

6 stepping stones to SUCCESS

A technical roadmap

What's already there?

- A Task Force: <http://go.egi.eu/tf-fedclouds>
- Private Clouds provided by 6 Resource Centres
 - CESNET, Cyfronet, INFN/CNAF, KTH, NGS, SARA
- Software from 2 Technology Providers
 - StratusLab, EGI-InSPIRE JRA1
- A starting document: <http://go.egi.eu/435>

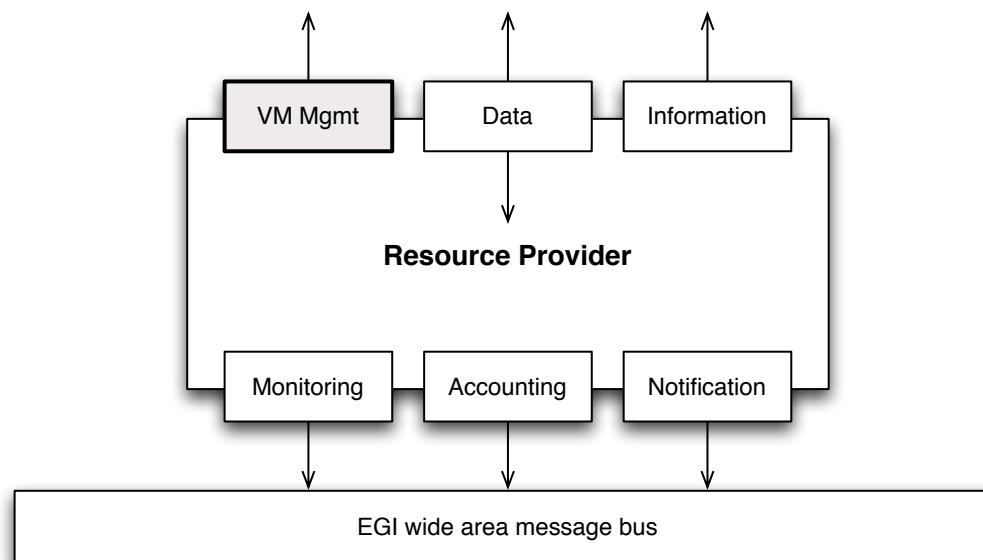
... and a plan!

“Running a pre-defined VM Image”

1. VM Image known and accessible
2. VM management commands: start, stop, dispose
3. Federated AAI restricts access to the running instance

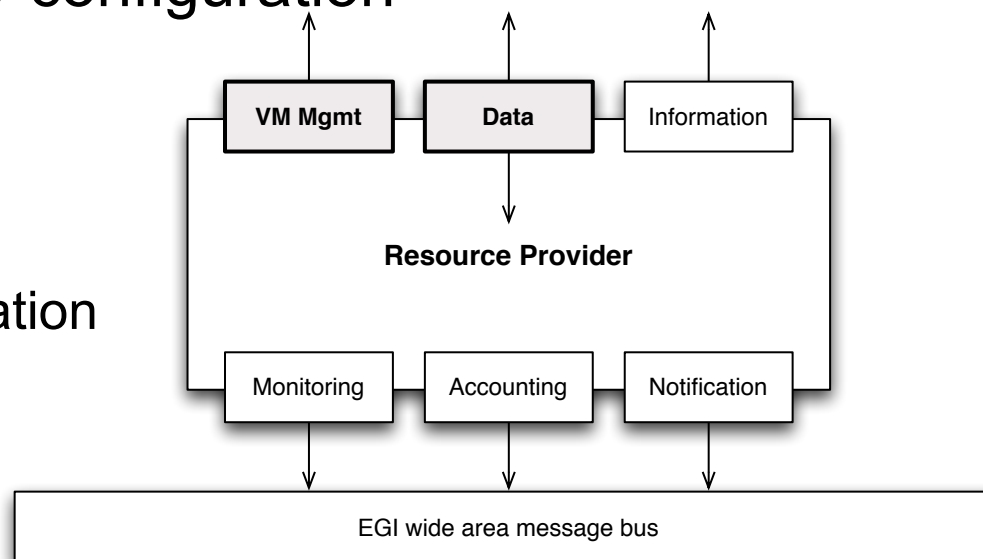
4. Services

- VM Mgmt
- AAI infrastructure
- Remote access



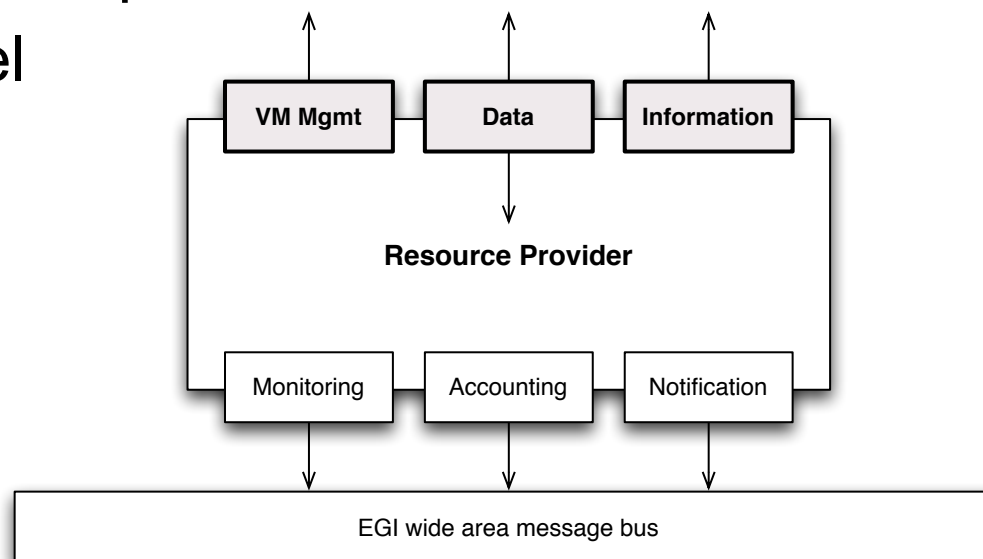
“Running my data and VM in the Infrastructure”

1. VM Image is generated off-line by the user
2. VM Image upload, snapshot download
3. Data resident with provider
4. Runtime link to data by configuration
5. Services
 - Data staging/access
 - VM Image contextualisation



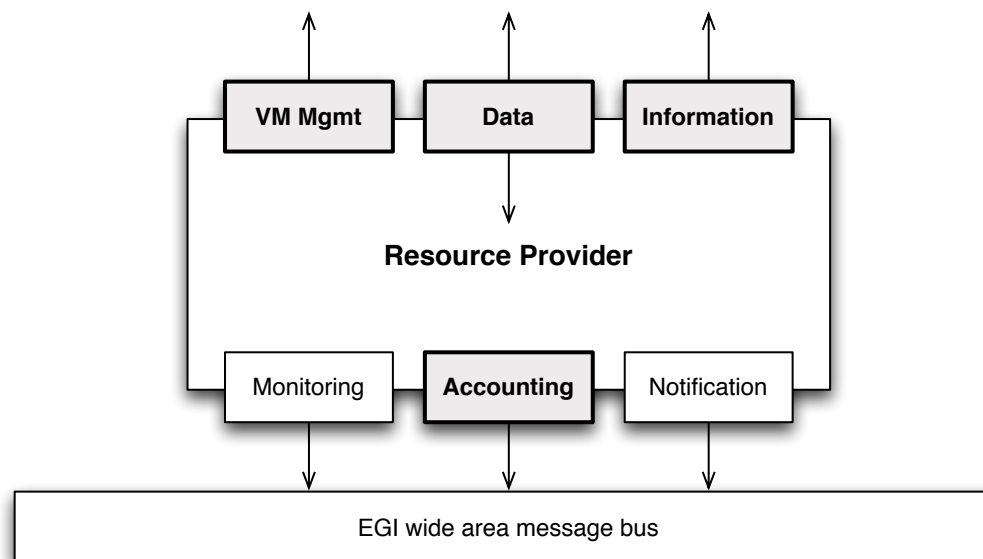
“Integrating multiple resource providers”

1. Many resource providers
2. Federated AAI across Resource providers at resource management level
3. Comparable service descriptions
4. Integration at user level
5. Services
 - Service offering



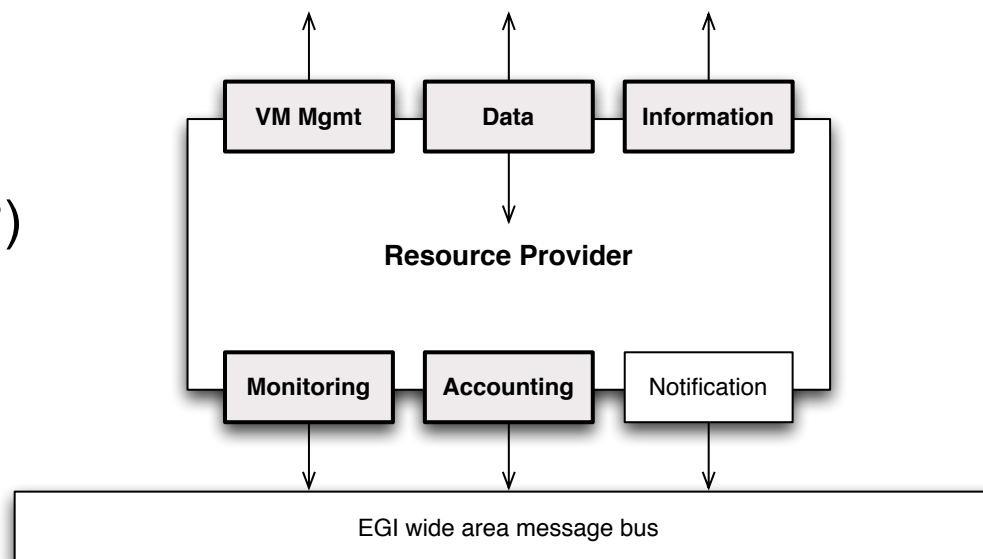
“Accounting across Resource Providers”

1. Unique user identification across resource providers
2. Resource usage is accounted
3. Shared resource accounting profile
4. Services
 - Accounting



“Reliability/Availability of Resource Providers”

1. Provider reliability and availability statistics
2. Historic accounts, and current figures
3. Regular publication of statistics
4. Services
 - Monitoring
 - Reporting (Information?)

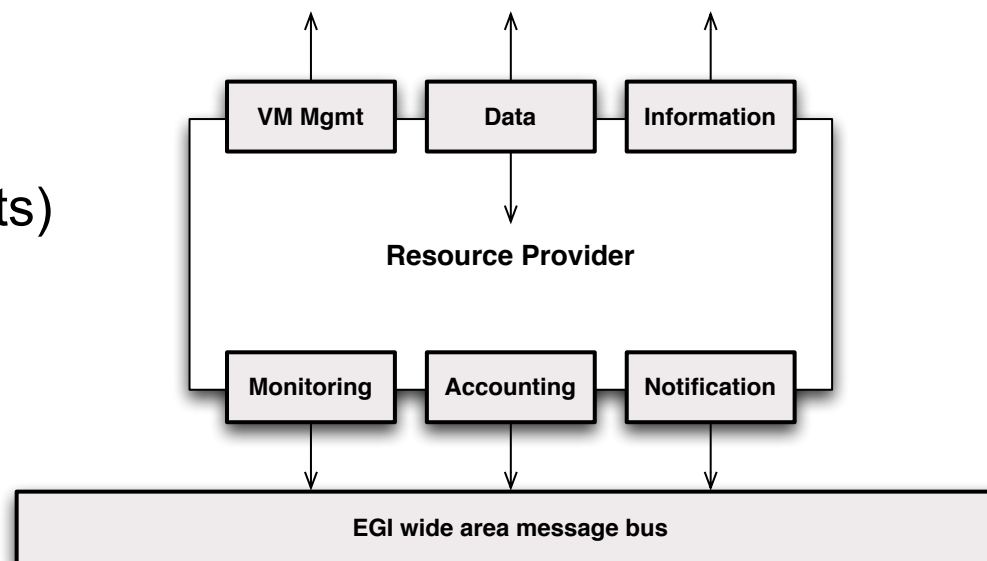


“VM/Resource state change notification”

1. Reactive/proactive management
2. VM Instance state change management
3. Real-time notification constraints

4. Services

- Notification
(infrastructure, endpoints)



6 Cloud use cases:

1. Running a pre-defined VM Image
2. Running my data and VM in the Infrastructure
3. Integrating multiple resource providers
4. Accounting across Resource Providers
5. Reliability/Availability of Resource Providers
6. VM/Resource state change notification

A 6-month work plan

- Start now, here in Lyon!
 - Join right now, or talk to us at the TF
- Implement each use case in each month
 - Most of the necessary software is available
- Infrastructure is available
 - 6 Resource Centres contribute resources
 - 2 Technology Providers deliver software

Capability	Available Product/tool sets	Viable Standards
VM Mgmt	OpenNebula, Eucalyptus, OpenStack	OCCI, OVF
Data	SharedNFS GridFTP S3 capable services	CDMI, WebDAV, NFS, GridFTP
Information	Proprietary VMM front-ends, BDII, WS registries	LDAPv3, GLUE2+, CIM
Monitoring	Nagios & plugins	--
Accounting	Proprietary or none	GLUE2, OGF UR, OGF StAR
Notification	EGI ActiveMQ infrastructure	