



The Grid-Ireland NGI

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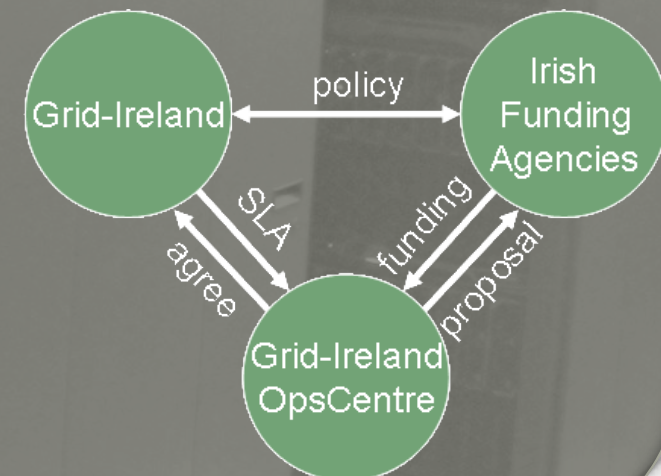


Background

- ◉ Initial Instance (1999-2002), 3 Project Partners
- ◉ CosmoGrid (2003-2007)/WebCom-G
 - Application/User Community focused
 - AstroPhysics, Marine Science, M/W research
 - 7 partners, 60 scientists
 - Grid gateways installed at 18 sites
- ◉ e-INIS (2007-Present)
 - Integrated e-Infrastructure
 - Grid, Data, Network, HPC
 - Large scale distributed storage, 10Gb network
- ◉ EDG, EGEE-(I-III), CrossGrid, Int.EU.Grid, EGI/EMI

Grid-Ireland Status

- EGI: Many countries & many solutions
- 1999-2009: G.I has been an unincorporated association
- May-09: G.I was incorporated:
 - Grid-Ireland National Grid Initiative Limited
 - Company with no share capital, limited by guarantee
 - non-profit, non-commercial, non-political
 - Jul-09: G.I applies for charitable status
- OpsCentre in TCD runs Irish Grid for Grid-Ireland
 - Sep-09: OpsCentre signs SLA with G.I



Grid-Infrastructure



- SouthEasternEurope
- SouthWesternEurope
- UKI
- GridIreland
 - cpDIASie
 - csQUBuk
 - csTCDie
 - csUCCie
 - giAITie
 - giDCUie
 - giDITie
 - giITCie
 - giITTAie
 - giITTRie
 - giNUIMie
 - giRCSIie
 - giULie
 - giWITie
 - mpUCDie
 - obsARMuk
 - scgNUIGie
- LondonT2
- NorthGrid
- ScotGrid
- SouthGrid
- Tier1A
- Countries

Grid-Ireland Architecture

- Points of Presence at Institutions (Gateway)
 - Homogeneous H/W & S/W Resources
 - Uniformly Configured
- Sites connect/share resources via Gateway
- Hierarchical National Profile of Grid Resources
- Controlled by OpsCentre
 - Quattor based
 - Tested first on Grid-Ireland testbed
 - Scaled replicas of production
 - Secure distribution of Software
- Heavy use of Xen Virtualisation
 - Significantly lower total cost of ownership
- 2x OpenNebula instances

National Services

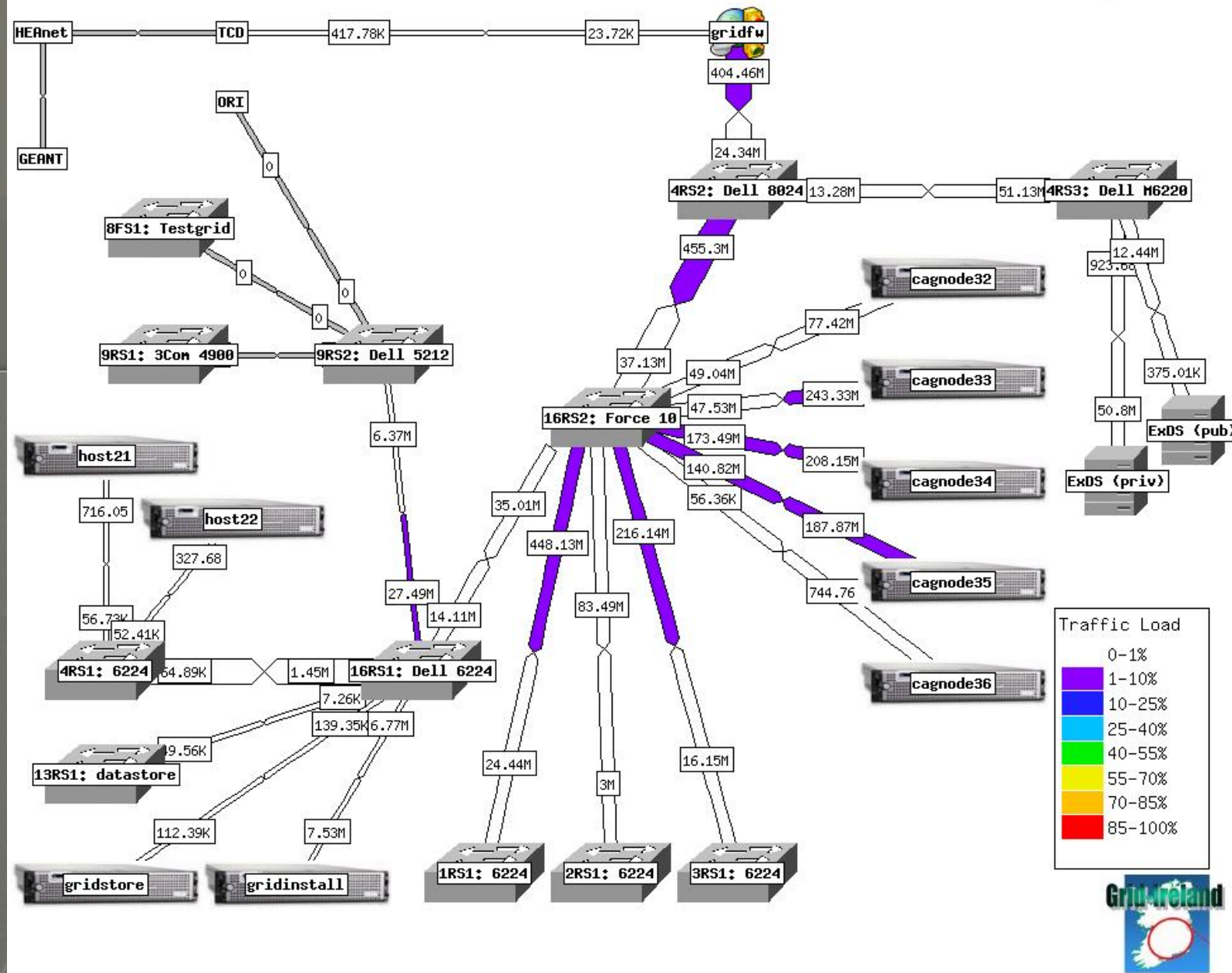
- ◎ OpsCentre runs national grid services
 - VOMS, WMS/LB, BDII, LFC, R-GMA
 - 11 Grid-Ireland established VOs
 - P-Grade portal
 - Adaptive eLearning System
 - Multiple user modules
 - Requires user feedback
 - National CA
 - 2 regional authorities
 - Work to integrate Grid and National/Institutional federated identity management systems

OpsCentre

- Based in Trinity College Dublin
- Small core team of experts
 - Staff in place since 2003/2004
 - Centrally manage national/site services
 - Participate in EGI functions
 - Interact with users and communities
- Operator on Duty
 - Weekly rotation
 - GI helpdesk ticket and incident handling
 - Acts on EGI operational issues (UK/I federation)
 - GGUS, SAMS, Nagios
 - Prepare hand-over report

National Monitoring

- ◉ Infrastructure is continually monitored
- ◉ Critical for successful operations
- ◉ Multiple systems
 - Lemon & GI SAM integrated with national Nagios
 - WeatherMap
 - Cacti
 - NTOP
 - Active Security Infrastructure (ASI)
 - Pakiti



e-INIS Integrated Infrastructure

- ◉ National Initiative

- Academic Institutions, NREN

- ◉ Objectives

- Enhance activities to create sustainable e-infrastructure offering
 - Core HPC for all university and national research labs
 - Single point of access for integrated Grid, computational, data , network resources
 - Sustainable model for the future

Collaborations

- ◉ EGI –Inspire
 - Core program of EGI.
- ◉ EMI (European Middleware Initiative)
 - Harmonized Grid middleware
- ◉ HELIO
 - Heliophysics Integrated Observatory
- ◉ MantyChore
 - Networking Infrastructure as a service
- ◉ StratusLab
 - Cloud/Grid integration and virtualisation

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