



Enabling Grids for E-science

# EGEE Asia Pacific Regional Operation Center

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*ASGC*

*ISGC 2008*

*April 10, Taipei*

*<http://www.eu-egee.org/>*

*<http://aproc.twgrid.org/>*

[www.eu-egee.org](http://www.eu-egee.org)



- **Asia Pacific Operation Center**
  - Introduction
  - CA Service
  - Tutorials
  - Site Deployment
  - Regional Availability
  
- **ASGC Service Availability**

- **APROC Mission**

- Provide deployment support facilitating Grid **expansion**
- Maximize the **availability** of Grid services

- **Services**

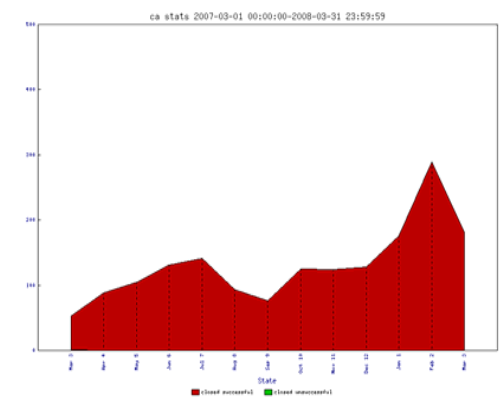
- ASGCCA Certificate Authority services
- Initial site deployment
- Continuous operations support
- EGEE global operations support





- Providing CA services since 2003
  - Serving Taiwan and Asia Pacific LCG/EGEE users
  - 290 tickets closed in Feb 2008
  
- Scalability concerns
  - New APGridPMA CAs will reduce loading
  - Investigate Member Integrated X509 Credential Services (MISC)

	Sinica	Asia Pacific	Taiwan
<b>Certificates</b>	811	335	145



- **Events since last year:**

- Grid Asia 07:                      1day      Induction
- Grid Camp 07:                    3day      Admin, Operations, Applications
  - With **CERN**
- MIMOS Tutorial 07:              5day      Application and Installation
  - With **EGEE NA3**
- ISGC 08:                            1day      Induction and Application

- **MIMOS Installation Tutorial - Malaysia**

- 25 virtual machines prepared for participants
  - Firewall, os and middleware configuration **errors**
  - **Instructions** were not explicit enough, which led to errors
  - Investigate INFN **GILDA** admin training resources
- Participants obtained valid certificates and joined APeSci VO

- Supports EGEE sites in Asia Pacific since April 2005
  - 21 production sites, 8 countries
  - 4 sites in certification process
    - China: Peking University PKU
    - Japan: Hiroshima University
    - Malaysia: MIMOS
    - Vietnam: IOIT-HCM
  - Additional support planned for other EUAsiaGrid partners
    - Philippines
    - Indonesia
    - Brunei
    - Thailand

KR-KISTI-GCRT-01 LCG_KNU	JP-KEK-CRC-01 JP-KEK-CRC-02 TOKYO-LCG2
IN-DAE-VECC-01 INDIACMS-TIFR	TW-FTT TW-NCUHEP TW-NIU-EECS-01 TW-NTCU-HPC-01 TW-THU-HPC Taiwan-IPAS-LCG2 Taiwan-LCG2 Taiwan-NCUCC-LCG2
NCP-LCG2 PAKGRID-LCG2	HK-HKU-CC-01
GOG-Singapore	Australia-ATLAS Australia-UNIMELB-LCG2

- **Preparation:**
  - Supplementary documentation
    - Registration procedures
    - Site preparation recommendations
      - *Non-middleware issues*
    - Summarize installation procedures
  - Training
  
- **Communication and interaction**
  - Email
  - Remote login for troubleshooting

Step	Days	Emails
Site Design Recommendations	3	7
Registration	1	6
Hardware / OS Setup	3	3
<b>M/W Installation and Configuration</b>	<b>45</b>	<b>45</b>
Certification / SAM Testing	8	4



- **Issues:**

- Major new release of new configuration tool version
  - Configuration parameters
  - Command line options
  - Documentation
- Incorrect firewall configuration for services
- Difficult to interpret error messages (install, configuration, testing)
- Email latency and lack of clarity

- **Recommendations:**

- ROC
  - Test and update supplementary documentation after major changes
- Site
  - Studying the EGEE users guide is important
  - Update ROC staff on status or new errors as often as possible
- Both
  - Improve communication
    - *Video conference or in visits to or from ROC*
  - Test and resolve network issues at the before deployment

- **March 2008 results**

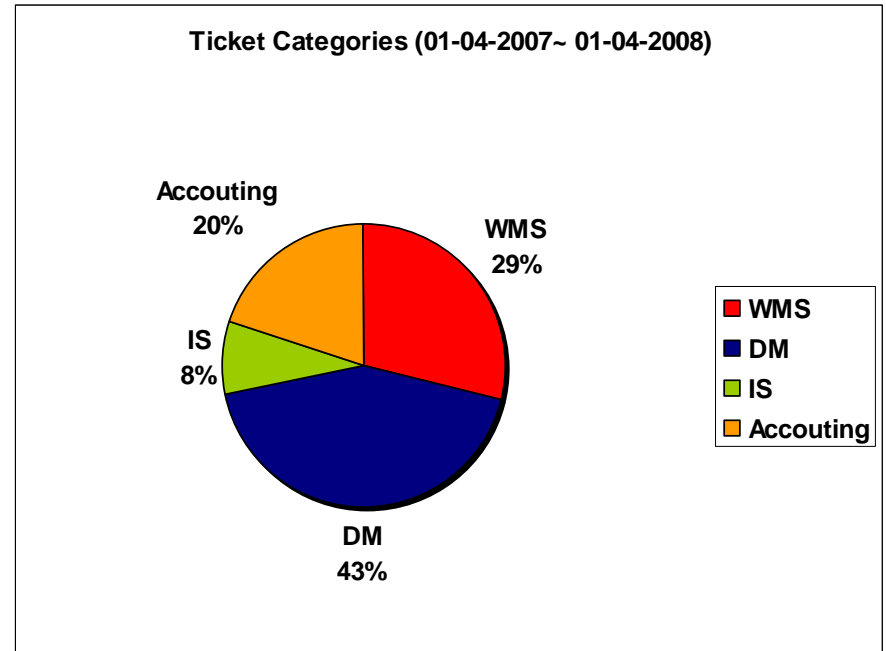
- 74% Availability

- **Issues**

- Configuration changes
- Heavy loading
- Service instabilities
- Network performance

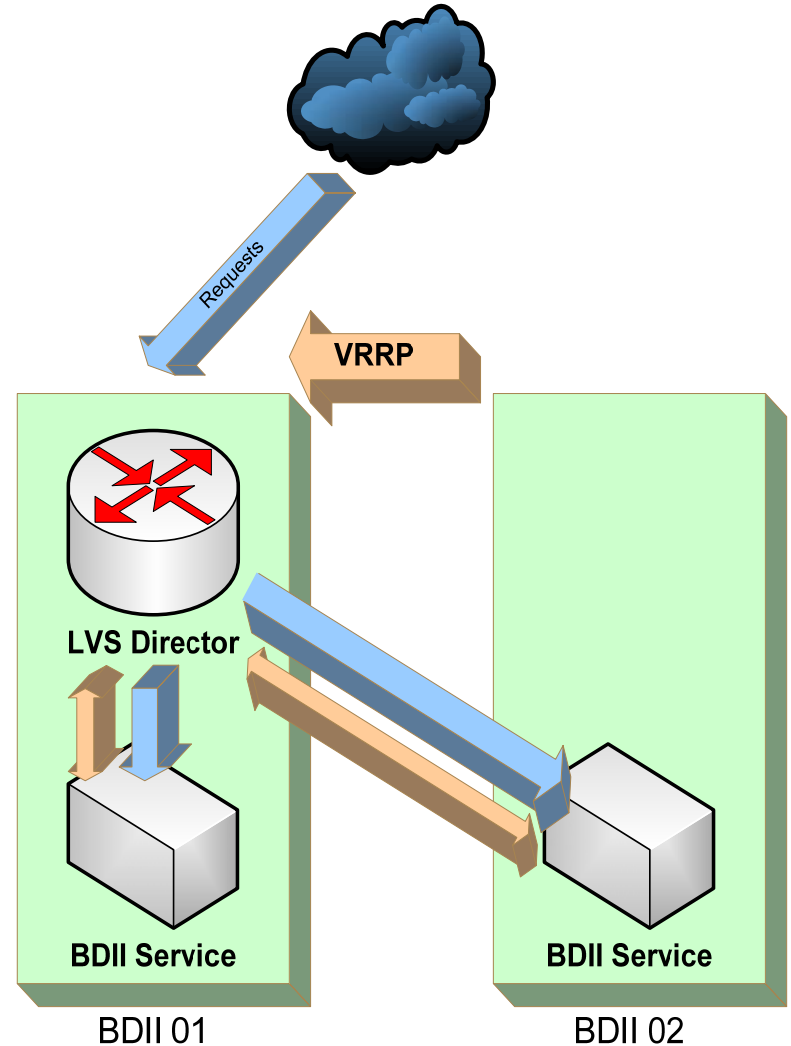
- **Possible solutions**

- Expand coverage of monitoring tools
- Improve detail and coverage to current trouble shooting guides
- Diagnostic scripts to isolate problems
- Use High Availability solutions

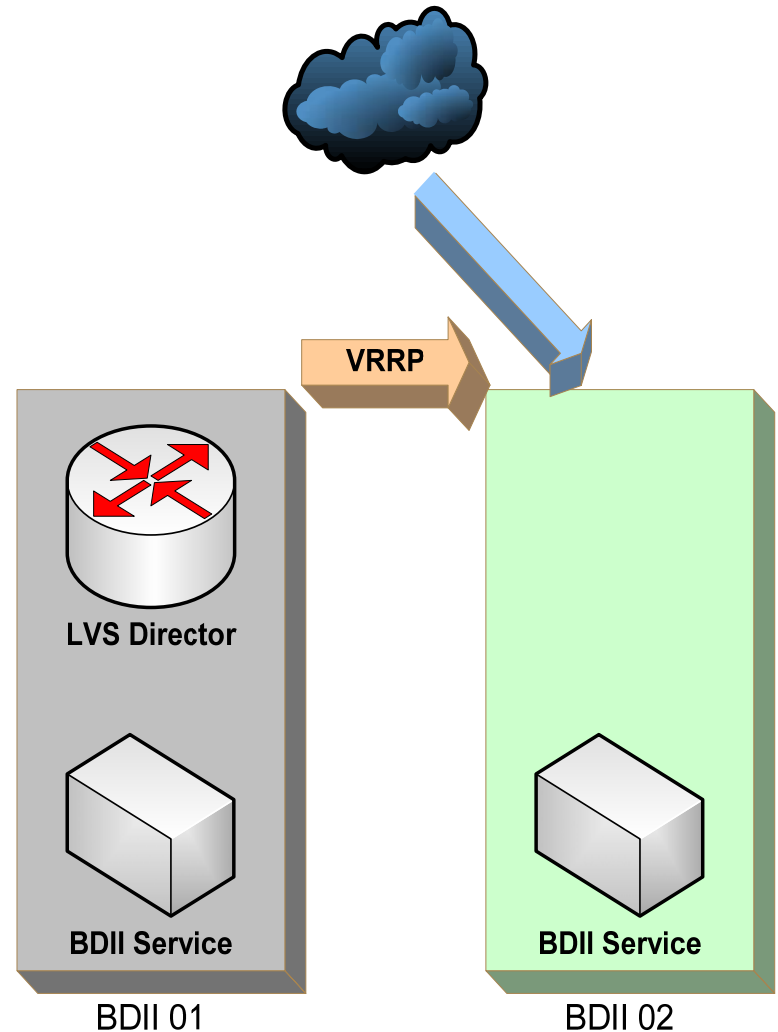


- Asia Pacific Operation Center
- **ASGC Service Availability**
  - High Availability Services
  - Monitoring and Notification
  - 24x7 coverage

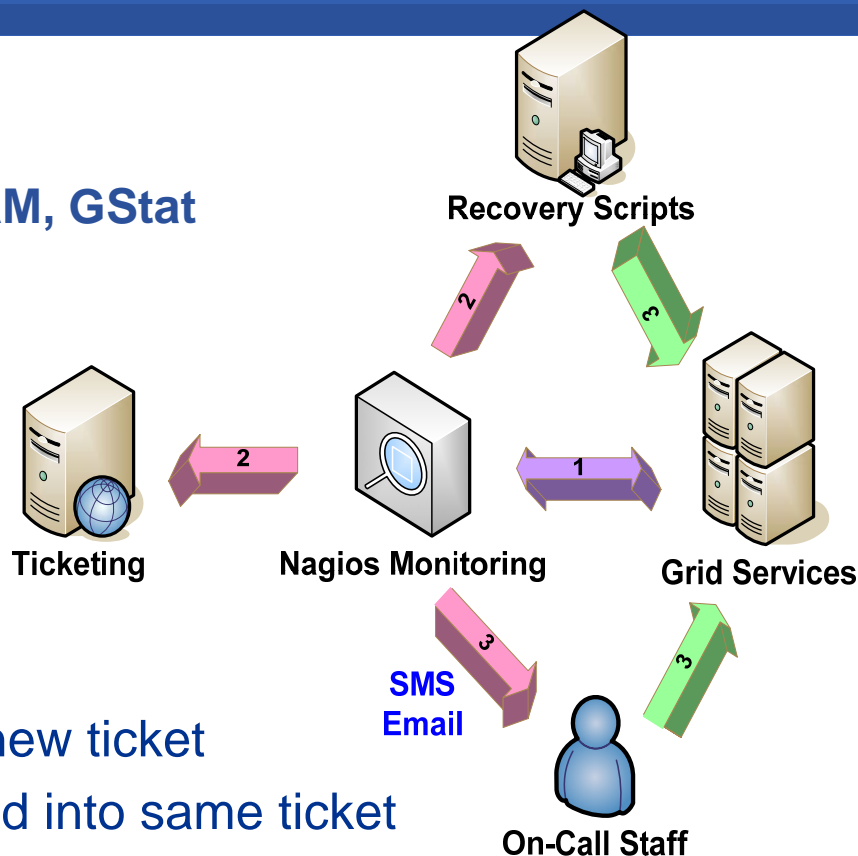
- **Virtual Router Redundancy Protocol**
  - Host failover
  
- **Linux Virtual Server**
  - Service failover
  - Load balancing



- **Advantages**
  - Easy to install
  - Fast failover
  - Customizable service checks
  
- **Issues**
  - Network restriction for VRRP
  - Scalability of LVS director
  - Increased complexity
  
- **Plans**
  - Extend HA to other services
  - Investigate Dynamic DNS solutions
    - See “WLCG Service Reliability - Best Practices” Tuesday presentation by James Casey



- **Ganglia, Smokeping, Weathermap, SAM, GStat**
- **Nagios service fault monitoring**
  - Facility, Network, Grid, ROC
    - 148 host and 570 services
  - SMS notification
  - Ticketing system integration
    - Faults automatically generate new ticket
    - Associated issues are combined into same ticket
  - Recovery scripts for a couple services
- **Future Plans**
  - Better integration of automatic recovery with Nagios
  - Incorporate work from WLCG Monitoring Working Group
  - CERN's Service Level Status integration





## • Service Class

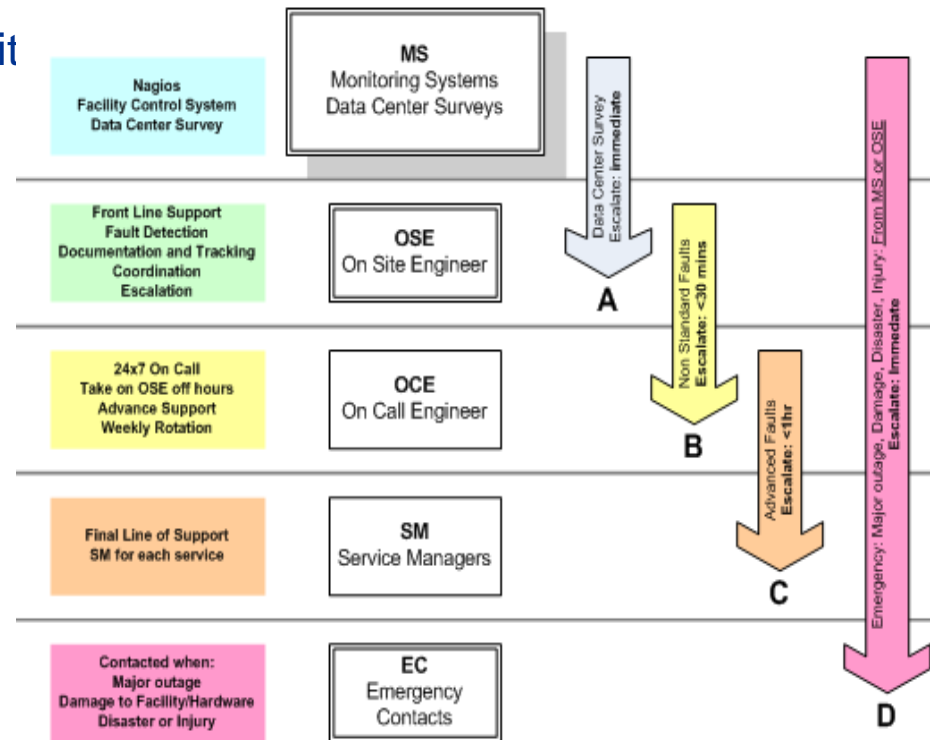
- **Foundation:** 1 hour response time
  - Facility, Network, DNS, DB, Monit
- **Critical:** 2 hour response time
  - Grid and Experiment Services
- **Best Effort:** next day
  - User Interface

## • Escalation

- On-site engineer
- On-call engineer – weekly rotation
- Service manager

## • Open Issues

- Hire additional on-site engineer for 16x7
- Add and improve set of recovery procedures and training



- **Asia Pacific ROC provides regional EGEE operation**
  - Challenges are still present to:
    - Stream line site deployment
    - Increase the availability of sites and resources
- **ASGC service availability depends on**
  - High availability solutions
  - Monitoring and notification
  - 24x7 processes
  - Key personnel expertise and responsiveness



- **Questions?**

- [roc@lists.grid.sinica.edu.tw](mailto:roc@lists.grid.sinica.edu.tw)
- <http://aproc.twgrid.org/aproc/>

- **Thanks to efforts from:**

- **ASGC Operations Team**

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