



WLCG Nagios and the NGS



Connecting Infrastructure

Connecting Research

We have a plan

- NGS is using a highly customised version of the (SDSC written) INCA monitoring framework.
- It was became too complicated to maintain.
- Decision taken to replace it with WLCG Nagios. (After all, Kashif persuaded it to work for GridPP.)
- What could possibly go wrong...?

- WLCG Nagios is the well-known nagios monitoring framework with:
 - **Plugins** to check grid stuff.
 - Hooks into a **message bus** system for collecting and sending results.
 - An automatic configuration system called **NCG**.
- But you probably knew that already...



NGS

Déjà vu, all over again

- From INCA we learned: don't try to be clever
 - No more smart-arsed customisation of other peoples code.
 - Adopt externally written plugins where ever possible.
 - Configuration **must** be done via NCG.
 - Site information **must** come from GOCDDB and BDII.



**WHAT COULD POSSIBLY GO
WRONG....?**

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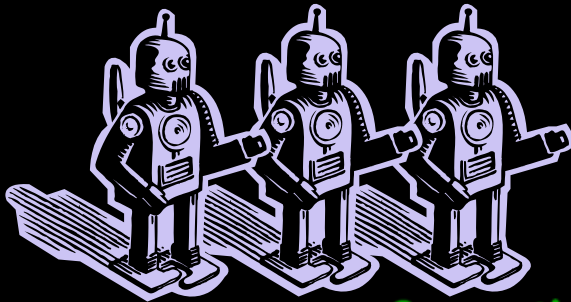


NGS

Spot the difference

GridPP

- Subject specific and comparatively homogeneous.
- Scientific Linux.
- gLite stack.
- Software updated in step.



Connecting Infrastructure

NGS

- Grid software bolted on to existing services.
- Any old Linux and the occasional Windows system.
- Stack is a mixture of bits of gLite, Globus and others.
- Stack updated 'when needed'.



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NGS

When worlds collide...

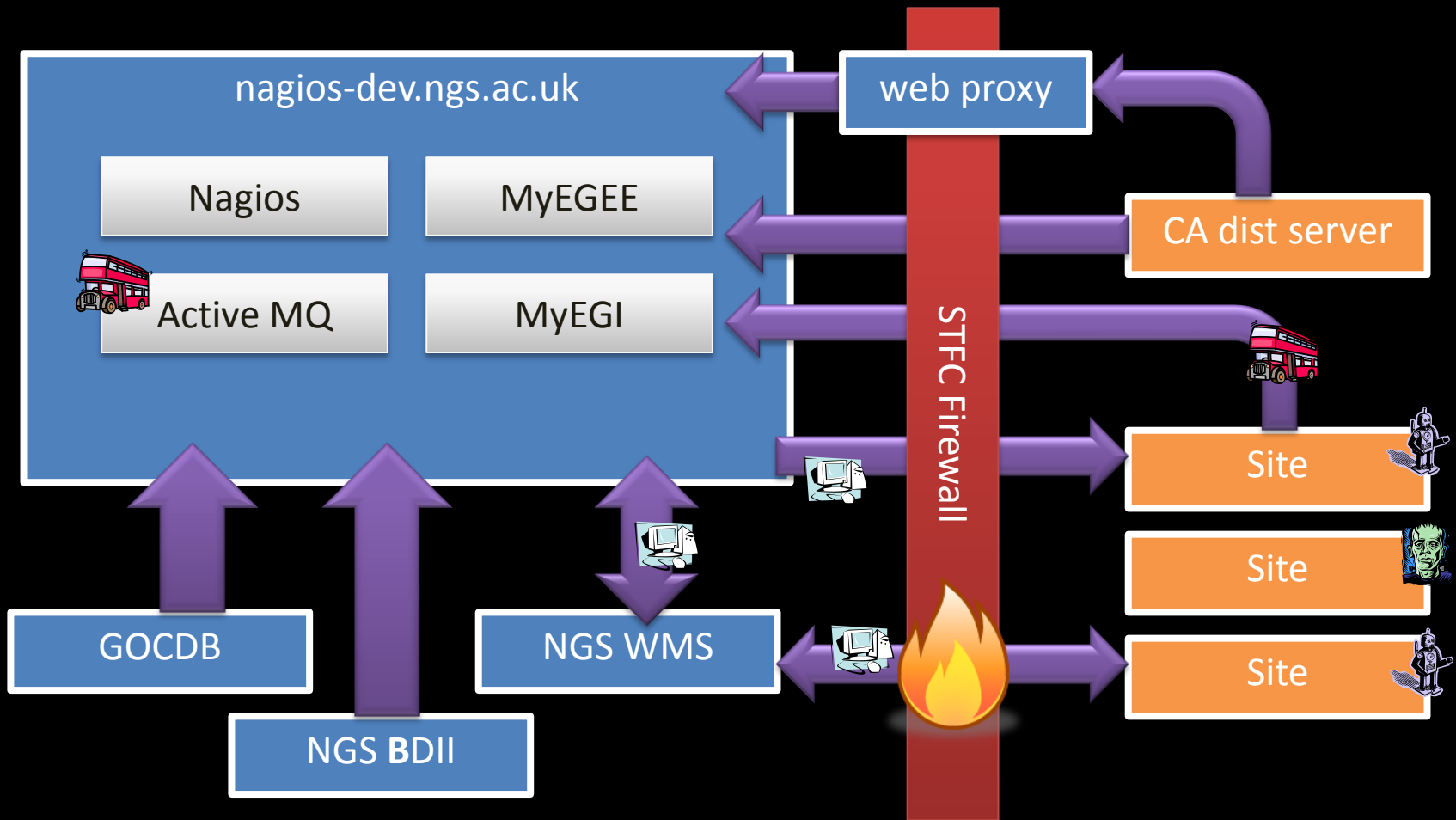
- When running software written for gLite on the NGS...
 - Libraries and utilities are out of step.
 - Files are missing or not where you expect them to be.
 - Published information is not always completely accurate.
 - The Ops VO is missing.

- STFC providing the Nagios infrastructure:
 - one development instance
 - one test instance
 - (currently) one production instance.
- Nagios development work run from Leeds. Leeds developers only get access to the ‘nagios-dev’ server.
- Development environment originally completely separate from production / test one. It has its own message broker.



NGS

Meet the NGS nagios development server



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Problems: fighting firewalls

- STFC 'standard' is to use the `http_proxy` environment variable to direct web traffic via the proxy.
- NCG and some Perl plugins were not web-proxy aware.
- Simple to fix:

```
LWP::UserAgent->new(...,env_proxy => 1)
```
- Patch accepted by WLCG Nagios developers.





NGS

Problems: when is a CE not a CE

- ... when it is part of the NGS.
- Many NGS sites are tagged as 'CE's in GOCDDB.
- Nagios submitted CE-probe tests.
- The tests fail in interesting ways.
- Jobs submitted via the WMS fail with
'Cannot read JobWrapper output, both from
Condor and from Maradona'





NGS

The hand of Maradona

- 'Maradona' message comes from the script generated by WMS.
- Only appears if ShallowRetryCount \neq -1.
- WMS scripts generated by WLCG Nagios have ShallowRetryCount \neq -1.
- ShallowRetryCount mechanism uses GridFTP to delete a marker file.
- It needs something installed that can delete via GridFTP.
- UberFTP is available and can do the job but is not widely deployed.



Unfortunately...

- With a working GridFTP file remover, CE-probes run but fail.
- Not yet clear why - messages miss the bus.
- If it cannot be fixed, we will probably have to use direct tests against the GRAM service instead.





NGS

Problems: Missing the bus.

- Development service has a separate message bus to avoid confusing/breaking the production infrastructure.
- Development ActiveMQ service is blocked by the firewall. This is being fixed **now**.
- Some plugins will accept an alternative bus via the `--mb-uri` option.
- NCG does not know how to set the `--mb-uri` option.





NGS

Chasing the bus

- Simple to adding support for --mb-uri
- Modify NCG::LocalMetrics::Hash to include:
`$WLCG_SERVICE->{'org.sam.CE-JobState'}
->{attribute}->{MB_URI} = "--mb-uri";`
- Create etc/ncg/ngs-localdb.d/activemq
`ATTRIBUTE!MB_URI!stomp://amqserver:6163/`
- Does it work? I'll let you know when the firewall is opened up.





NGS

Off the (WLC) Grid

- NGS sites provide services unknown to WLCG
 - Amazonian style clouds.
 - Storage Resource Broker.
 - And more...
- Plugins will be written for these and bolted on.
- We will **not** be making a habit of this.



NGS

Which way now?

- There should be one monitoring service for the NGI.
- `If I were going there, I wouldn't start from here.'
- Lots of open questions
 - What tests should be run?
 - How do we tag sites in the GOCDB to run these tests?
 - What VO and roles should be used for tests?



NGS

Acknowledgements

- Kashif Mohammed (Oxford)
- Cristina Del Cano Novales (STFC/RAL)
- Jonathan Churchill (STFC/RAL)
- Paul Townend (Leeds)



NGS

Communications

- Questions/ideas can be emailed to me - J.Lander@leeds.ac.uk
- Progress reports on Nagios work are posted to <http://nationalgridservice.blogspot.com>
- For more about the NGS, visit <http://www.ngs.ac.uk>