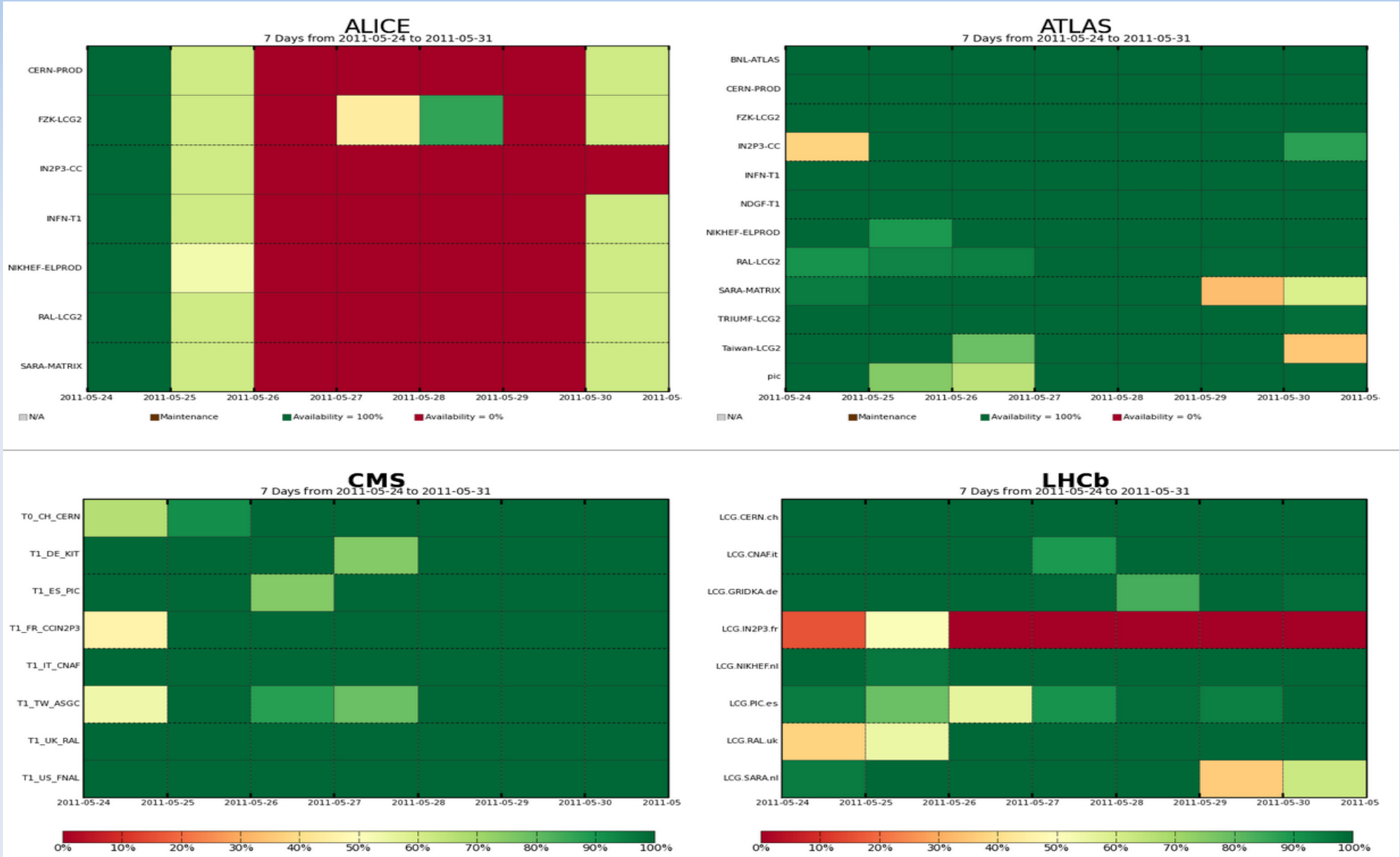


# Automation of reports for operations meetings

# The 'problem'

- DNG send a representative to the daily WLCG Operations meeting.
- Bring to attention of VOs (SAM/Nagios) test failures against sites.
- Provide a weekly report to management explaining these failures.
  - Nature of the failure.
  - Had the site recorded a scheduled downtime?

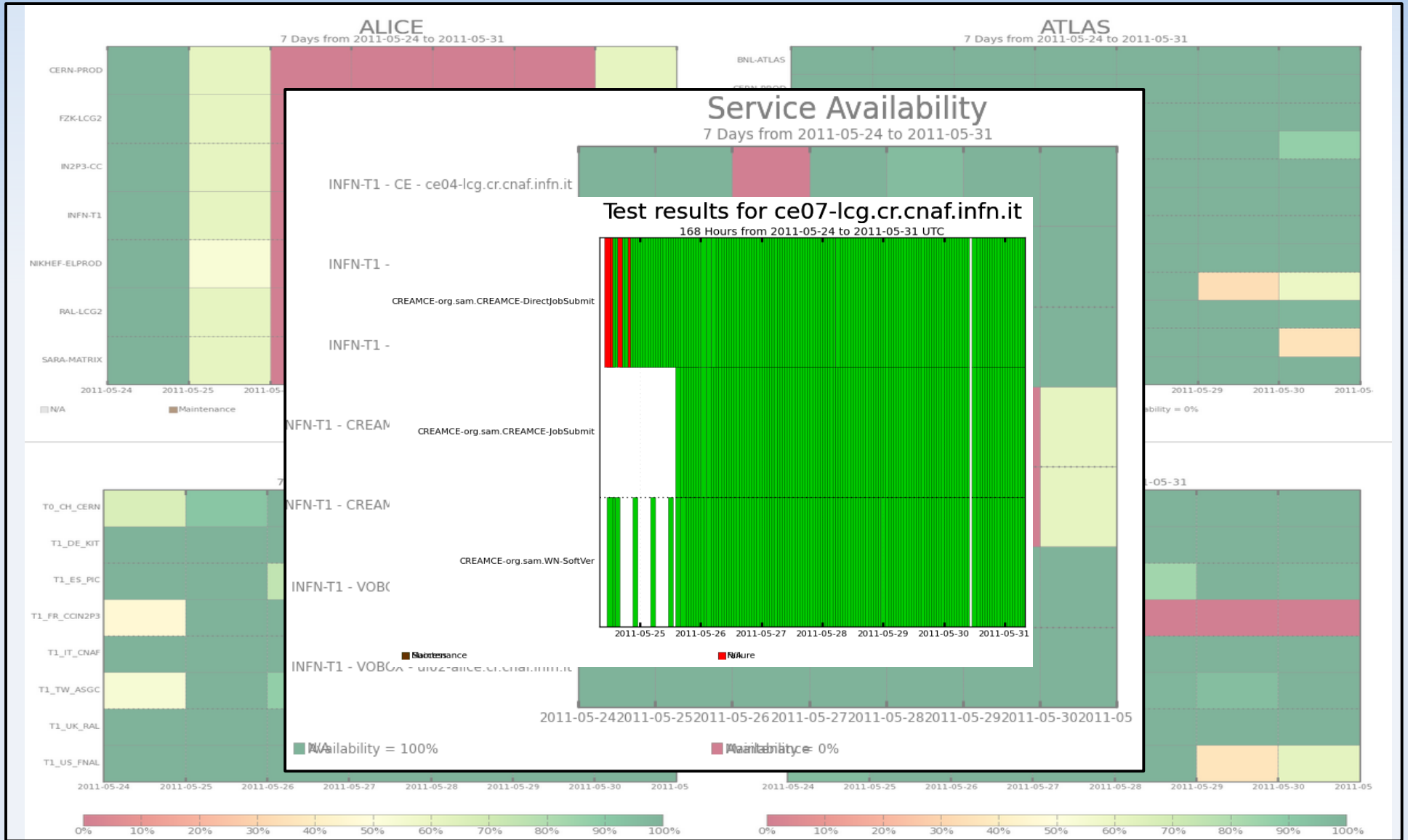
# Our starting point



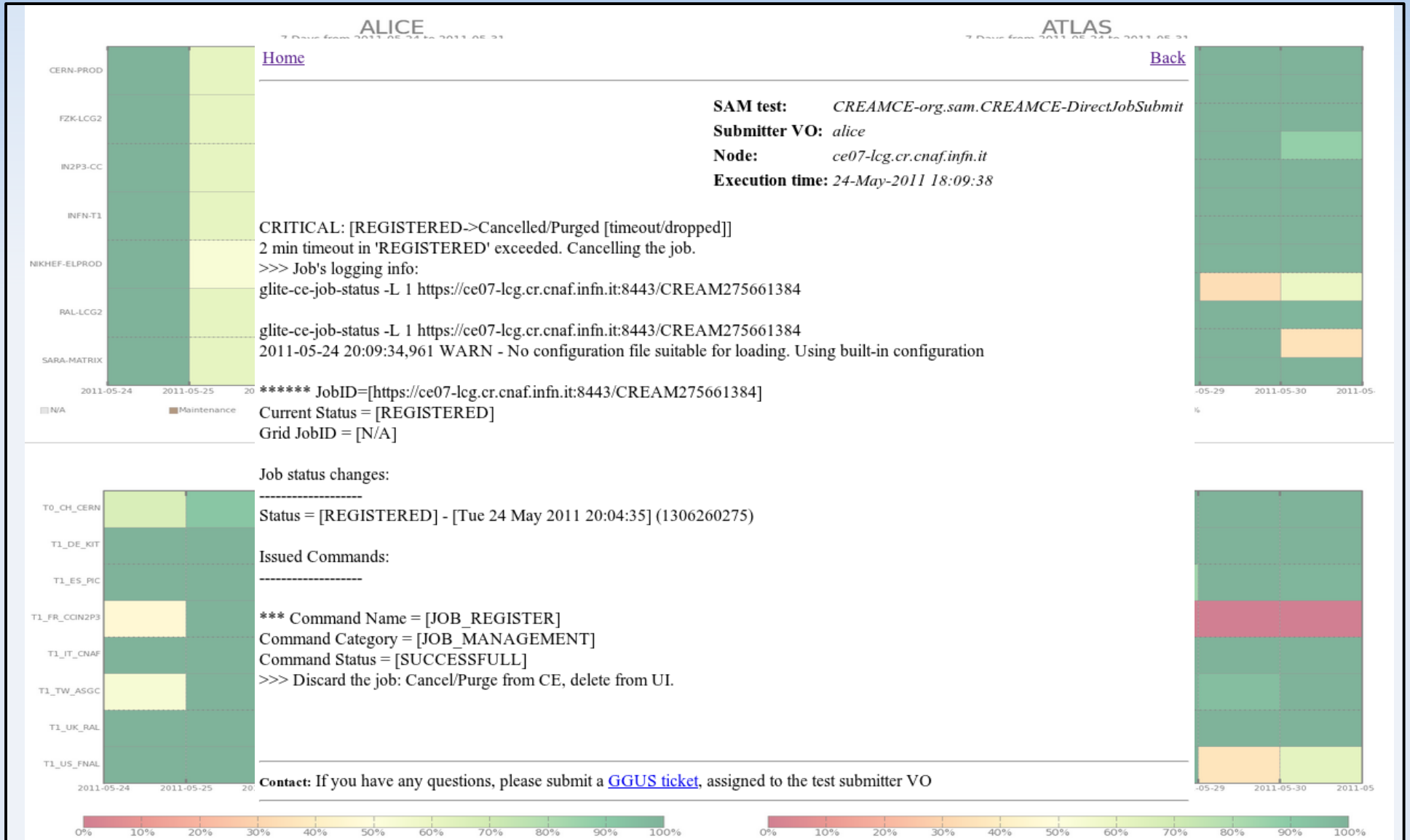
# Our starting point



# Our starting point



# Our starting point



# Streamlining the process

- Mattia's talk: “...possibility to have an automatic system that replaces repetitive work...”
  - “...aggregates the needed information...”

This allows to understand the threshold of availability and the impact of the problems

This is what we need to report to VO people (it should also have a link to the job log)

Needed: site services and tests are different by VO

This should contain only critical tests

This should have the link to the GOCDB site info (as for the SSB used in CMS)

<b>VO</b>	<b>SITE NAME</b>	<b>SITE AVAILAB. %</b>	<b>FAILED TEST</b>	<b>ERROR MSG (&amp; LINK to SAM JOB LOG)</b>	<b>TIME</b>	<b>GOCDB &amp; OIM</b>
LHCb	LCG.IN2P3.fr	50%	CE-sft-vo-swdir	<a href="#">Quota Timeout listing directory</a>	16:30 21-03-2011 UTC	<a href="#">UP</a>
<b>LHCb</b>	LCG.IN2P3.fr	50%	CE-sft-vo-swdir	<a href="#">AFS Permissions</a>	15:30 21-03-2011 UTC	<a href="#">UP</a>
<b>CMS</b>	TI_UK_RAL	40%	CE-org.sam.CE-JobSubmit	<a href="#">No matching resources</a>	08:30 21-03-2011 UTC	<a href="#">DOWN</a>

# Design brief

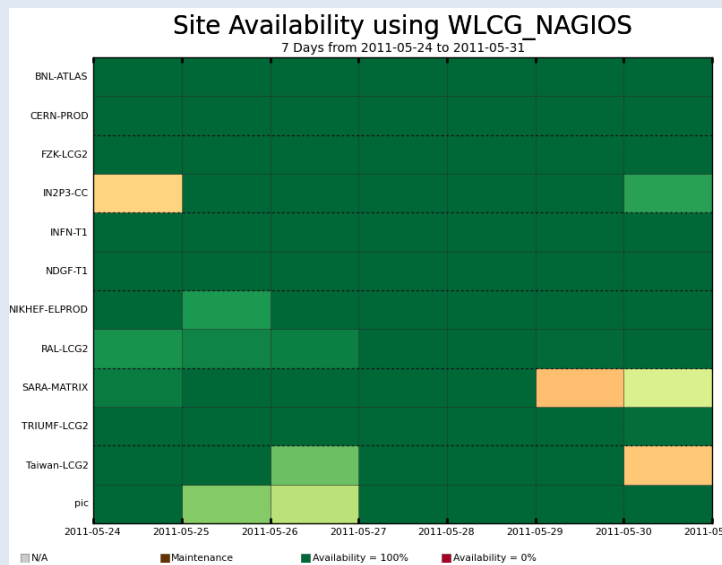
- Reports generated on a daily basis for yesterday's errors.
- Simple HTML page created by cron.
- Simple, compact interface.
- Links to other sites (test logs, GOCDB etc).
- Don't need to keep reports indefinitely.
- Log file analysis (difficult)
  - Start by searching logs for the most common errors, and refine with experience.



# Implementation: step 1

```
class VirtualOrganisation:
```

- Curl the JSON from <http://dashb-atlas-sam.cern.ch/dashboard/request.py/historicalsiteavailability>
- Return each site where availability < “some threshold (%)”



```
Yesterday FZK-LCG2 had an availability of 100.0
Yesterday IN2P3-CC had an availability of 100.0
Yesterday INFN-T1 had an availability of 100.0
Yesterday NDGF-T1 had an availability of 100.0
Yesterday NIKHEF-ELPROD had an availability of 100.0
Yesterday RAL-LCG2 had an availability of 99.0
Yesterday SARA-MATRIX had an availability of 33.0
Yesterday TRIUMF-LCG2 had an availability of 100.0
Yesterday Taiwan-LCG2 had an availability of 100.0
Yesterday pic had an availability of 100.0
```

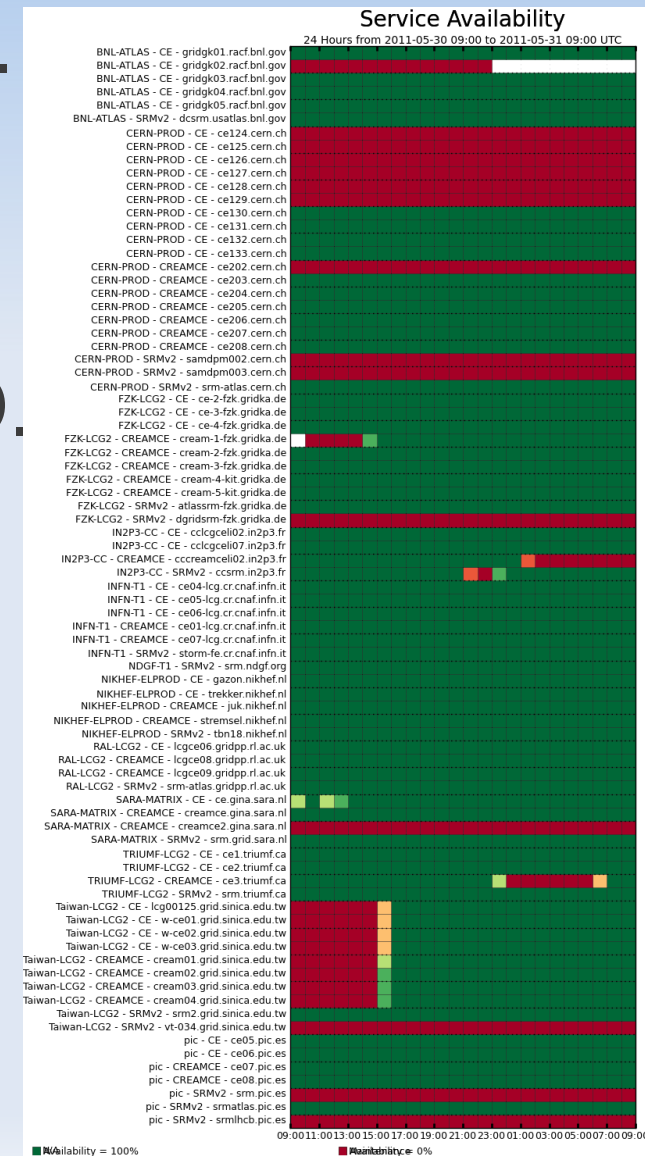
~

# Implementation: step 2

```
class SiteServices:
```

- We know which sites had failures.
- Construct URL to query historical service availability for those sites.
- Single *curl* to get all data for a VO.
- Returns a list of dictionaries with 'passing' and 'failing' tests:

```
{ 'TimeStamp': '2011-05-29T16:00:00',  
  'VOName': 'RAL-LCG2',  
  'AvValue': 1,  
  'ServiceType': 'CE',  
  'ServiceName': 'lcgce06.gridpp.rl.ac.uk' }
```

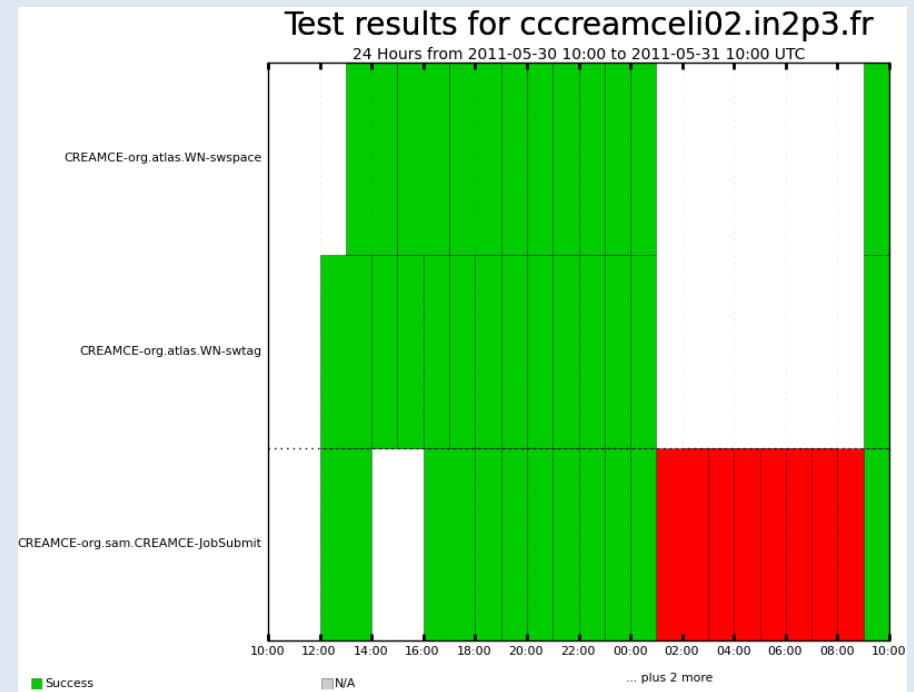


# Implementation: step 3

`class GetLogs:`

- For each failing service returned in step 2...
  - Retrieve test history for last 24 hours.
  - Potential for a lot of data; services often have multiple sub-tests.
  - Retain last three failures.

```
{'date': '2011-05-31 04:46:46', 'status': 0},  
{'date': '2011-05-31 05:06:55', 'status': 0},  
{'date': '2011-05-31 05:26:55', 'status': 0},  
{'date': '2011-05-31 05:46:55', 'status': 0},  
{'date': '2011-05-31 06:11:55', 'status': 0},  
{'date': '2011-05-31 06:36:55', 'status': 0},  
{'date': '2011-05-31 06:56:55', 'status': 0},  
{'date': '2011-05-31 07:16:48', 'status': 0},  
{'date': '2011-05-31 07:36:58', 'status': 0},  
{'date': '2011-05-31 07:56:48', 'status': 0},  
{'date': '2011-05-31 09:01:49', 'status': 0},  
{'date': '2011-05-31 09:42:00', 'status': 1},  
'TestName': 'CREAMCE-org.sam.CREAMCE-JobSubmit'}
```



# Implementation: step 3

```
logURL = 'https://lcg-sam.cern.ch:8443/sam/sam.py?funct=TestResult&nodename='+\
        serviceName+'&vo=ATLAS&testname='+element['TestName']+\  
        '&testtimestamp='+logTimeSec
```

- Construct URL to retrieve test log files.
- Only use last three failures for a given service:test name combination.
- Requires grid certificate (and hence password).
- Python *threads* run parallel retrievals via *curl*.
- Set of *greps* to cleanse logfiles for failure summary.

```
if 'CE-' in threadResult.testname:  
    grepCMD = "grep -A5 -E \"Reason\" " + logFileName + \  
             "| egrep -v \"Result|^---|^--|-\\ Source|-\\ Tag|-\\ Timestamp|-\\ User|\\= unavailable|-\\ Src\\\"" + \  
             "| sed 's/$/<BR>/g' > " + summaryFileName  
elif 'SRM' in threadResult.testname:  
    grepCMD = "grep -A1 -B2 -i error " + logFileName + \  
             "| sed 's/$/<BR>/g' > " + summaryFileName  
elif 'LFC' in threadResult.testname:  
    grepCMD = "grep -A2 CRITICAL " + logFileName + \  
             "| sed 's/$/<BR>/g' > " + summaryFileName  
else:  
    print "We appear to have something other than a CREAM/CE/SRM log."
```

# Implementation: create HTML

- Using HTML.py module ([www.decalage.info/python/html](http://www.decalage.info/python/html)) to turn a Python dictionary into HTML table.
- Tooltips provided by javascript ([www.dyn-web.com/code/tooltips](http://www.dyn-web.com/code/tooltips))

# HTML report



Date	Status	Service Name	Test Name	Log
2011-05-30 05:59:40	0	lcgce08.gridpp.rl.ac.uk	CREAMCE-org.sam.CREAMCE-JobSubmit	<a href="#">Log File</a>
2011-05-30 11:45:06	0	ce.gina.sara.nl	CE-org.sam.CE-JobSubmit	<a href="#">Log File</a>
2011-05-30 08:54:09	0	ce.gina.sara.nl	CE-org.sam.CE-JobSubmit	<a href="#">Log File</a>
2011-05-30 02:24:04	0	creamce.gina.sara.nl	CREAMCE-org.sam.CREAMCE-JobSubmit	<a href="#">Log File</a>
2011-05-30 02:04:04	0	creamce.gina.sara.nl	CREAMCE-org.sam.CREAMCE-JobSubmit	<a href="#">Log File</a>
2011-05-29 23:02:07	0	creamce.gina.sara.nl	CREAMCE-org.sam.CREAMCE-JobSubmit	<a href="#">Log File</a>
2011-05-30 20:52:55	0	creamce2.gina.sara.nl	CREAMCE-org.atlas.WN-swtag	<a href="#">Log File</a>
2011-05-30 19:52:55	0	creamce2.gina.sara.nl	CREAMCE-org.atlas.WN-swtag	<a href="#">Log File</a>
2011-05-30 18:52:59	0	creamce2.gina.sara.nl	CREAMCE-org.atlas.WN-swtag	<a href="#">Log File</a>
2011-05-30 08:20:30	0	creamce2.gina.sara.nl	CREAMCE-org.sam.CREAMCE-JobSubmit	<a href="#">Log File</a>
2011-05-30 07:15:26	0	creamce2.gina.sara.nl	CREAMCE-org.sam.CREAMCE-JobSubmit	<a href="#">Log File</a>
2011-05-30 06:40:18	0	creamce2.gina.sara.nl	CREAMCE-org.sam.CREAMCE-JobSubmit	<a href="#">Log File</a>
2011-05-30 08:29:29	0	lfc-atlas.grid.sara.nl	LFC-ch.cern.LFC-Ping	<a href="#">Log File</a>
2011-05-30 08:14:29	0	lfc-atlas.grid.sara.nl	LFC-ch.cern.LFC-Ping	<a href="#">Log File</a>
2011-05-30 07:59:21	0	lfc-atlas.grid.sara.nl	LFC-ch.cern.LFC-Ping	<a href="#">Log File</a>
2011-05-30 08:29:29	0	lfc-atlas.grid.sara.nl	LFC-ch.cern.LFC-Read	<a href="#">Log File</a>
2011-05-30 08:14:29	0	lfc-atlas.grid.sara.nl	LFC-ch.cern.LFC-Read	<a href="#">Log File</a>
2011-05-30 07:59:31	0	lfc-atlas.grid.sara.nl	LFC-ch.cern.LFC-Read	<a href="#">Log File</a>
2011-05-30 08:29:29	0	lfc-atlas.grid.sara.nl	LFC_L-ch.cern.LFC-Ping	<a href="#">Log File</a>
2011-05-30 08:14:29	0	lfc-atlas.grid.sara.nl	LFC_L-ch.cern.LFC-Ping	<a href="#">Log File</a>
2011-05-30 07:59:21	0	lfc-atlas.grid.sara.nl	LFC_L-ch.cern.LFC-Ping	<a href="#">Log File</a>
2011-05-30 08:29:29	0	lfc-atlas.grid.sara.nl	LFC_L-ch.cern.LFC-Read	<a href="#">Log File</a>
2011-05-30 08:14:29	0	lfc-atlas.grid.sara.nl	LFC_L-ch.cern.LFC-Read	<a href="#">Log File</a>
2011-05-30 07:59:31	0	lfc-atlas.grid.sara.nl	LFC_L-ch.cern.LFC-Read	<a href="#">Log File</a>

# HTML report

Date	Status	Service Name	Test Name	Log
2011-05-30 05:59:40	0	lccce08.gridpp.rl.ac.uk	CREAMCE-org.sam.CREAMCE-JobSubmit	<a href="#">Log File</a>
2011-05-30 11:45:06	0	ce.gina.sara.nl	CE-org.sam.CE-JobSubmit	<a href="#">Log File</a>
2011-05-30 08:54:09	0	ce.gina.sara.nl	CE-org.sam.CE-JobSubmit	<a href="#">Log File</a>
2011-05-30 02:24:04	0	creamce.gina.sara.nl	CREAMCE-org.sam.CREAMCE-JobSubmit	<a href="#">Log File</a>
2 Status Reason: failed (LB query failed) 2 Destination: creamce.gina.sara.nl:8443/cream-pbs-medium 2 Submitted: Mon May 30 04:18:59 2011 CEST ----- 2 glite-wms-job-logging-info -v 2 https://wms201.cern.ch:9000/X1AT0-Sq0zp-4XwqvWj3nw ----- 2 - Reason = BLAH error: submission command failed (exit code = 1) (stdout: (stderr:pbs_iff: cannot read reply from pbs_server-No Permission.-qsub: cannot connect to server ce.gina.sara.nl (errno=15007) Unauthorized Request -) N/A (jobId = CREAM401484146) 2 Event: Resubmission 2 - Reason = Job resubmitted by ICE 2 - Reason = failed (LB query failed) -----				<a href="#">le</a> <a href="#">le</a> <a href="#">le</a> <a href="#">le</a> <a href="#">le</a> <a href="#">le</a>
2011-05-30 07:15:26	0	creamce2.gina.sara.nl	CREAMCE-org.sam.CREAMCE-JobSubmit	<a href="#">Log File</a>
2011-05-30 06:40:18	0	creamce2.gina.sara.nl	CREAMCE-org.sam.CREAMCE-JobSubmit	<a href="#">Log File</a>
2011-05-30 08:29:29	0	lfc-atlas.grid.sara.nl	LFC-ch.cern.LFC-Ping	<a href="#">Log File</a>
2011-05-30 08:14:29	0	lfc-atlas.grid.sara.nl	LFC-ch.cern.LFC-Ping	<a href="#">Log File</a>
2011-05-30 07:59:21	0	lfc-atlas.grid.sara.nl	LFC-ch.cern.LFC-Ping	<a href="#">Log File</a>
2011-05-30 08:29:29	0	lfc-atlas.grid.sara.nl	LFC-ch.cern.LFC-Read	<a href="#">Log File</a>
2011-05-30 08:14:29	0	lfc-atlas.grid.sara.nl	LFC-ch.cern.LFC-Read	<a href="#">Log File</a>
2011-05-30 07:59:31	0	lfc-atlas.grid.sara.nl	LFC-ch.cern.LFC-Read	<a href="#">Log File</a>
2011-05-30 08:29:29	0	lfc-atlas.grid.sara.nl	LFC_L-ch.cern.LFC-Ping	<a href="#">Log File</a>
2011-05-30 08:14:29	0	lfc-atlas.grid.sara.nl	LFC_L-ch.cern.LFC-Ping	<a href="#">Log File</a>
2011-05-30 07:59:21	0	lfc-atlas.grid.sara.nl	LFC_L-ch.cern.LFC-Ping	<a href="#">Log File</a>
2011-05-30 08:29:29	0	lfc-atlas.grid.sara.nl	LFC_L-ch.cern.LFC-Read	<a href="#">Log File</a>
2011-05-30 08:14:29	0	lfc-atlas.grid.sara.nl	LFC_L-ch.cern.LFC-Read	<a href="#">Log File</a>
2011-05-30 07:59:31	0	lfc-atlas.grid.sara.nl	LFC_L-ch.cern.LFC-Read	<a href="#">Log File</a>

<https://lfc-sam.cern.ch:8443/sam/sam.py?func=TestResult&nodename=creamce.gina.sara.nl&vo=ATLAS&testname=CREAMCE-org.sam.CREAMCE-JobSubmit&testtimestamp=1306722244>

# Future work

- Password handling for grid certificate (WIP).
- Better error handling.
- Site availability % in table?
- Rotation of output files; send reports to our Dropbox repository.
- Roll out to all VOs; currently full chain works for ATLAS.
  - Many thanks to Pablo for his help here.
- Code refactoring.
- Links to GOCDB for downtime.
- Move to DNG host, and use hostcert.