



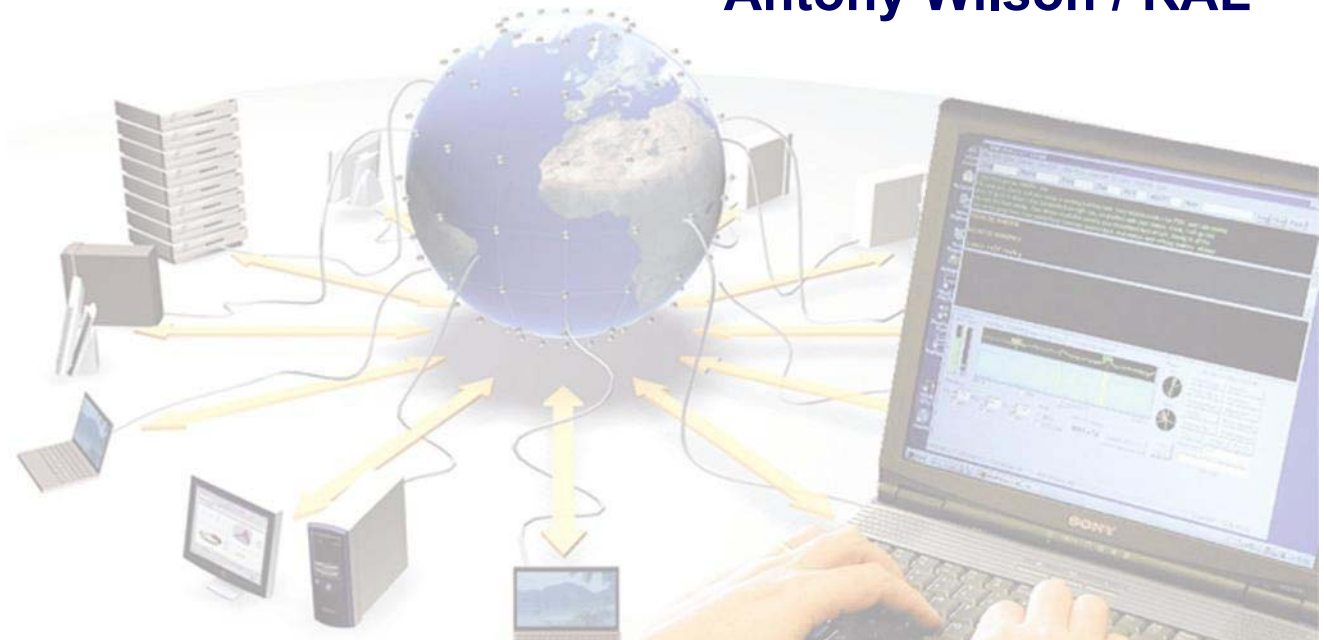
Enabling Grids for
E-science in Europe

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Service Publication

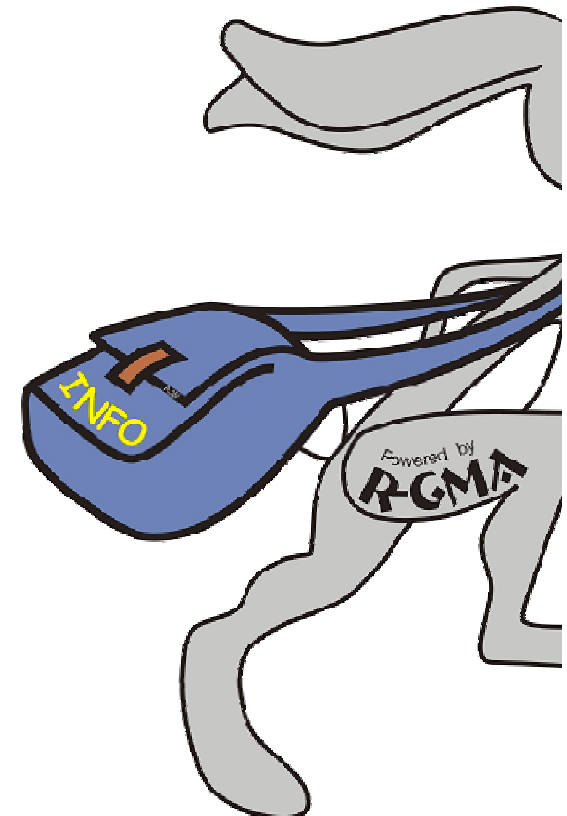
R-GMA
(Relational Grid Monitoring Architecture)

Martin Craig / RAL
Antony Wilson / RAL



What's the talk about?

- Introduction
- Service Schema
- The Service Tool
- Demo



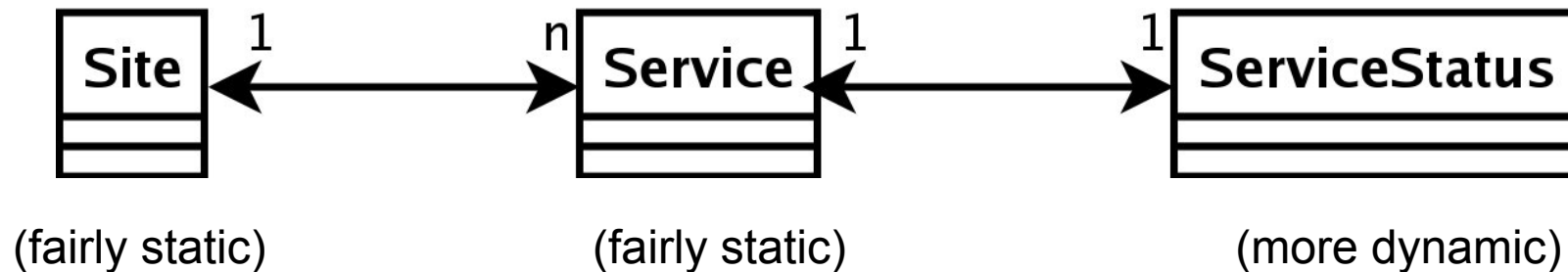
Introduction – Service Publication

- Publish information about all middleware services
 - A service is identified by a unique endpoint
 - Services have (relatively) static data
 - Services also have more dynamic data
 - Both must be updated at regular intervals
 - Not necessarily the same interval

Introduction – Service Discovery

- Middleware components will query R-GMA for available services
- We have had requests for a specific discovery API
 - Is there widespread demand for this?

Table Schemas



- Service data split into three tables
 - Site
 - Small number of fairly static sites
 - Service
 - Large number of fairly static services at each site
 - ServiceStatus
 - Dynamic service status information

Site Table

<i>Column</i>	<i>Type</i>	<i>Description</i>
Name	VARCHAR(100)	Name of the site
SysAdminContact	VARCHAR(100)	Systems Administrator contact
UserSupportContact	VARCHAR(100)	User Support contact
SiteSecurityContact	VARCHAR(100)	Site Security contact
Latitude	REAL	Latitude of the site (N of equator is +ve)
Longitude	REAL	Longitude of the site (E of Greenwich is +ve)

Site Table - Example

Name	lxb2029.cern.ch
SysAdminContact	project-eu-egee-middleware-prototype@cern.ch
UserSupportContact	project-eu-egee-middleware-prototype@cern.ch
SiteSecurityContact	project-eu-egee-middleware-prototype@cern.ch
Latitude	46.2332
Longitude	6.0463

Service Table

<i>Column</i>	<i>Type</i>	<i>Description</i>
Endpoint	VARCHAR(255)	URI to contact the service
ServiceType_Name	VARCHAR(50)	Type of service
ServiceType_MajorVersion	INT	Major version number
ServiceType_MinorVersion	INT	Minor version number
ServiceType_PatchVersion	INT	Patch version number
Site_Name	VARCHAR(100)	Name of the site
WSDL	VARCHAR(255)	URL of WSDL describing the service
Semantics	VARCHAR(255)	Semantics URL of detailed description

Service Table - Example

Endpoint	httpg://gridftp05.cern.ch:8443/srm/managerv1
ServiceType_Name	SRM
ServiceType_MajorVersion	1
ServiceType_MinorVersion	1
ServiceType_PatchVersion	0
Site_Name	lxb2029.cern.ch
WSDL	http://egee-jra1-data.web.cern.ch/egee-jra1-data/srm/srm.v1.1.wsdl
Semantics	http://sdm.lbl.gov/srm-wg/doc/srm.v1.0.pdf

ServiceStatus Table

<i>Column</i>	<i>Type</i>	<i>Description</i>
Endpoint	VARCHAR(255)	URI to contact the service
Status	INT	Status code. 0 means the service is up
Message	VARCHAR(255)	Human readable indication of the service status

ServiceStatus Table - Example

Endpoint	http://lxb2029.cern.ch:8080/R-GMA/RegistryServlet
Status	0
Message	Service running, current memory usage at: 55%

- R-GMA application
- Allows services to be published without using R-GMA API directly
- Service installs a configuration file in a known location
 - `/opt/glite/etc/rgma-servicetool/services/`
- Recommendation – open for discussion
 - `init.d start` installs the configuration file
 - `init.d stop` removes the configuration file
- Note that removing a service does not remove published data from R-GMA!
 - Convention for ‘unpublishing’ a service

Service Tool – Configuration File

```
Endpoint=http://heplnw12.pp.rl.ac.uk:8080/R-GMA/RegistryServlet
Type=RGMA.RegistryService
Version=4.0.0
PublishInterval=3600
StatusScript=python /opt/glite/share/rgma/scripts/rgma-servlet-
    status.py -gs RegistryService
StatusInterval=60
WSDL=
Semantics=https://edms.cern.ch/file/490223/2/Specification.pdf
```

Service Tool – Configuration File

```
Endpoint=http://heplnw12.pp.rl.ac.uk:8080/R-GMA/RegistryServlet
Type=R-GMA.RegistryService
Version=1.0.0
PublishInterval=3600
StatusScript=/usr/bin /opt/glite/share/rgma/scripts/rgma-servlet-
    status.py -g RegistryService
StatusInterval=60
WSDL=
Semantics=https://edms.cern.ch/file/490223/2/Specification.pdf
```



URI to contact the service

Service Tool – Configuration File

```
Endpoint=http://heplnw12.pp.rl.ac.uk:8080/R-GMA/RegistryServlet  
Type=RGMA.RegistryService  
Version=4.0.0  
PublishInterval=3600  
StatusScript=python /opt/glite/share/rgma/scripts/rgma-servlet-  
status.py RegistryService  
StatusInterval=60  
WSDL=  
Semantics=https://edms.cern.ch/file/490223/2/Specification.pdf
```



The type of service

Service Tool – Configuration File

```
Endpoint=http://heplnw12.pp.rl.ac.uk:8080/R-GMA/RegistryServlet
Type=RGMA.RegistryService
Version=4.0.0
PublishInterval=3600
StatusScript=python /opt/glite/share/rgma/scripts/rgma-servlet-
    status.py --as RegistryService
StatusInterval=
WSDL=
Semantics=https://edms.cern.ch/file/490223/2/Specification.pdf
```

The version of the service in the
form major.minor.patch

Service Tool – Configuration File

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Endpoint=http://heplnw12.pp.rl.ac.uk:8080/R-GMA/RegistryServlet
Type=RGMA.RegistryService
Version=4.0.0
PublishInterval=3600
StatusScript=python /opt/glite/share/rgma/scripts/rgma-servlet-
    status.py --as RegistryService
StatusInterval=
WSDL=
Semantics=https://edms.cern.ch/file/490223/2/Specification.pdf
```

The interval in seconds at which
the service should be published

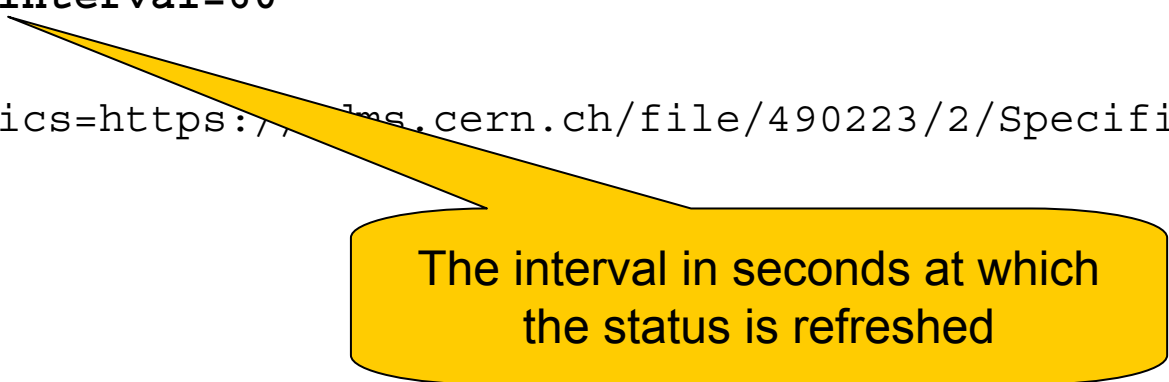
Service Tool – Configuration File

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Endpoint=http://heplnw12.pp.rl.ac.uk:8080/R-GMA/RegistryServlet
Type=RGMA.RegistryService
Version=4.0.0
PublishInterval=3600
StatusScript=python /opt/glite/share/rgma/scripts/rgma-servlet-  
status.py -gs RegistryService
StatusInterval=60
WSDL=
Semantics=https://edms.cern.ch/file/490223/2/Specification.pdf
```

A script that can be called to ascertain the status of the service. The exit code and first line of standard out are used to populate the status and message fields in the ServiceStatus table

Service Tool – Configuration File

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    status.py -gs RegistryService
StatusInterval=60
WSDL=
Semantics=https://www.cern.ch/file/490223/2/Specification.pdf
```



The interval in seconds at which
the status is refreshed

Service Tool – Configuration File

```
Endpoint=http://heplnw12.pp.rl.ac.uk:8080/R-GMA/RegistryServlet
Type=RGMA.RegistryService
Version=4.0.0
PublishInterval=3600
StatusScript=python /opt/glite/share/rgma/scripts/rgma-servlet-
    status.py -gs RegistryService
StatusInterval=60
WSDL=
Semantics=https://edms.cern.ch/file/490223/2/Specification.pdf
```

URL of WSDL describing the
service

Service Tool – Configuration File

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StatusInterval=60
WSDL=
Semantics=https://edms.cern.ch/file/490223/2/Specification.pdf
```



Semantics URL of detailed
description

Further Information



- JRA1-UK web site
 - <http://hepunx.rl.ac.uk/egee/jra1-uk/>
- E-mail
 - jra1-uk@physics.gla.ac.uk



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The Demo