Octopus - site report

ICAT F2F October 2016

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OCTOPUS

• Part of STFC Central Laser Facility at Harwell Campus

- Astra Gemini
- Vulcan
- Artemis
- Ultra
- OCTOPUS

- High-power, ultra-intense lasers for extreme conditions science & applications
- Laser applications in the physical and life sciences (materials, chemistry, biology)

• National imaging facility with peer-reviewed, funded access
• Located in Research Complex at Harwell
• Cluster of microscopes and lasers and expert end-to-end multidisciplinary support
Octopus challenges

- Large and growing variety of imaging and analysis modalities and tools
- Changing variety and combinations of
  - studies, samples, instrumental and analysis techniques, platforms, licensing models, dataset types, computing architectures, algorithms
- Challenging image analysis – often very manual
- User expertise (or lack of it) in numerical/computational work

- Motivation for the IJP
Deployment history 1

• Development system on Octopus hardware
  – Server running ICAT, IDS and IJP
  – Two worker nodes
  – Torque; puppet

• Production system being set up on SCD RIG VMs
  – Server running ICAT, IDS and TopCAT (with IJP GUI)
  – Separate server for IJP and batch connector
    • Hit problems with migration from Ubuntu to RedHat
Deployment History 2

• Octopus server suffered fatal hardware failure
• Created new development system from SCD resources
• Initial system used SCD Cloud VMs
  – ICAT / IDS / TopCat server
  – IJP server + Torque batch connector
  – Single worker node
• Worker node too underpowered
  – Added two larger VMs from a different pool
  – Later removed original worker
Current status

• Octopus using development system to develop and test ingest process and jobscripts
• Worker node performance is still an issue
• Production configuration still under discussion