

Operations Portal

Availability/Reliability reports for EGI

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Application Hosted By CCIN2P3

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This work has been initiated in the JRA1 activity and is now funded by the EGI Mini project « **A new approach to Computing Availability/Reliability reports for EGI** »

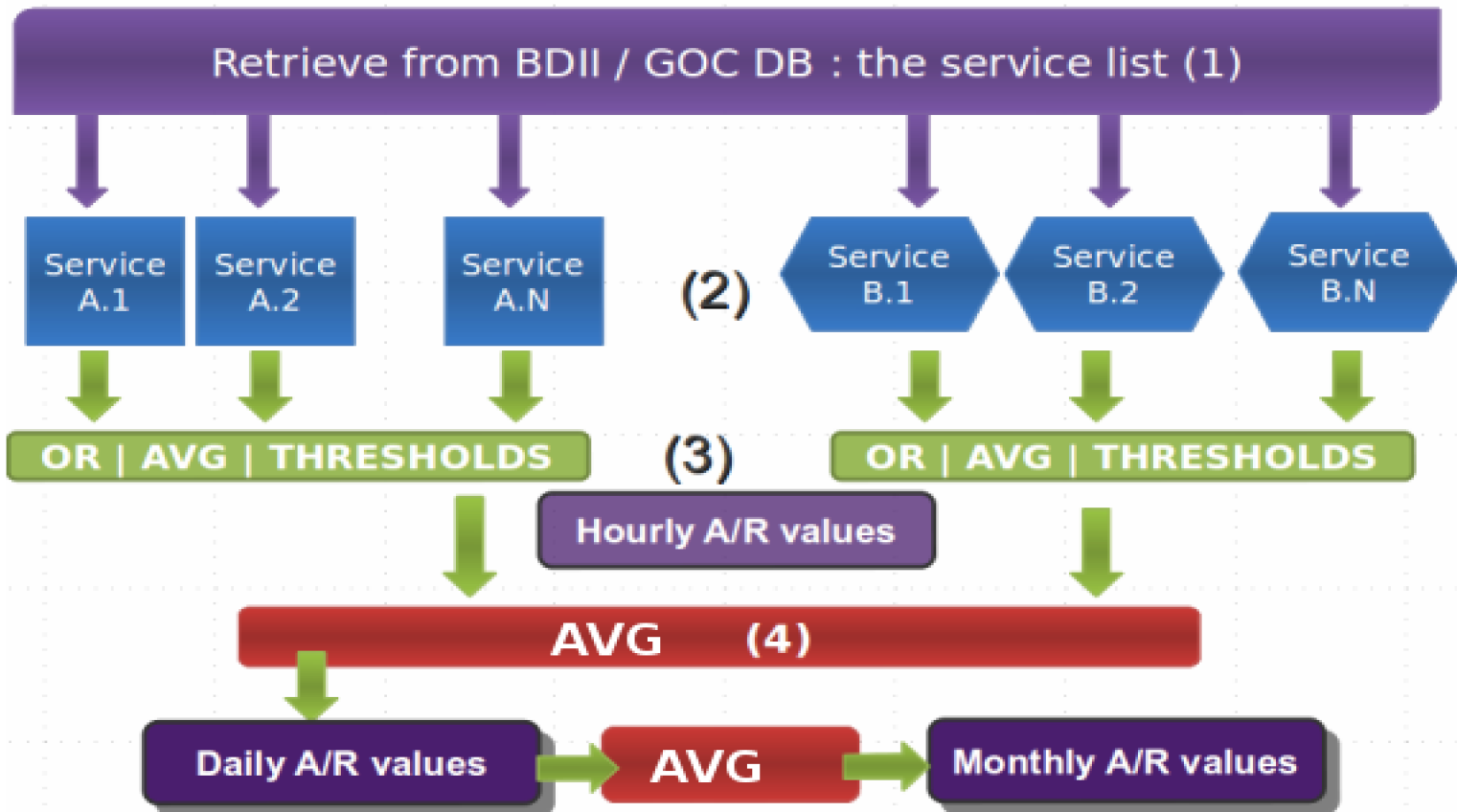
The Availability / Reliability computation system and the associated visualization layer has been developed using the Lavoisier Web Service .

Lavoisier is the component used to store, consolidate and “feed” data for the « Operations Portal » . This service provides information from various sources without the portal being directly dependent on those information sources thanks to a caching mechanism. This indeed protects us from intermittent failures of information sources.

2 types of availabilities / reliabilities are currently computed with this system :

- VO services availabilities / reliabilities
- NGI core services availabilities / reliabilities

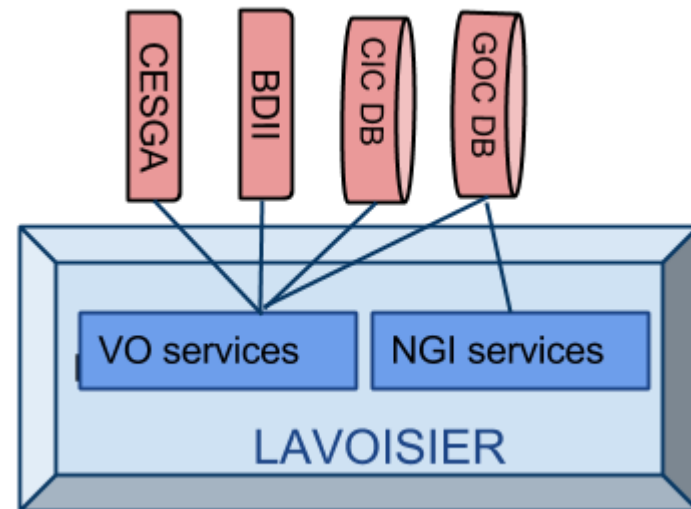
Computation Mechanism



- (1) Extraction of the service list from GOC DB or Bdii
- (2) Extraction of Availabilities and reliabilities from MyEGI PI
- (3) Aggregation of Data per hour and computation with the different methods
- (4) Aggregation per day then per month

VO Services Availabilities and reliabilities

- Extraction of high activity VO list with the CESGA PI
- Extraction from Bdii of the list of LFC , SE , CE , WMS for these VOs
- Extraction of the VOMS list from the VO ID cards



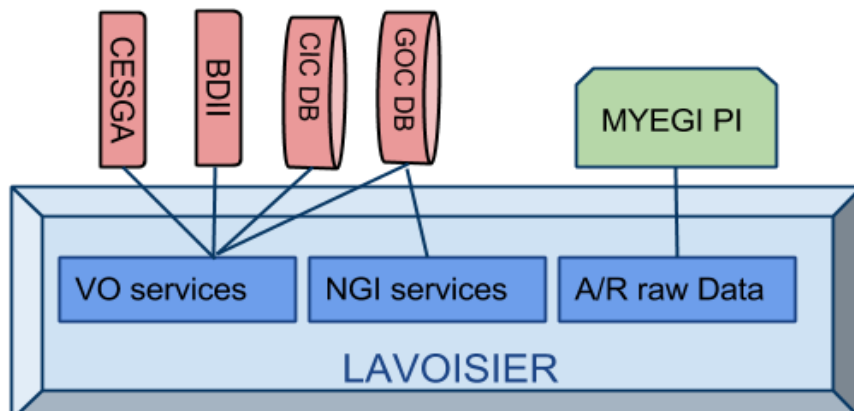
NGI (CORE) Services Availabilities and reliabilities

The information is coming from the GOC DB PI and more specifically we use 2 methods :

https://goc.egi.eu/gocdbpi/private/?method=get_service_group (core Services)

https://goc.egi.eu/gocdbpi/private/?method=get_service_endpoint (complete list of services)

Extraction of the Av/Re data



- Use of the MyEGI PI with the method `service_availability_in_profile`
- Collection of one day of data with a service and hour granularity
- One part of the output of the method :

```
<Service hostname="dc2-grid-68.brunel.ac.uk" type="CREAM-CE" flavour="CREAM-CE">
  <Availability timestamp="2012-03-14T08:00:00Z" availability="0.0" reliability="0.0" maintenance="0.0"/>
  <Availability timestamp="2012-03-14T01:00:00Z" availability="0.0" reliability="0.0" maintenance="0.0"/>
  <Availability timestamp="2012-03-14T02:00:00Z" availability="0.0" reliability="0.0" maintenance="0.0"/>
  <Availability timestamp="2012-03-14T00:00:00Z" availability="0.8436" reliability="0.8436" maintenance="0.0"/>
</Service>
```

Aggregation of Data per hour

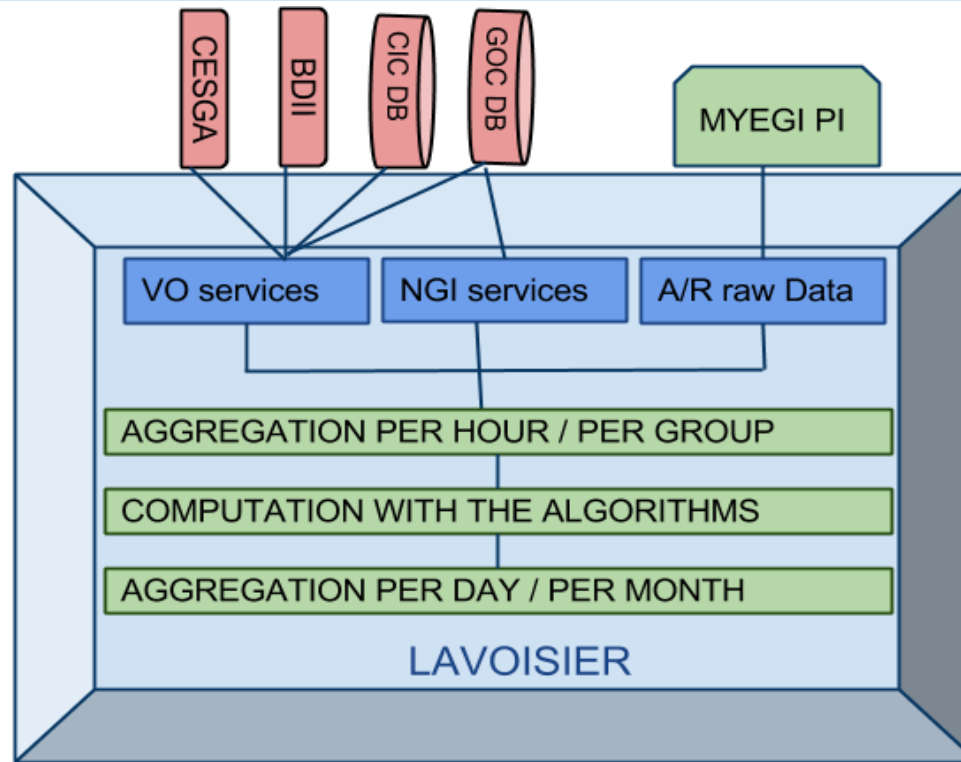
- Aggregation for a given hour of all services of a VO / NGI per service type .

```
<timestamp service_type='CE' key="2012-03-14T08:00:00Z">
  <service name ="service1" availability="1.0" reliability="1.0" maintenance="0.0"/>
  <service name ="service2" availability="0.8" reliability="0.8" maintenance="0.0"/>
  [...]
</timestamp>
<timestamp service_type='SE' key="2012-03-14T08:00:00Z">
  <service name ="service3" availability="1.0" reliability="1.0" maintenance="0.0"/>
  <service name ="service4" availability="0.7" reliability="0.8" maintenance="0.1"/>
  [...]
</timestamp>
```

Computation

From the previous aggregation : application of different algorithms / hour /group of services :

- the "Oring" method : if a service in the list of service is available , the whole group of service is available
- the average method : the availability is given as average value of all availabilities
- the threshold method (70%,80% and 90%) : if the percentage of available services (av=1 or re=1) in the list is greater than the specified threshold then the availability of the group is equal to one otherwise equal to 0 .



Aggregation of Data per day / per month

- Aggregation for the results of the previous results
 - with an average algorithm
 - with 2 granularities : day and month

 **2013-06 - alice**

- Availabilities
- Reliabilities

Monthly Summary

Method	Availabilities	Reliabilities
Oring Method	100.00	100.00
Average Method	97.75	98.43
THRESHOLD 70%	100.00	100.00
THRESHOLD 80%	100.00	100.00
THRESHOLD 90%	98.70	100.00

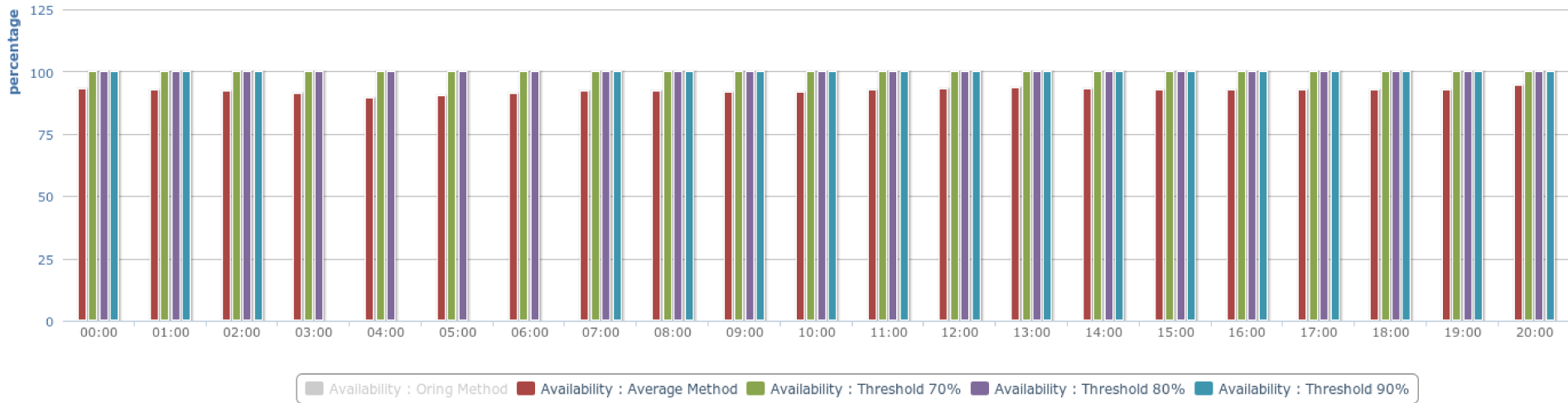
Daily Values

Availabilities

Day	Oring	Average	Threshold 70 %	Threshold 80 %	Threshold 90 %
2013-06-13	100.00	98.37	100.00	100.00	99.13
2013-06-14	100.00	97.65	100.00	100.00	100.00
2013-06-15	100.00	97.70	100.00	100.00	100.00
2013-06-16	100.00	97.27	100.00	100.00	95.65

...

Availability Chart- 2013-06-16 -alice - CE



Visualisation layer :

- HighCharts Library (free) integrated into Lavoisier
- Possibility to export in csv format
- Possibility to register the chart in svg , png , jpg
- Selection of the granularity (month , day , details per hour)

Expected features

- Pdf generation
- Possibility to select your period of reporting
- Possibility to customize the chart
- Use of the new PI developed inside the mini project

- **Interfaces**

- <https://cclavoisier02.in2p3.fr:8443/lavoisier>

- **Original Requirements**

- <https://rt.egi.eu/rt/Ticket/Display.html?id=4348>

- **Documentation**

- <https://forge.in2p3.fr/projects/ar/wiki/Wiki>