

# University of Johannesburg

*South Africa*

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**SITE REPORT**



# OVERVIEW

- UJ Data Centre Upgrade
- Hardware
- Network
- Status
- Applications
- Issues
- Future
- Links
- Contributions

# UJ DATA CENTRE UPGRADE

- Overhaul of Data Centre's (Dec 2009):
  - 3 of the 5 data centre's overhauled
    - Thermal Capacity increased from 3KW/rack to 8KW/rack
  - Green Initiative
    - APC In-Row Cooling Racks Installed
    - Hot isle containment system
    - Down-blow AC units air cooled to 1 C
    - Operating Temperature Increased from 15 C to 19C





# HARDWARE/OS

- Most services still on SL4
- Headnode runs multiple services
  - Torque
  - Puppet
  - Cobbler
  - VM's for UI's and CE's

# HARDWARE (CONTD)

Storage comprising :

1 x Dell MD1000 Storage shelf (7TB raw)  
connected to a new SE.

New Worker Nodes comprising :

16 x Blades on a Dell M605 blade chassis  
with 2 x 6 Cores, 32GB Ram per blade  
(AMD)

~260 Cores available

# HARDWARE (CONTD)

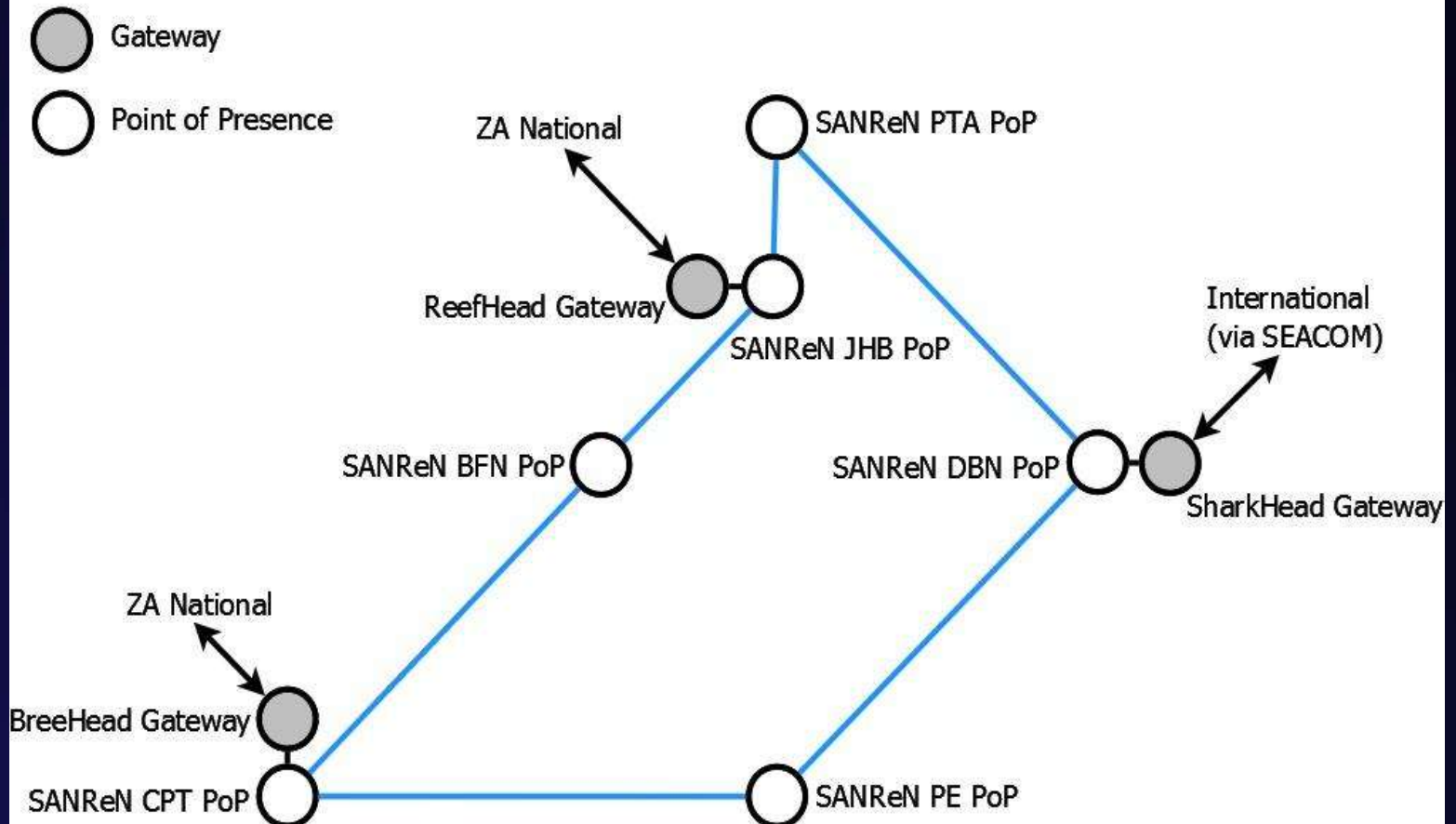




# NETWORK

- On SANREN network – 10 Gig Backbone

## SANReN High-Level Topology



# NETWORK

- On SEACOM Cable
- UJ reserved 500Mb/s Bandwidth



# STATUS

- Started Discussion on the choice of Tier 3 for ATLAS
- WN's, CE's and UI's to be updated to SL5 as requested by LHC Computing Grid
- Virtualisation of more services
  - DHCP, Puppet, Cobbler and monitoring
- Local repos for SL5 + glite

# APPLICATIONS

- On OSG :
  - Full ATLAS VO Support
  - ENGAGE VO runs a few jobs
  - local ATLAS users submit remote jobs from local UI
- On SAGrid :
  - Will allow SAGrid VO's :-
    - ALICE VO
    - e-NMR VO
    - WISDOM VO
    - GILDA – Separate infrastructure

# ISSUES

- Research Funding – for HW and training
- Additional complexity to manage both OSG and gLite middleware
- Manpower – Grid services not primary job/role for the 3 people – Addressing part of the problem with single National Operations Team
- Low Usage – Marketing of services and availability has been done but researchers are slow to start
- Final VO acceptance policy required
- Central IT funding for cluster – funding resources under pressure

# FUTURE

- Hardware Upgrade :
  - Storage to be increased. Quantity still to be determined
  - Worker Nodes to be increased if need arises as usage grows
- Tier 3 level for ATLAS currently being reached. Storage requirement

# LINKS

- University of Johannesburg  
<http://www.uj.ac.za>
- UJ Physics  
<http://physics.uj.ac.za/cluster>
- South African Grid  
<http://www.sagrid.ac.za>



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QUESTIONS