDG_WL_UI_INSTALL_PATH=/opt/edg
  - PYTHONPATH=$EDG_WL_INSTALL_PATH/lib
  - LD_LIBRARY_PATH=$PYTHONPATH:$LD_LIBRARYPATH
  - PATH=$EDG_WL_UI_INSTALL_PATH/bin:$PATH

- the user certificate and the user key can stay in the "standard location":

  ~/.globus/{usercert.pem,userkey.pem}

  so, it is not necessary to set X509_* variables.

(Otherwise the user needs to set X509_USER_PROXY, X509_USER_CERT and X509_USER_KEY)

Description of the User Interface environment (3)

- **for the demonstration:**
  - the files that describe the submitting jobs are in the */home/<user>/DEMO* dir:
    - jobad6.jdl (short duration), jobadRC1.jdl and jobadRC2.jdl (long duration)
  - the input and executable files are in the */home/<user>/DATA* and */home/<user>/HandsOn-0409* dirs:
    - executable W P1testC is used by jobad6.jdl file
    - executable W P1testF is used by jobadRC1.jdl and jobadRC2.jdl files
  - the commands run in the */home/<user>/DEMO* dir, but it is not mandatory.

Demo commands and options (1)

During the demo the commands and options are:

- **dg-job-submit** allows the user to submit a job for the execution on remote resources
  - **-r, -resource res_id** the job is submitted by the Broker to the resource identified by res_id
  - **-i, -input input_file** the user must choose a resource id from a list of resources
  - **-n, -notify e_mail_address** an e-mail message is sent to the specified e-mail address when the job enters in one of the following status: READY, RUNNING, ABORTED or DONE
  - **-o, -output out_file** the generated dg_jobid is written in the file out_file

Demo commands and options (2)

- **dg-job-get-output** requests to the Broker the job output files, specified by the OutputSandbox attribute of the job-ad, and stores them on the submitting machine local disk
  - **-i, -input input_file** the command returns the OutputSandbox files for each dg_jobId contained in the input_file
  - **-dir directory_path** retrieved files, listed in the OutputSandbox field of the submitted job file, are stored in the location indicated by **directory_path/<dg_jobId unique string>/**
- **dg-job-list-match** returns the list of resources which fulfills job requirements

Demo commands and options (3)

- **dg-job-cancel** cancels one or more submitted jobs
  - **-i, -input input_files** cancels dg_jobId contained in the input_files
- **dg-job-status** displays bookkeeping information about submitted jobs
  - **-i, -input input_file** displays bookkeeping info about all dg_jobId contained in the input_file
  - **-full** displays a long description of the queried jobs
- **dg-job-id-info** parses the dg_jobId string and displays formatted information contained in the job identifier.

Demo commands and options (4)

- **dg-job-get-logging-info** displays logging information about submitted jobs

  - **-i, -input input_files** retrieves logging info for all dg_jobId contained in the input_file

  - -o, -output out_file the logging information are written in the file specified by out_file instead of the standard output.

Second Part

- a brief description of what I am going to show in the demo:
  - use London machine for the User Interface (already installed)
  - use grid004f machine to install User Interface rpm,
    example of configuration files that must be checked
  - use two User Interface to submit jobs

Simple example of job submission (1)

start installing User Interface rpm on the grid004f :

- download

  http://datagrid.in2p3.fr/distribution/datagrid/wp1new/RPMS/userinterface-1.0.0-1.i386.rpm

- run rpm -ivh userinterface-1.0.0-1.i386.rpm
- /opt/edg is the default installation path
- open UI_CongfigErr.cfg to check that all information are right
- check the directories:
  - */home/wp1/DATA, /home/wp1/HandsOn-0409, /home/wp1/DEMO*

On lx01.hep.ph.ic.ac.uk : **/home/datamat/DEMO** dir

- start to submit a job

Example of a ("short") job

- **dg-job-submit jobad6.jdl -o job_list_29 -n elisabetta.ronchieri@cnaf.infn.it**

  - The notifications will be send the user by Broker and Job Submission when the job is one of the following: READY, RUNNING, DONR or ABORTED.

    Broker will send the message when the job passed the match making.

    Job Submission will send the message when the job started its execution on the CE, and give back the CE name.

    Broker will send another message when job finished its execution.

  - If proxy certificate validity is expired, user has to insert his pwd
  - User can use dg-job-status command to check job current status, especially its destination.
  - The command returns job identifier <dg_jobId> which has been saved in the following file:

    /home/datamat/DEMO/job_list_29

dg-job-status -i job_list_29 or **dg-job-status <dg_jobId>**

  - Job Destination should be skurut.cesnet.cz:2119/jobmanager-pbs/wp1

Example of a ("bng") job (1)

- **dg-job-submit jobadRC1.jdl -o job_list_29**

  dg-job-status -i job_list_29

  - Now, the jobs in the file job_list_29 are two and user can choose the **second job.**
  - Job Destination should be lxde01.pd.infn.it:2119/jobmanager-lsf/grid01

  dg-job-status -i job_list_29 -full

  - Using **-full** option, user receives jobs additional information like classads

- **dg-job-submit jobadRC2.jdl -o job_RC_29**

  dg-job-status -i job_RC_29

  - Job Destination should be bbqmi.infn.it:2119/jobmanager-pbs/dque

Example of a ("long") job (2)

- **dg-job-list-match jobadRC2.jdl**
  - List the resources that match job requirements (should be):

    bbq.mi.infn.it:2119/jobmanager-pbs-dque

    skurut.cesnet.cz:2119/jobmanager-pbs-wp1
  - The first resource has a better rank than skurut

dg-job-submit jobadRC2.jdl -r skurut.cesnet.cz:2119/jobmanager-pbs-wp1 -o job_RC_29

- The user overwrites the Broker decision, and she (he) has the same job submitted in two different resources.

dg-job-status -i job_RC_29

- Now the jobs in the file job_RC_29 are two, and user can choose the **option a.**
- Job Destination should be bbq.mi.infn.it:2119/jobmanager-pbs/dque for the job at the top of the list and skurut.cesnet.cz:2119/jobmanager-pbs/wp1 for the last one.

Example of jobs

- **dg-job-get-logging-info -i job_list_29 -o job_29.log**
  - user can choose the **first job**
  - the whole information for job selected is written in the file **job_29.log**
  - user should check in the file **job_29.log** that there are JobDone events

  dg-job-status -i job_list_29
    - user can choose the **first job.**
    - user should verify that the job status is Done.

At this moment user could check if she (he) has received Broker and Job Submission notification via e-mail

Example of jobs

- **dg-job-output -i job_list_29 -dir /home/datamat/DEMO**
  - user can choose the **first job**
  - user should verify that the destination dir <dg_jobId unique number> of Output Sandbox under /home/datamat/DEMO has been created, and the files listed in the Output Sandbox field in the job description file (jobad6.jdl) are in the destination dir.

THE END