Remote Job Submission

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Ibercivis
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A BOINC project can have several apps.
Ibercivis subproject concept

- Ibercivis inserts the concept of subproject
- Each application belongs to a subproject
- A new table *subproject* has been created
- A scientist can send jobs (group of workunits) to each subproject
Scientists can access to a *minishell* trough ssh in order to send, check status... of jobs

- Each scientist is authorized to send jobs to one or more subprojects
- A group of shell scripts are provided to the scientist in order to access to the minishell
 Commands

### Scientist commands
- icivis_send_job
- icivis_status_job
- icivis_erase_job
- icivis_queue_status
- icivis_profile
- icivis_debug

### Minishell
```bash
#!/bin/bash

#!/usr/bin/bash

#include

#nounos

#commands

#end commands

#start commands

#start commands
```
Jobs

- A job is a group of workunits
- A new table job was created
- Scientist can send jobs using the icivis_send_job command
  - icivis_send_job nick priority jdl_file list_of_files
  - The jdl file contains
    - proyecto=name_of_subproject
    - script=name_of_script_to_be_called
    - nwus=number_of_workunits
    - nombre=name_of_the_job
- Workunits can be assimilated in their own job folder
Server scripts

- A daemon `crea_trabajo` is running for each subproject
- The number of unsent results are maintained between a MAX and a MIN values
  - If the number of unsent results are below the MIN value the script provided by the jdl file is called
  - New workunits are created up to MAX value or until the job is finished
  - If the number of unsent results are over the MAX value, no new workunits are created
  - If the nwus has been reached, a new job is selected from the queue
Creation of workunits
Principal changes

- New table subproject, subprojectid field inside app table
- New table scientist
- New table scientist_auth
- New table job, jobid field inside workunit table
- Necessary patches in the source code
- crea_trabajo script (one instance for each subproject)
- One script to create workunits for each subproject
Principal features

- *Unlimited* number of workunits inside a job
- Not all workunits created at once
- Remote access
- Error handling
- Continuity
Continuity

Very long workunits

- Can be splitted in waves
- Output files are assimilated and used as input files for new workunits
- A new job is created for each wave, continuityid field
- As many waves as needed
Continuity

**javi-glu**
- 10 (+16) oleadas ~ 1296 WUs completado 134 % (17539 WUs)
- terminadas 3
- oleada 26 1 WUs (0 %)

**javi-asp**
- 10 (+10) oleadas ~ 1296 WUs completado 133 % (17406 WUs)
- terminadas 3
- oleada 20 1 WUs (0 %)
Example of use

Preparation

- The script to create the workunit is placed
- The scientist send us his id_rsa.pub file
  - The scientist has access to the minishell

Use

- The scientist send a job using ./icivis_send_job
- A new tar.gz is placed in the queue
- The instance of crea_trabajo expand the tar.gz file
- The crea_trabajo script calls the subproject script as many times as needed
- The scientist can check the status of his job using icivis_status_job
Numbers

- Installed in
  - Ibercivis (twice), Spain and Portugal
  - Ibercivis_Alfra
  - Brazil

- **Ibercivis**
  - 3221 jobs created
  - 16 subprojects
  - 41 apps
  - 18 scientists
Future work

- Nice web portal
- Graphical information
- More Statistics
- QoS
Questions?

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