

Monitoring

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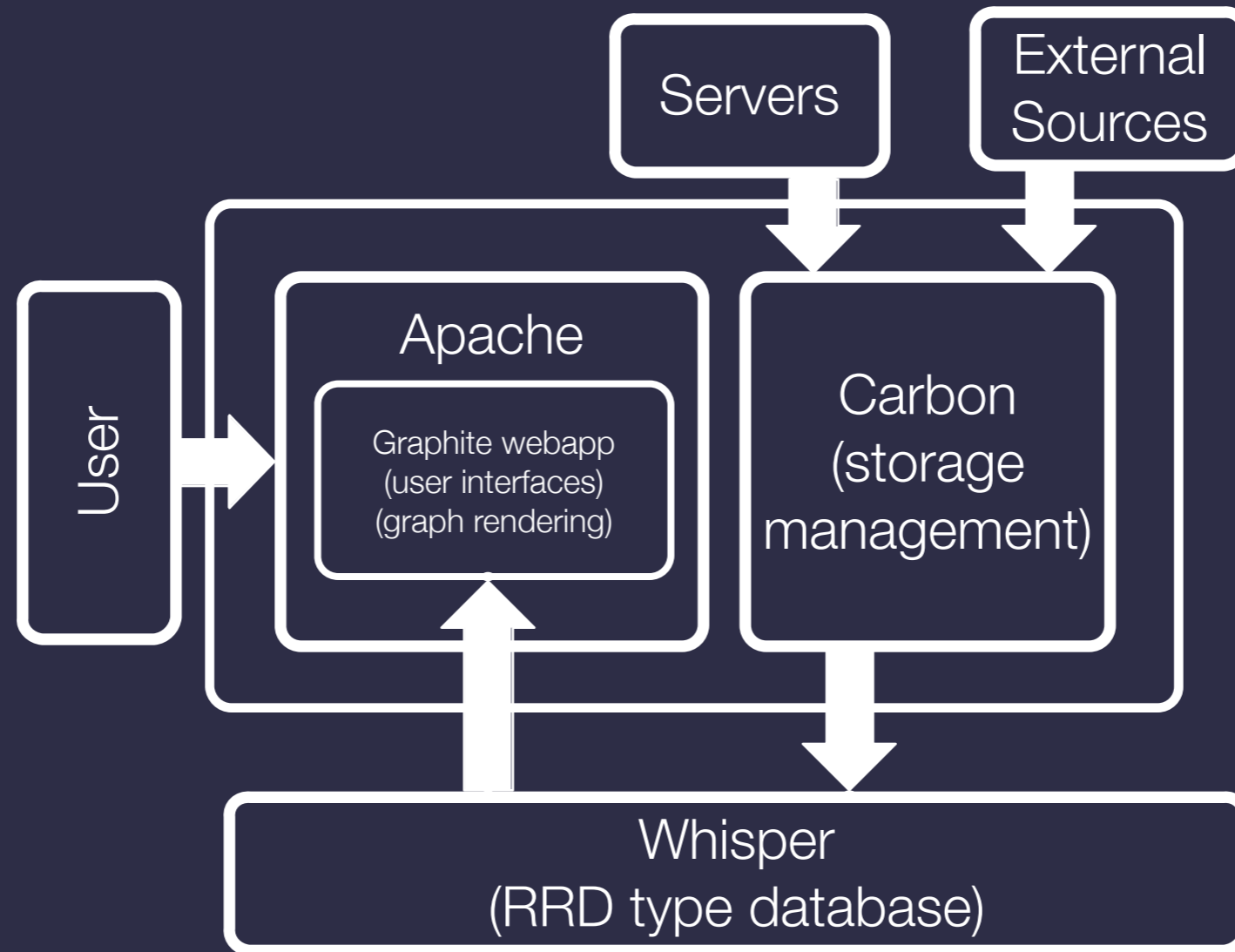
Context and scope

- Investigating new monitoring tools
- Working in the context of central data store with adaptable visualisation options

Graphite

- Designed to pull metrics easily from many locations
- Straightforward to try new metrics
- Supported in external platforms

Graphite structure



Updates

- Most recent version, 0.9.12, in EPEL

```
yum install graphite-web python-carbon python-whisper
```

- New features
 - JSON Dashboard for inline graph editing
- Local updates
 - Tweaks to initial dashboard configuration
 - iOS meta tags for iPhone interface (in progress)

Sources

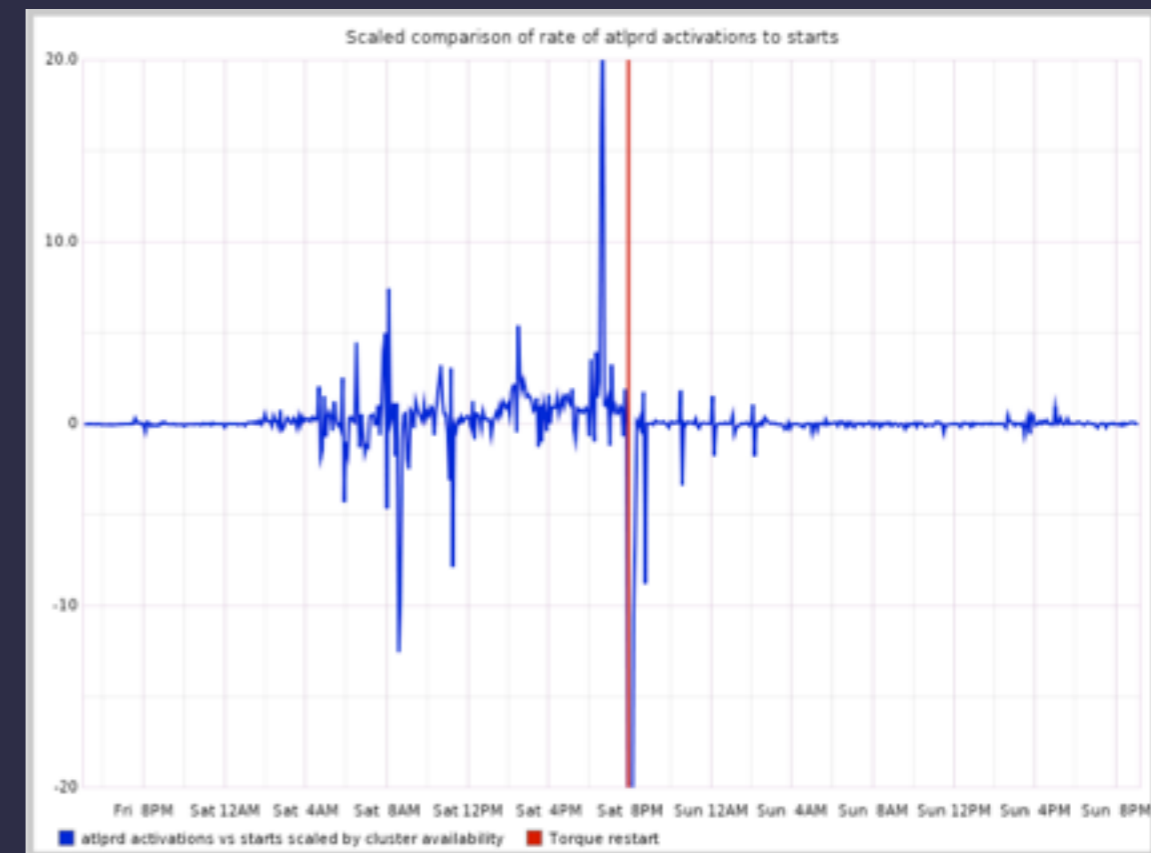
- Internal
 - Primarily local scripting
 - Ganglia interface available but needs optimisation
 - Torque monitoring via scripted qstat queries

Sources

- External
 - Panda monitoring (duplicates Panglia)
`http://pandamon.cern.ch`
 - EGI Accounting
 - GStat
- Predominantly JSON data streams (with conversion where necessary)

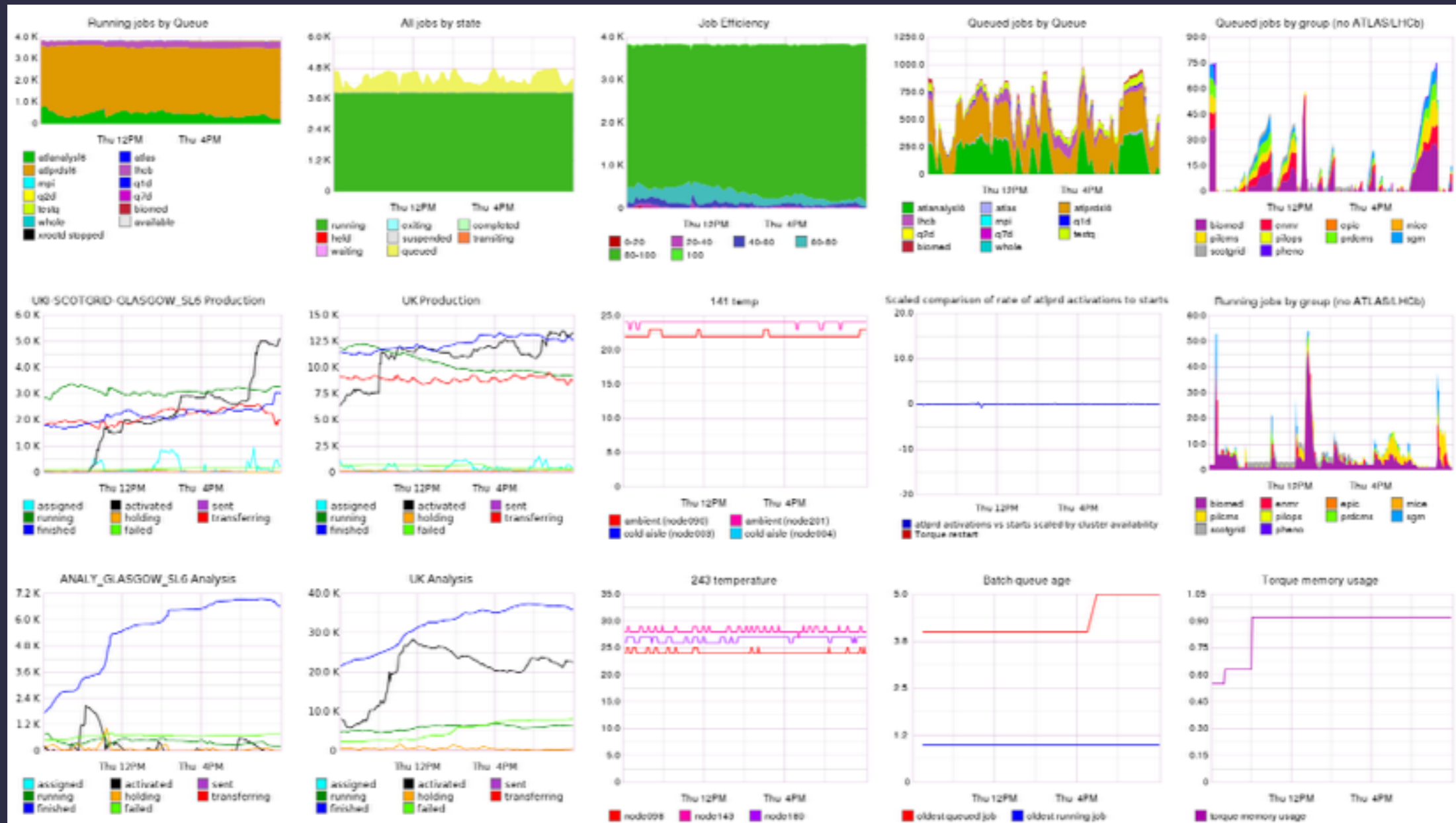
Combined metrics

- Is torque starting jobs correctly?
- Look at difference between rate of job starts and job activations from Panda, scaled to batch system usage
- Overlay marker for torque restart

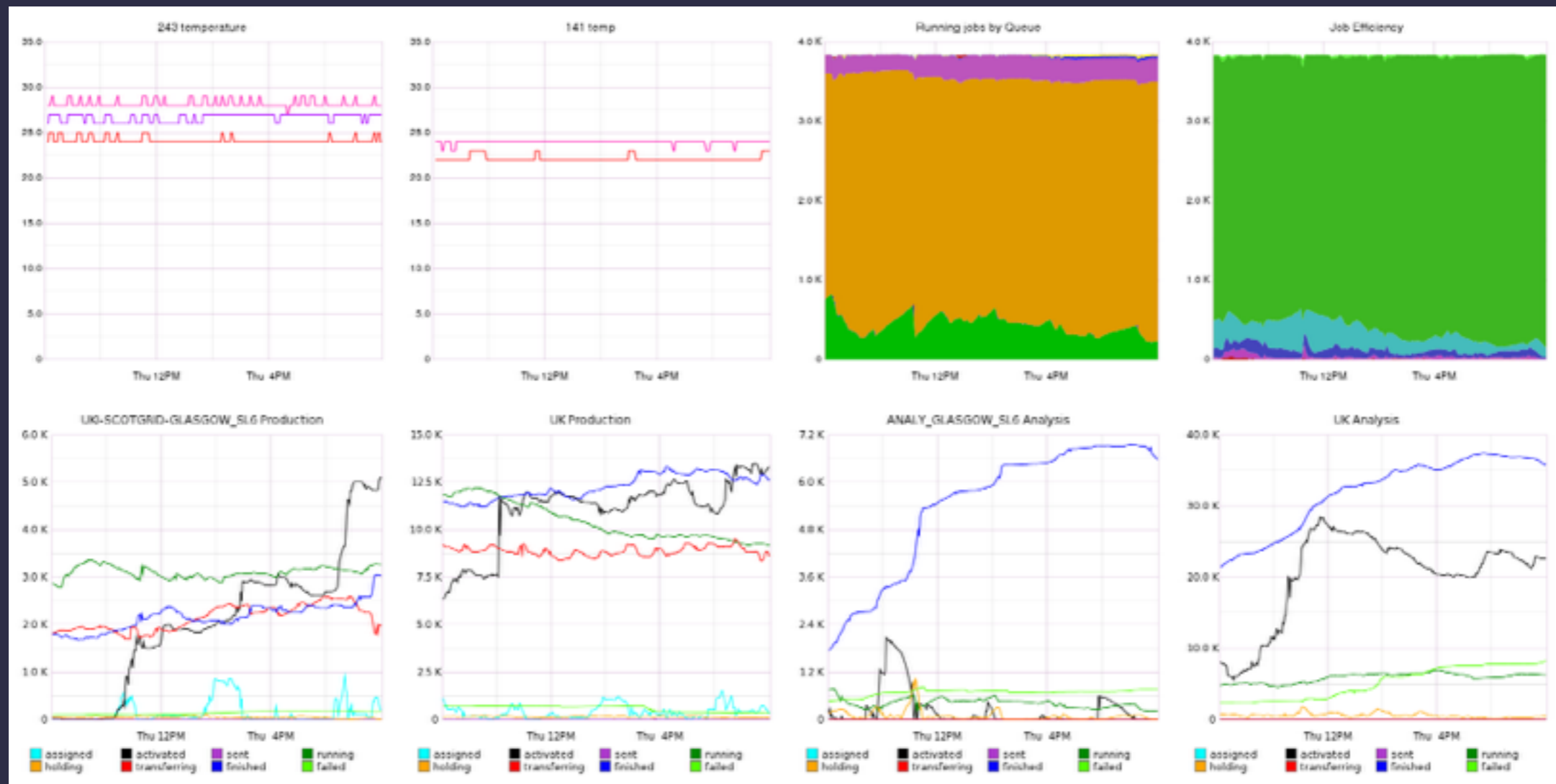


Adaptability

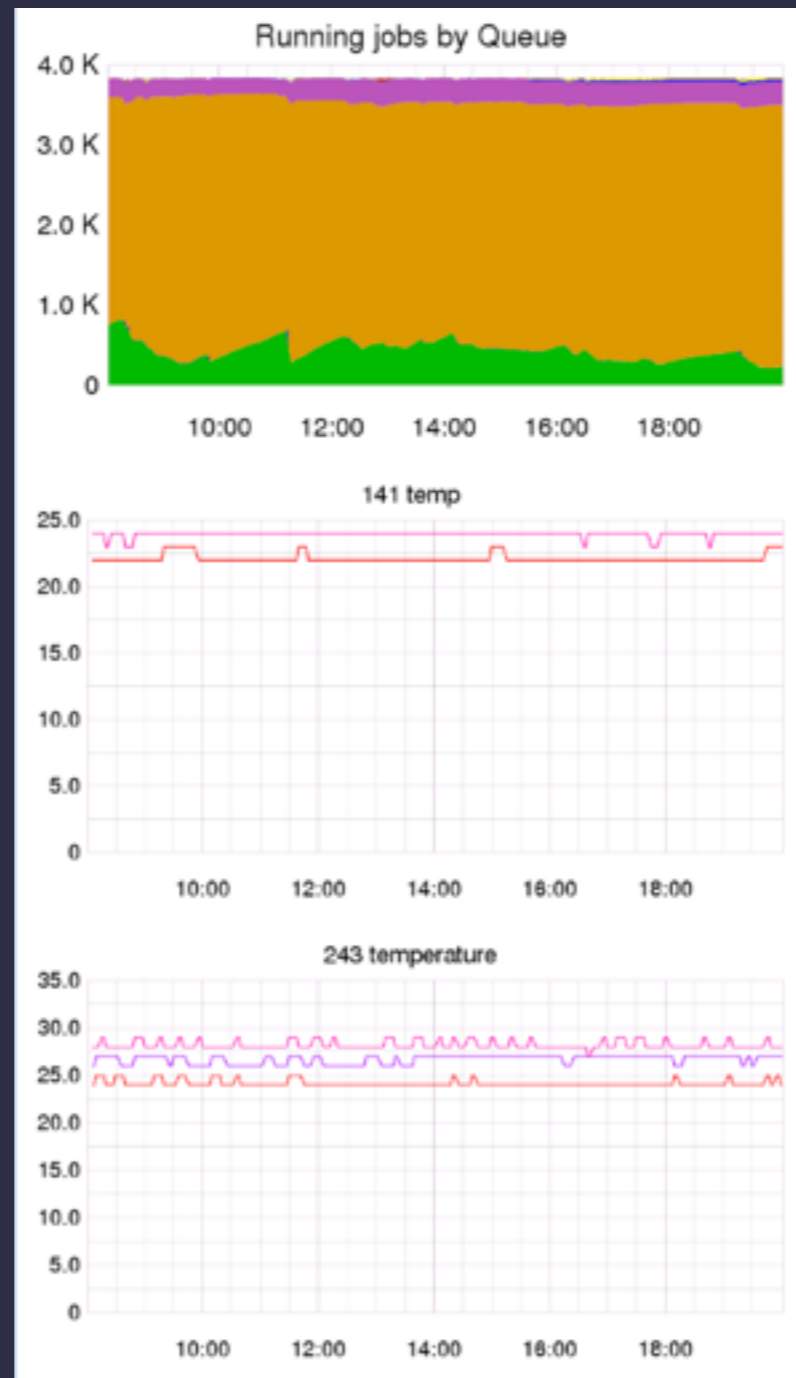
Dashboards



Dashboards



Dashboards



Dashboard editing

- Inline JSON editing
- Dashboard spec stored in sqlite db
- Remote update
- Could help a puppet config

```
Edit Dashboard
281     "alias(torque.age.running, \"oldest running job\")"
282   ],
283   "title": "Batch queue age",
284   "yMin": "0",
285   "fontName": "Helvetica",
286   "height": "300",
287   "width": "300",
288   "fontSize": "12",
289   "lineWidth": "1.2",
290   "colorList": "ff0000,0000ff"
291 },
292 {
293   "fontBold": "false",
294   "lineMode": "connected",
295   "target": [
296     "alias(torque.memused, \"torque memory usage\")"
297   ],
298   "title": "Torque memory usage",
299   "yMin": "0",
300   "fontName": "Helvetica",
301   "height": "300",
302   "width": "300",
303   "fontSize": "12",
304   "lineWidth": "1.2",
305   "colorList": "aa00aa"
306 }
307 ]
```

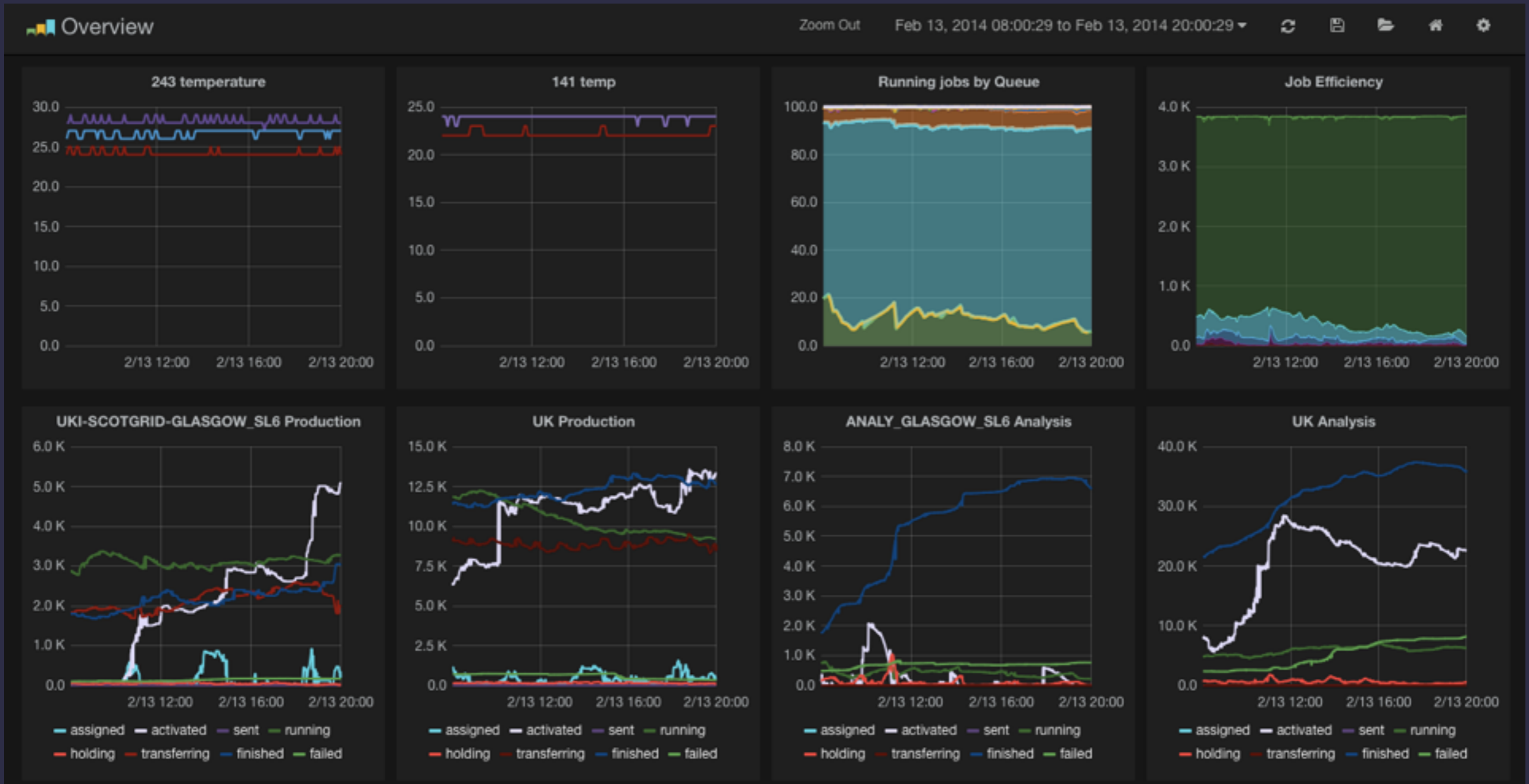
Update (doesn't save) Cancel

Grafana

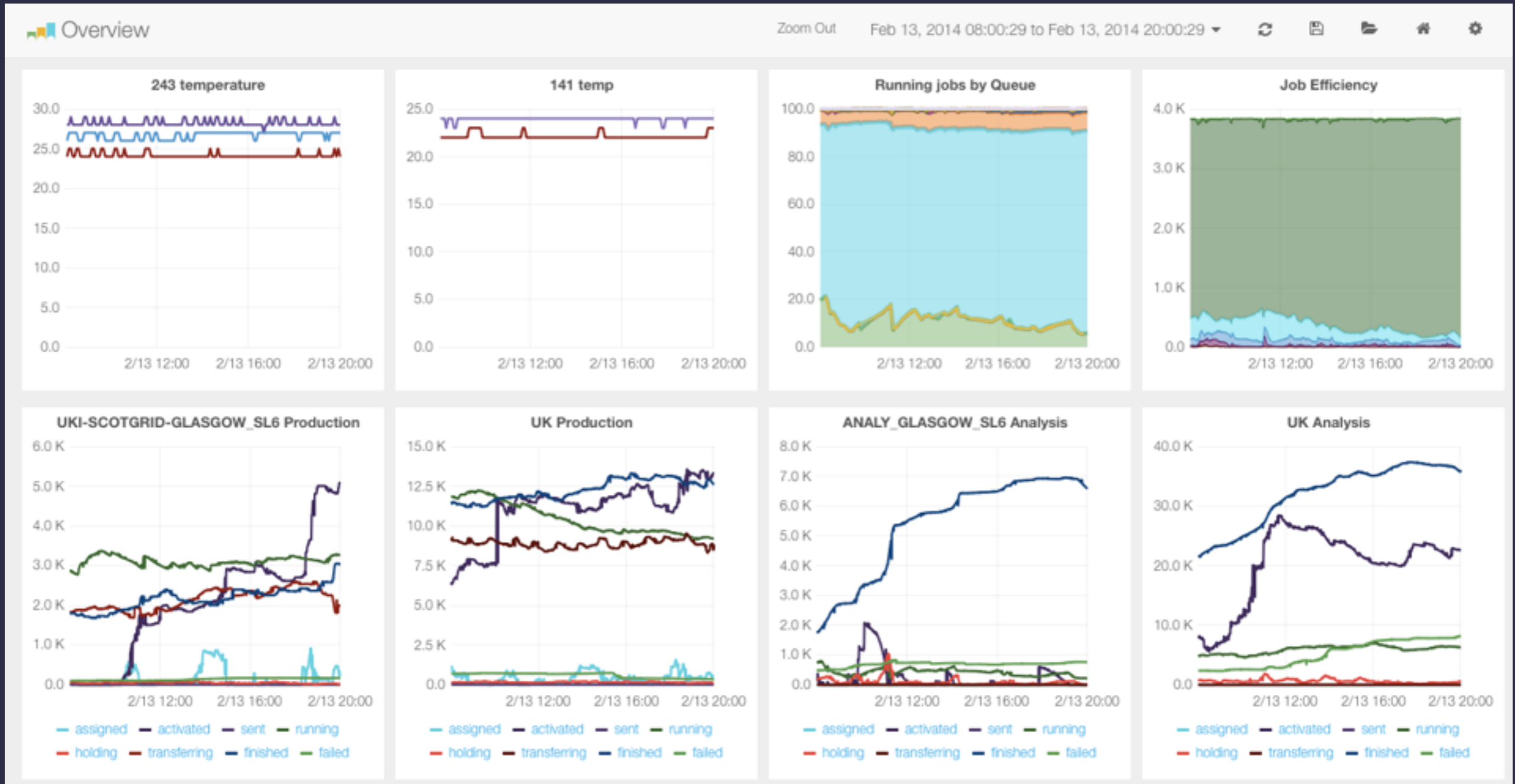
- Replacement dashboard for Graphite

`http://grafana.org`

Grafana



Grafana



Ganglia (briefly)

- Version 3.6.0 has inbuilt Graphite support; this works effectively but is under optimisation.
- Not in EPEL, unfortunately, currently hand-rolled

Naemon

- Fork of Nagios 4

`www.naemon.org`

- Main developer + other involvement
- Nice packaging
- Rapid development (so far)
- Appearance and operation similar to Nagios 3.x but is (and feels) much faster

Naemon/Thruk

- Naemon comes packaged with Thruk
- Alternative web frontend for Nagios
- Useful set of plugins/selection tools/
themes
- Mine map

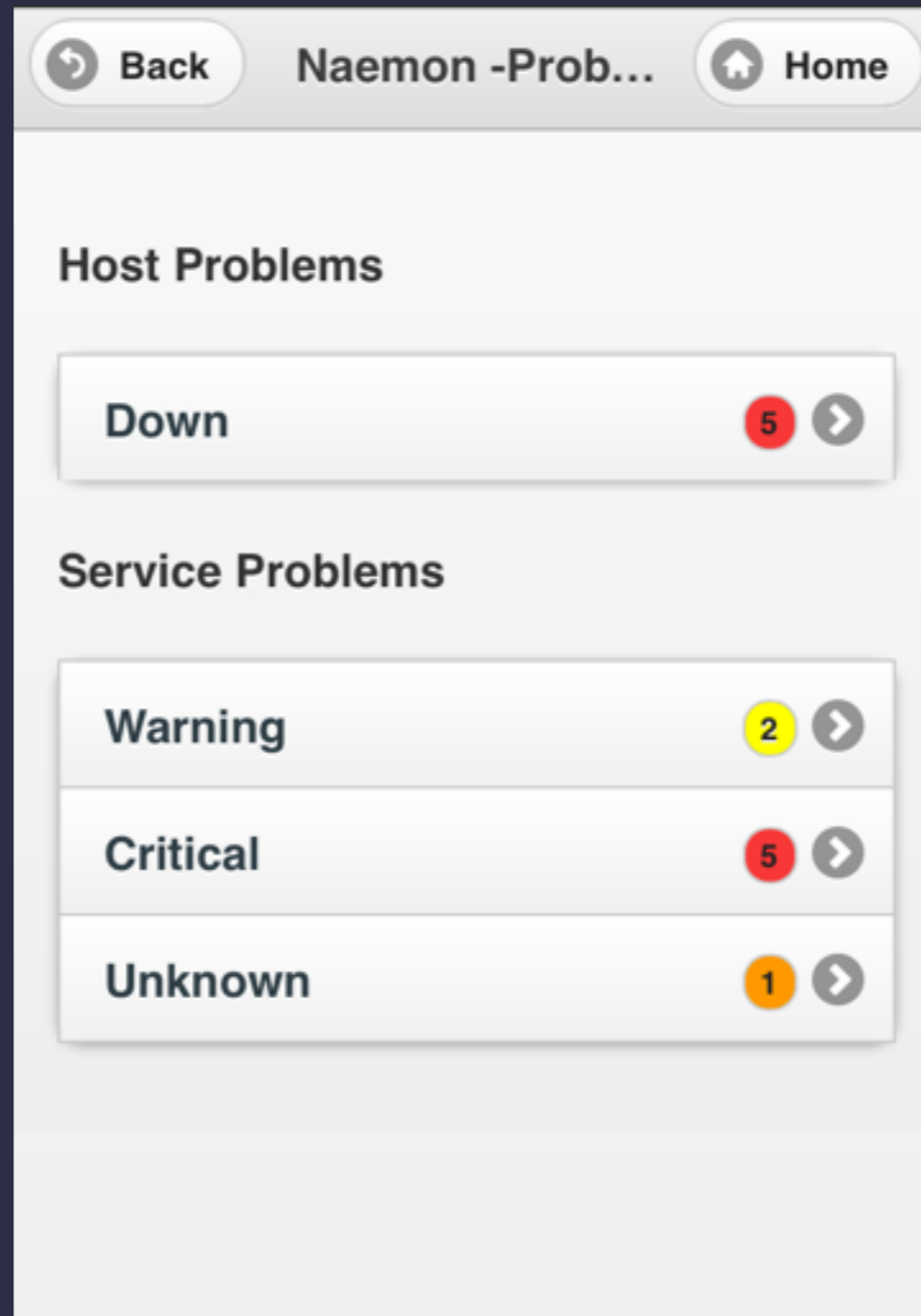
Thruk

Display Filters: Mine Map Mine Map

Host Status Types: Pending | Up | Unreachable
 Host Properties: Any >
 Service Status Types: All or
 Service Properties: Any ▼ and

	biparser	cfseupd	crond	CVMFS File cat	DNS	dnsmasq	gridftp	loadavg	Logged in users	NFS Mounts	npudir	NRPE	NTP	procs	rflod	sshd	tracejob	xrootd	Zombies
dennis.cent.gla.ac.uk	-	-	-	-	■	-	-	-	-	-	-	-	-	-	-	-	-	-	-
disk037	■	-	■	-	-	-	-	■	-	-	-	■	■	■	-	■	-	-	■
disk041	■	-	■	-	-	-	■	■	■	-	-	■	■	■	■	■	-	-	■
disk042	■	-	■	-	-	-	■	■	-	-	-	■	■	■	■	■	-	-	■
disk044	■	-	■	-	-	-	■	■	-	-	-	■	■	■	■	■	-	-	■
disk045	■	-	■	-	-	-	■	■	-	-	-	■	■	■	■	■	-	-	■
disk046	■	-	■	-	-	-	■	■	-	-	-	■	■	■	■	■	-	-	■
disk047	■	-	■	-	-	-	■	■	-	-	-	■	■	■	■	■	-	-	■
disk048	■	-	■	-	-	-	■	■	-	-	-	■	■	■	■	■	-	-	■
disk049	■	-	■	-	-	-	■	■	-	-	-	■	■	■	■	■	-	-	■
disk050	■	-	■	-	-	-	■	■	-	-	-	■	■	■	■	■	-	-	■
disk051	■	-	■	-	-	-	■	■	-	-	-	■	■	■	■	■	-	-	■
disk052	■	-	■	-	-	-	■	■	-	-	-	■	■	■	■	■	-	-	■
disk053	■	-	■	-	-	-	■	■	-	-	-	■	■	■	■	■	-	-	■
disk054	■	-	■	-	-	-	■	■	-	-	-	■	■	■	■	■	-	-	■
disk055	■	-	■	-	-	-	■	■	-	-	-	■	■	■	■	■	-	-	■
disk056	■	-	■	-	-	-	■	■	-	-	-	■	■	■	■	■	-	-	■
disk057	■	-	■	-	-	-	■	■	-	-	-	■	■	■	■	■	-	-	■

Mobile Thruk



The screenshot shows a mobile application interface for monitoring system health. At the top, there is a navigation bar with a 'Back' button on the left and a 'Home' button on the right. The title of the page is 'Naemon -Prob...'. Below the navigation bar, the main content is organized into two sections: 'Host Problems' and 'Service Problems'. Under 'Host Problems', there is a single entry 'Down' with a red circle containing the number '5' and a right-pointing arrow. Under 'Service Problems', there are three entries: 'Warning' with a yellow circle containing '2', 'Critical' with a red circle containing '5', and 'Unknown' with an orange circle containing '1'. Each entry has a right-pointing arrow next to the count.

Section	Problem Type	Count
Host Problems	Down	5
Service Problems	Warning	2
	Critical	5
	Unknown	1

Review

- Separate collection from data storage from visualisation as loose goal - adaptability important
- Glasgow currently uses
 - Ganglia, nagios/naemon, cacti for network monitoring
 - Graphite for data storage and visualisation of higher level stats

Future plans

- New site nagios install planned shortly - look at integration with naemon
- Puppetised monitoring box - packaging eg graphite, ganglia and naemon install
- uki-scotgrid-glasgow github repo now exists so we can populate it
- optimisation, integration, new sources
- network monitoring - whither cacti?

Questions? (and a request!)

- Interested in what people are using
 - Standard installs - which packages, problems
 - Custom scripting (where not site specific)
 - Clever ideas welcome!