



Monviso: a portal for metering and reporting CNAF resources usage

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Outlines

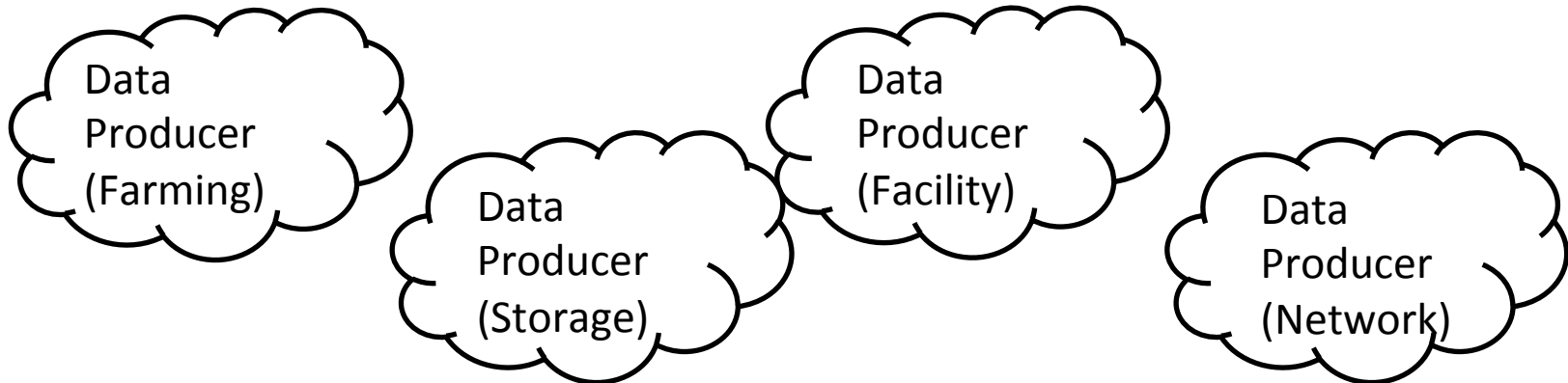
- All we need is metering (and centralizing)
- Mad about Graphite data-points
- Monviso: yet another Graphite data-points consumer

All we need is...

- Management (and experiments support team) knocked at our door asking for a central point where consult resource usage statistics
- Reporting tool to support on-call operator during his duty analyzing failures and alarms

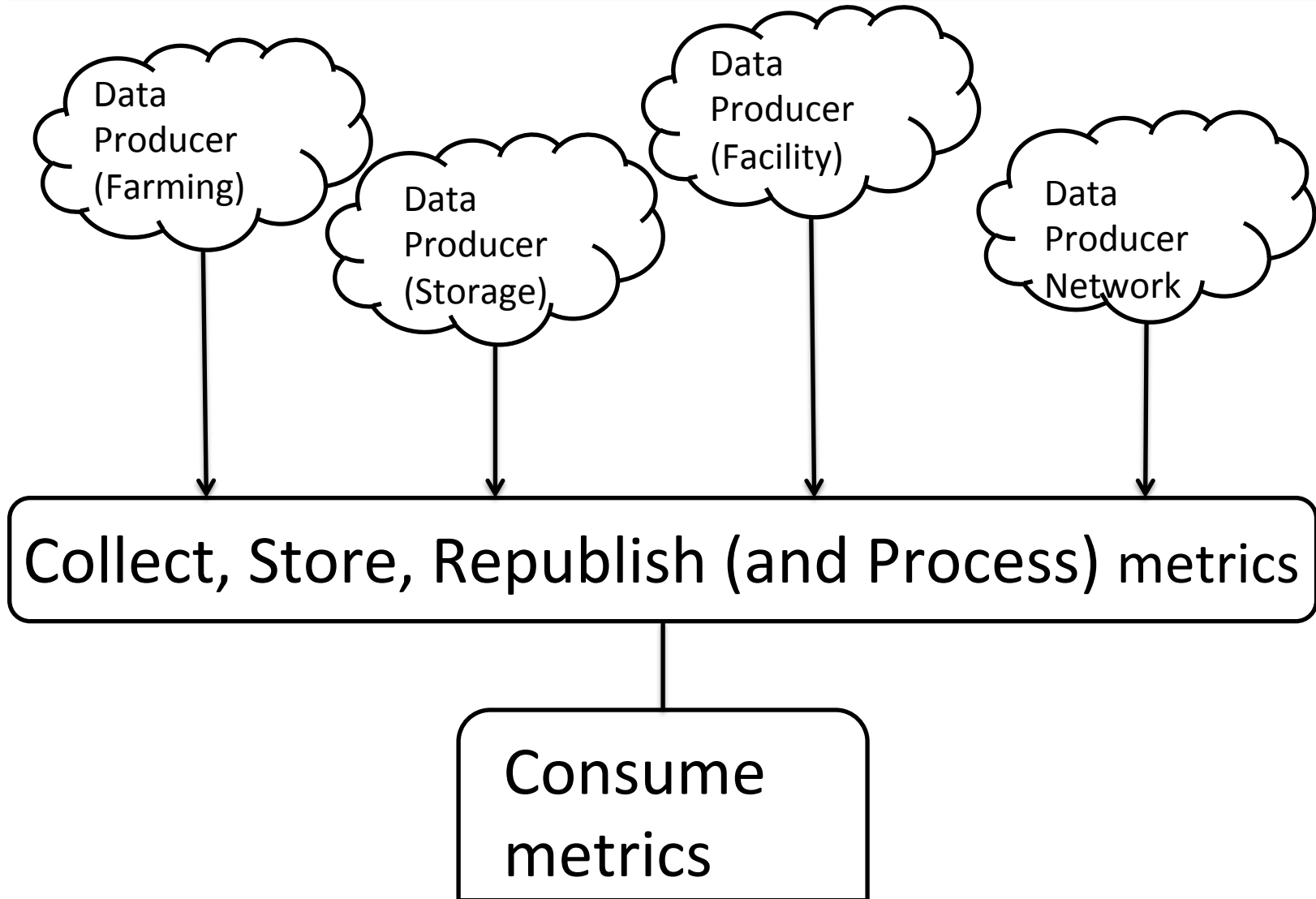
Start complex end simple?

- Each group has its own way to collect resource usage data



- Can they just send a bunch of data somewhere else?
 - Simple

Same old story



Avoid reinventing the...

- Graphite tool does very well what we need
 - Metric data collection
 - Lots of APIs and protocols to feed its database
 - Data-points storage
 - Rely on a rrd-like database called whisper (time-series data-points)
 - Supply data in a programmatic way
 - APIs to get json formatted time series

Agree on a well defined metric domain

- LSF accounting and monitoring data
 - Jobs consumption, resources assignment threshold, ...
 - *farming.acc.alice.grid.wct.hs06*
 - *farming.part.SL6_GLOBAL.u_alice.hs06*
- GPFS and Tape storage usage
 - File systems and file set size, quota, ...
 - *storage.fs.gpfs_alice.used*
 - *storage.fs.gpfs_lhcb.fileset.LHCb-Disk.quota*

Let's consume your data-points

- Graphite render url APIs
 - Request json data with specific metric targets
 - Apply Graphite functions to process data and get data-points

GET `http://your_graphite/render?`

`target=asPercent(sumSeries(farming.mon.alice.*.cpt),sumSeries(farming.mon.alice.*.wct))&from=-1h&format=json`

```
datapoints: [[95.103105458344601, 1411134120], [95.081391349042605, 1411134300],  
[95.058148151136706, 1411134480], [95.033661590092251, 1411134660],  
[95.026591688620982, 1411134840], [95.001519533801442, 1411135020],  
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[94.583383486732799, 1411137360], [94.548999342395817, 1411137540]]
```


Monviso: yet another...

- It's plenty of visualization tools able to consume Graphite data-point.
 - So why not use existing ones?
- We need a web portal, most of them provide dashboards
- Limitation on non time based charts

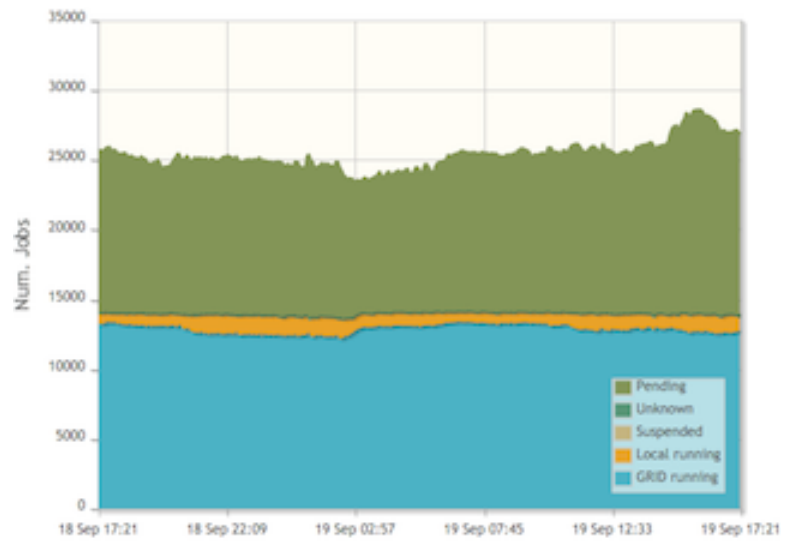
We do use Grafana for different purposes!

Monviso: behind the scene

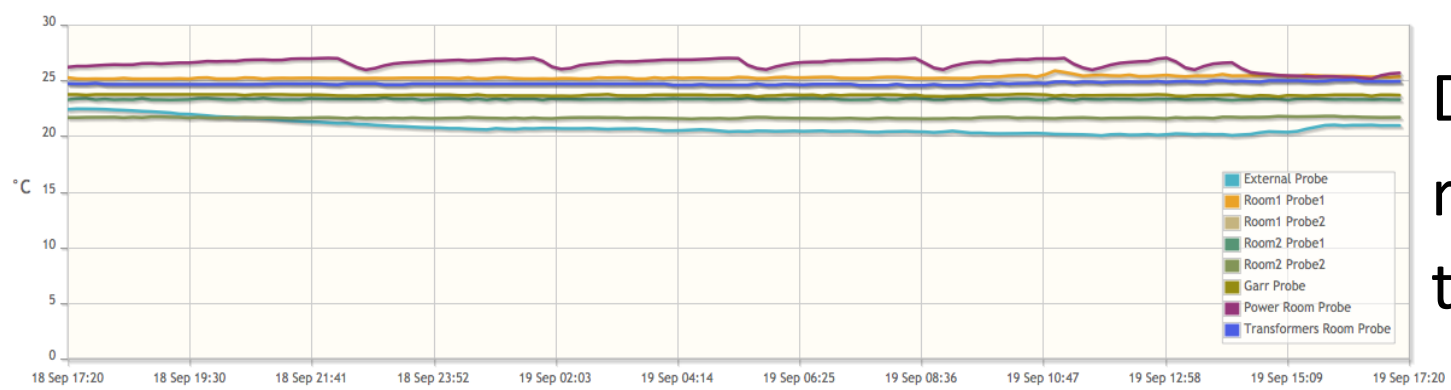
- Bootstrap framework to deal with all the html, css and js stuff
- Jqplot chart library based on jQuery
- A bunch of jQuery and server side logic to get json data from Graphite and transform them in charts

Monviso: resource admin viewpoint

LSF jobs flow



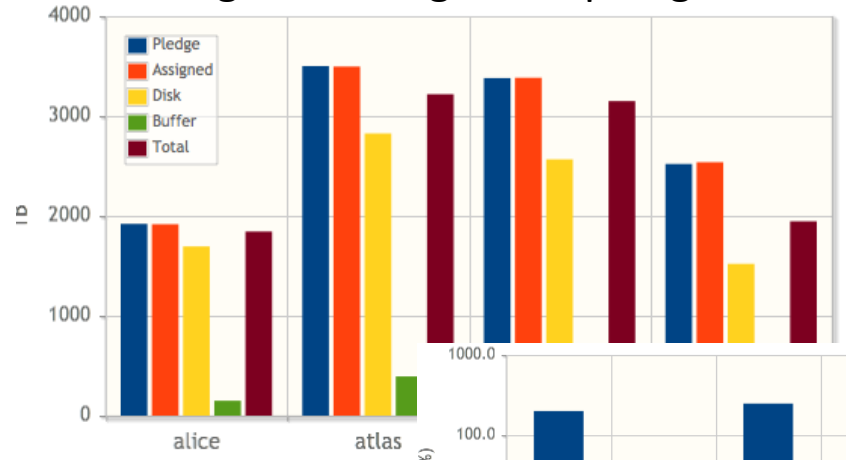
GPFS fs usage



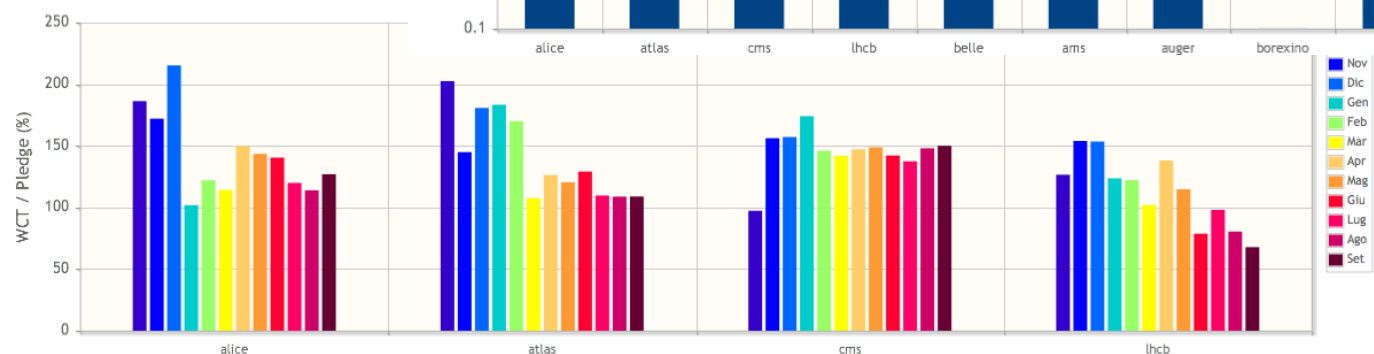
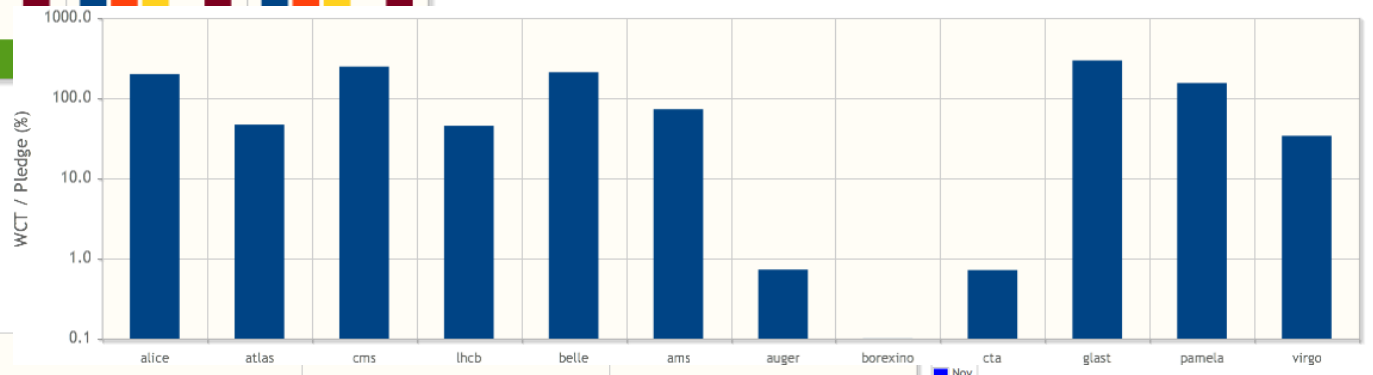
Datacenter rooms temperature

Monviso: exp support viewpoint

Storage disk usage over pledge and assigned



VO delivered power (% WCT/Pledge)



Monthly VO delivered power (% WCT/Pledge)

Conclusions

- What we've got now?
 - A portal reporting resources usage
 - A metric system describing data (useful exercise but difficult to accomplish)
 - A framework able to produce, collect, store, republish and consume resource usage data
- Management (and local experiment support) still knock at our office door asking to add more graphs...
 - Fortunately we've now all the framework to deal with (most) of the requirements...

Sharing Monviso?

Not that easy for us to pack everything

- Producers
 - Bunch of scripts depending on the environments (es. LSF, GPFS, ...)
- Third party softwares available anyway
 - Graphite, Bootstrap, Jqplot
- Charts generation logic shaped for our metric domain