▸ Disclaimer

  ▸ This is an input to discussion

  ▸ Nothing is casted in stone

  ▸ However, we have to define objectives and milestones to decide where to go and monitor the progress

Multi-cloud resource usage

▸ Discussion during the EGI TF in Prague, Sep 2012 on practical steps towards a multi-cloud usage demo in France (biomed case)

▸ The following steps were agreed:

　▸ Development of a VMDIRAC Driver for OpenStack manager (CC case) – *V.Mendes, M.Puel, V.Hamar*

　▸ Development of a VMDIRAC Driver for StratusLab based either on OCCI or OpenNebula plugins – *V.Mendes, M.Airaj*

　▸ Setting up a demo to run biomed applications using DIRAC with the 2 cloud managers above – *A.T., T.Glatard*

▸ We did not advance too much so far

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- The testbench

  - FG-DIRAC infrastructure

  - DIRAC WMS + VMDIRAC for cloud VM management

  - Cloud resources - OpenStack/CC + StratusLab + others(?)

  - Biomed applications

What do we need

- Missing drivers for the cloud managers used

  - Contextualized (problematic).

    - The status of the development should be updated, if not ready, see next point

  - Simple with SSH access - relatively easy to provide using ad hoc driver

    - Needs dynamic update of the corresponding DIRAC Site description

- Interface to the Marketplace catalog to discover available VM images

- Tools to discover the cloud resource status

  - Availability, capacity, prices, etc

  - Based on Federated Cloud TF outcome (?)

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- Instantiate small bunches of VMs in each cloud
    - By hand using corresponding UIs
    - Standard image, e.g. CERNVM batch WN
- Describe the resulting DIRAC Site as a collection of IP addresses in DIRAC configuration
- Include the site into the pool of DIRAC resources
- Run biomed application on the new site
- Sort out all the issues
    - Network connectivity
    - Software deployment (CVMFS)
    - All the rest
- Time scale – Jan, 2013
- *A.T., V.Hamar, M.Puel*

- Setup VMDIRAC components as part of the FG-DIRAC service

- Configure VM Scheduler to use ad hoc drivers to submit VMs to the test clouds

  - With automatic DIRAC resources configuration update

- Run biomed applications on the dynamically allocated virtual site

  - Test and measure performance of the resource allocation triggered by the user job submission

  - Test the VM release mechanism

- Time scale – March, 2013

- *V.Hamar, V.Mendes*

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- Use Marketplace catalog for VM image discovery

- Update the cloud drivers to use the VM images from the Marketplace

- Run biomed applications with the target platform specification in the job

  - Test automatic discovery of the appropriate VM image

  - Test VM instantiation with the job requirements:

    - Number of cores, memory, disk space, etc

- Time scale – Apr, 2013

- *M.Airaj, V.Mendes, V.Hamar*

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- Update the VM scheduler to get information about the cloud resource status

- Define different VM instantiation strategies based on the cloud status information

- Run biomed applications using different VM scheduling strategies

  - Measure the performance

- Time scale – May, 2013

- *"Federated Cloud", V.Mendes + all*

- Add more cloud managers/installations

- Repeat the previous actions with the new clouds