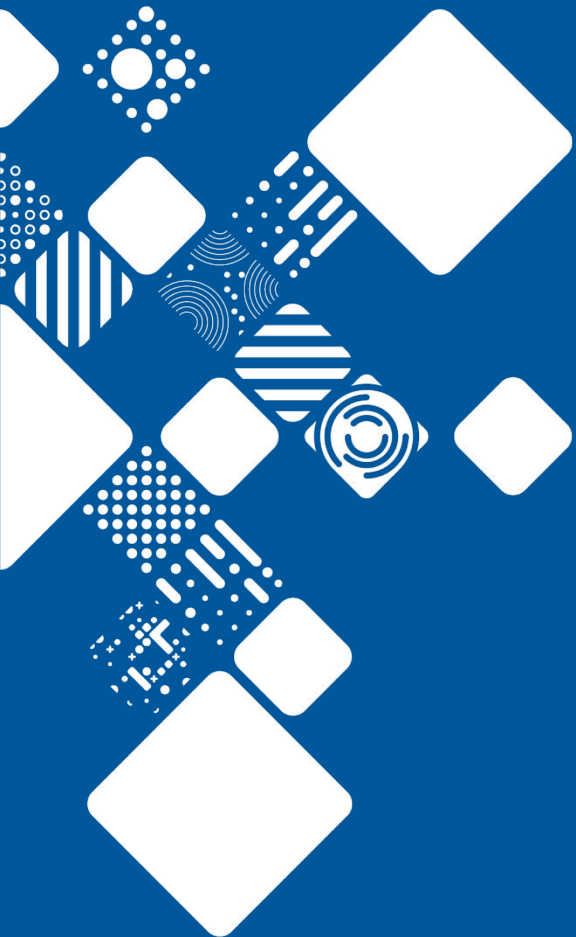


High(ish) Availability For iRODS

John Constable
Informatics Support Group

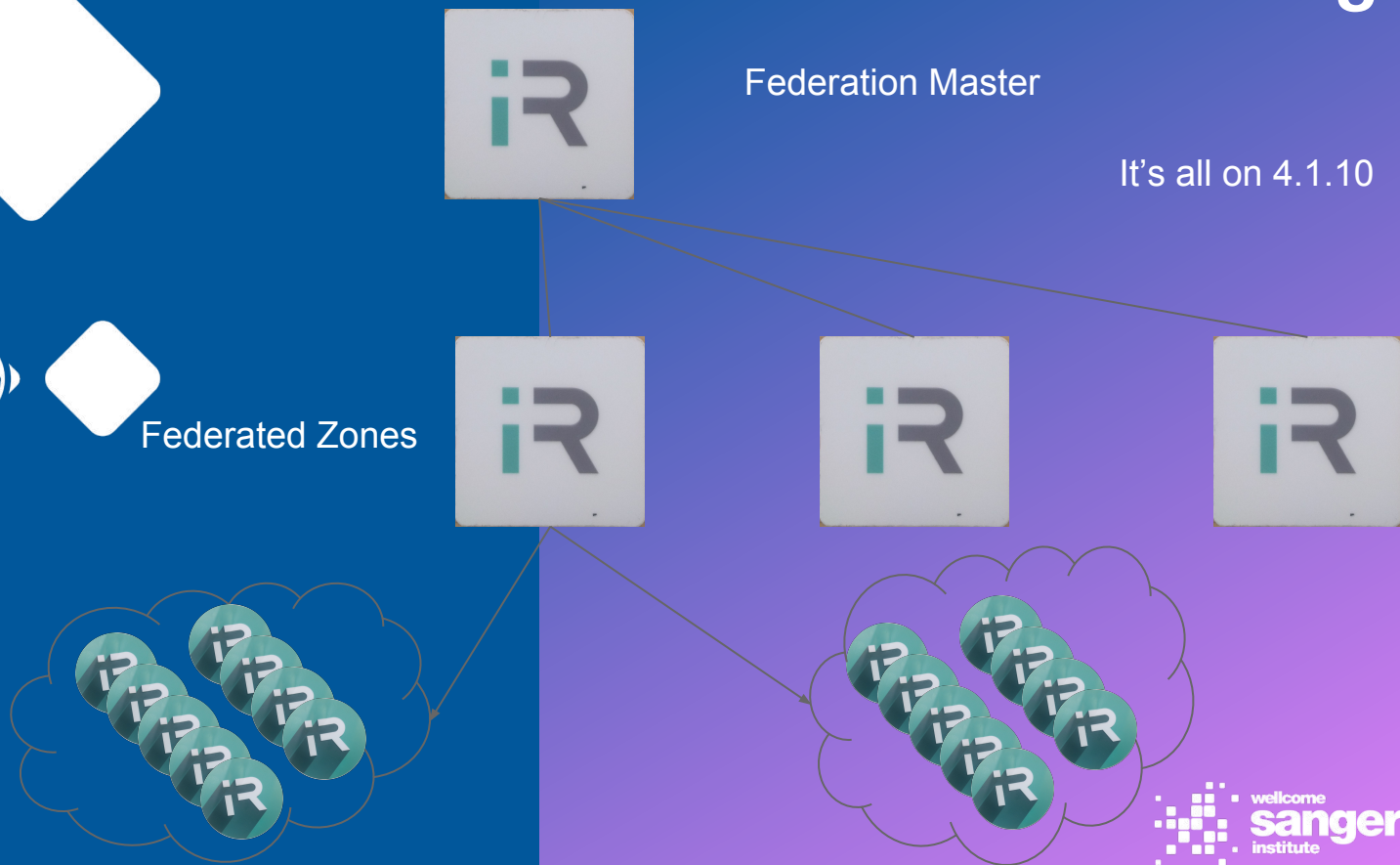


Design User Stories

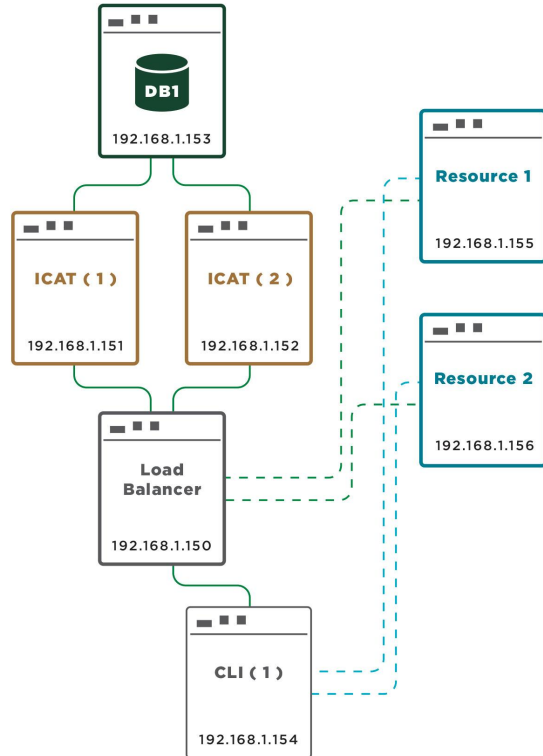
As a Systems Administrator, I want to be able to take an IES down for maintenance without affecting sequencing pipelines

As a Zone Administrator, I don't want the failure of one server to stop the pipelines

Current Design



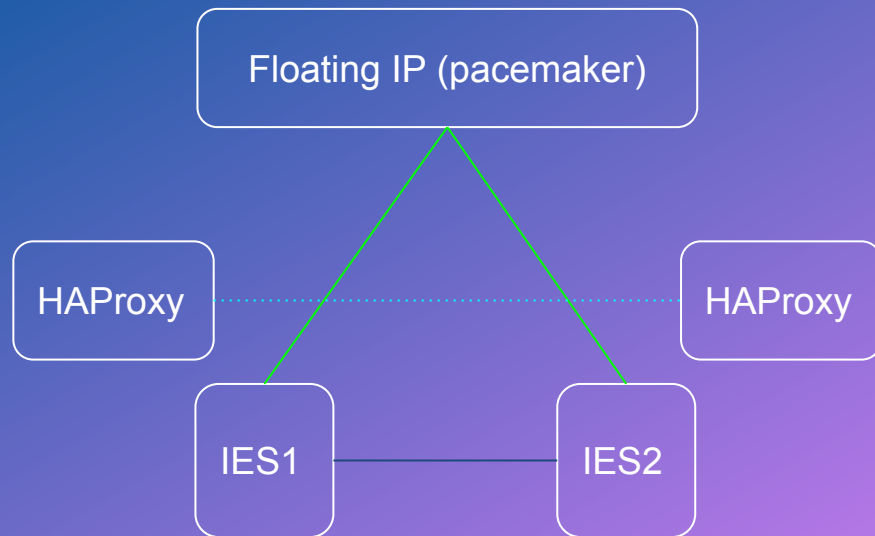
Reference Design



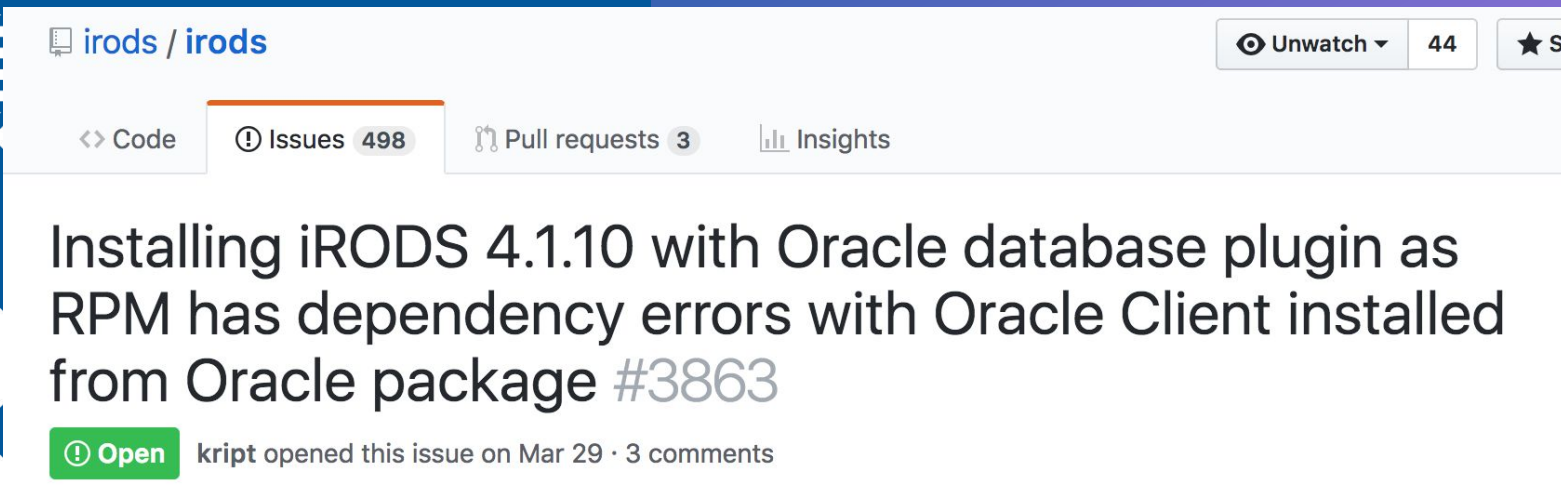
Taken from
<https://irods.org/2015/07/configuring-irods-for-high-availability/>

However, this leaves the load balancer as a single point of failure, if you're not using LBaaS such as on Amazon et al.

Design



We ran into a few snags



The screenshot shows a GitHub repository page for 'irods / irods'. The top navigation bar includes 'Unwatch' and '44' stars. Below the repository name, there are tabs for 'Code', 'Issues 498', 'Pull requests 3', and 'Insights'. The 'Issues' tab is selected, displaying a list of issues. The first issue is titled 'Installing iRODS 4.1.10 with Oracle database plugin as RPM has dependency errors with Oracle Client installed from Oracle package #3863'. It is marked as 'Open' and was opened by 'kript' on Mar 29, with 3 comments.

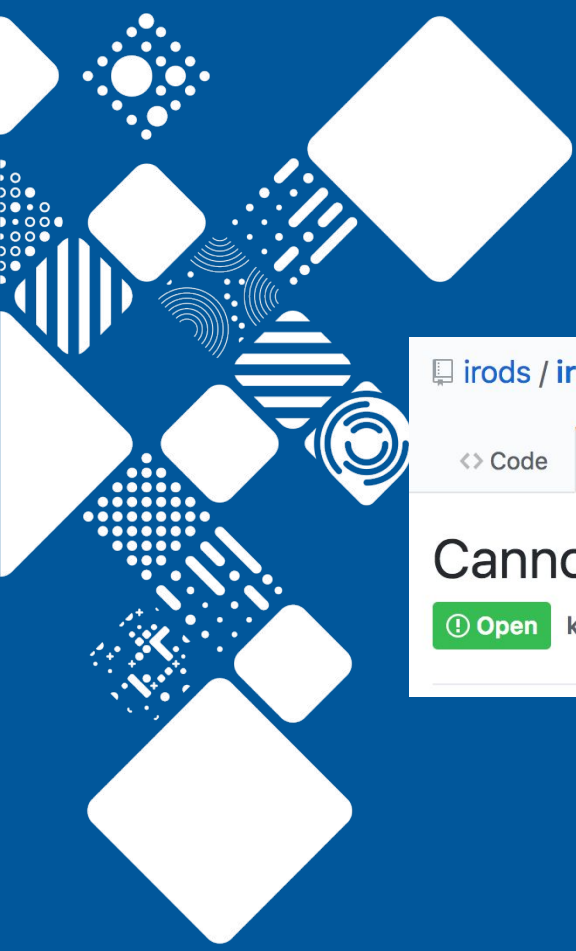
irods / irods

Unwatch 44

<> Code ⓘ Issues 498 🔗 Pull requests 3 📊 Insights

Installing iRODS 4.1.10 with Oracle database plugin as RPM has dependency errors with Oracle Client installed from Oracle package #3863

🔔 Open kript opened this issue on Mar 29 · 3 comments



irods / irods Unwatch ▾ 44 ★ Star

[Code](#) [Issues 498](#) [Pull requests 3](#) [Insights](#)

Cannot setup two new iES servers simultaneously #3864

Open kript opened this issue on Mar 29 · 0 comments



<> Code

! Issues 498

🔗 Pull requests 3

📊 Insights

Control which IP Address or network interfaces iRODS binds to #3872

👤 Open [I've opened this issue](#) [Add a comment](#)

irods / irods

Unwatch ▾

44

★ St

<> Code

🔔 Issues 498

🔗 Pull requests 3

📊 Insights

setup script ignores non-standard port value provided in resource setup tests #3873

🔔 Open

kript opened this issue on Apr 6 · 2 comments

Not really a snag,
but boy does it make the logs chatty



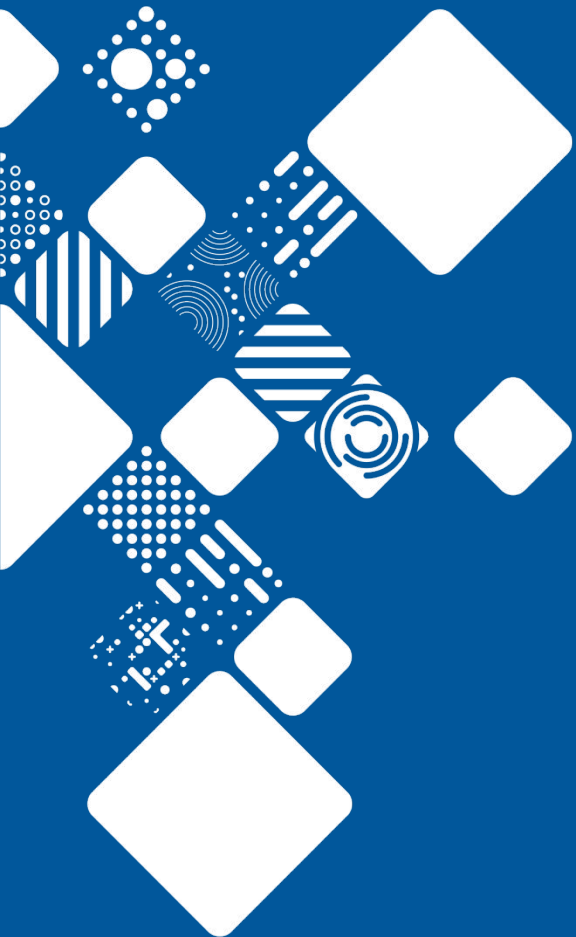
irods / irods

Unwatch 44 ★ Sta

<> Code ⓘ Issues 498 🔗 Pull requests 3 📊 Insights

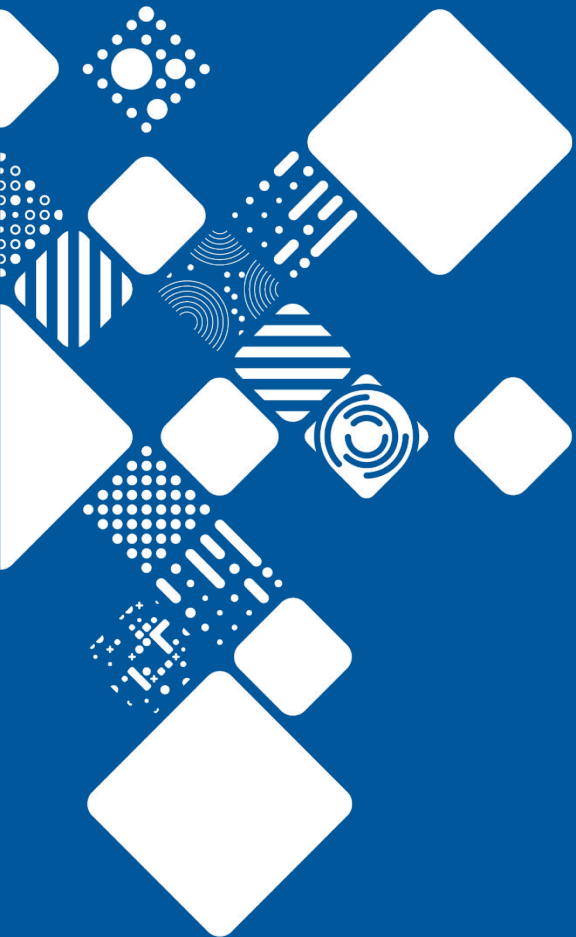
sending 'PING' to 1247 causes -4000 error in log #3880

🔔 Open kript opened this issue on Apr 12 · 0 comments



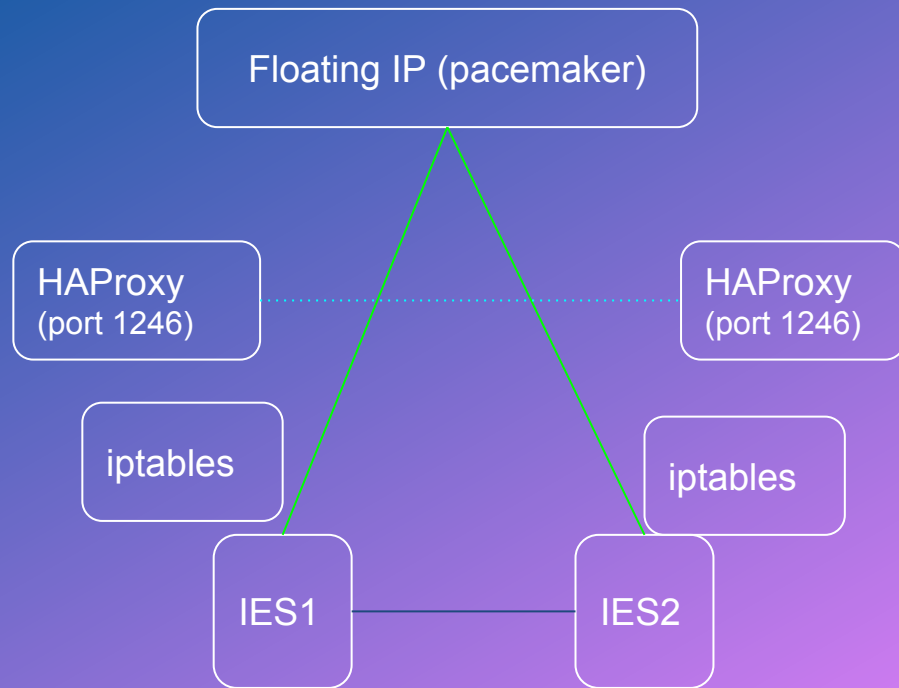
Whatever port you install the IES on,
It expects the rest of the Zone to also
be on.

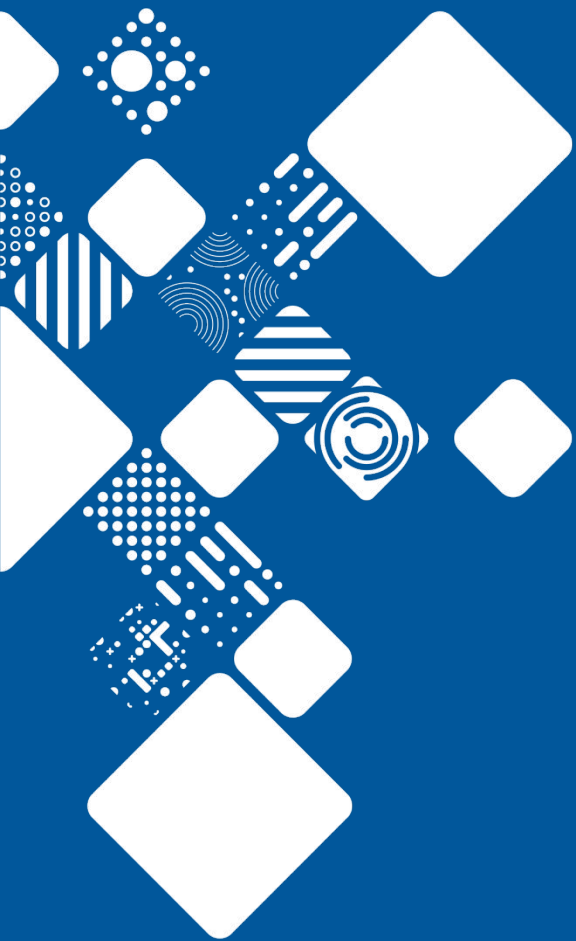
This makes installing HAproxy in front
of it somewhat... tricky.



IPtables to the rescue!

Current Design





- name: "Red Hat | Query firewalld for deployed rules"

command: firewall-cmd --list-all

register: firewall_rules

tags:

- testing_firewall

- haproxy

- name: "Red Hat | Forward iRODS Traffic to HAProxy"

shell: firewall-cmd

--add-forward-port=port=1247:proto=tcp:toport=1246
:toaddr={{ ip4_backend }} --permanent

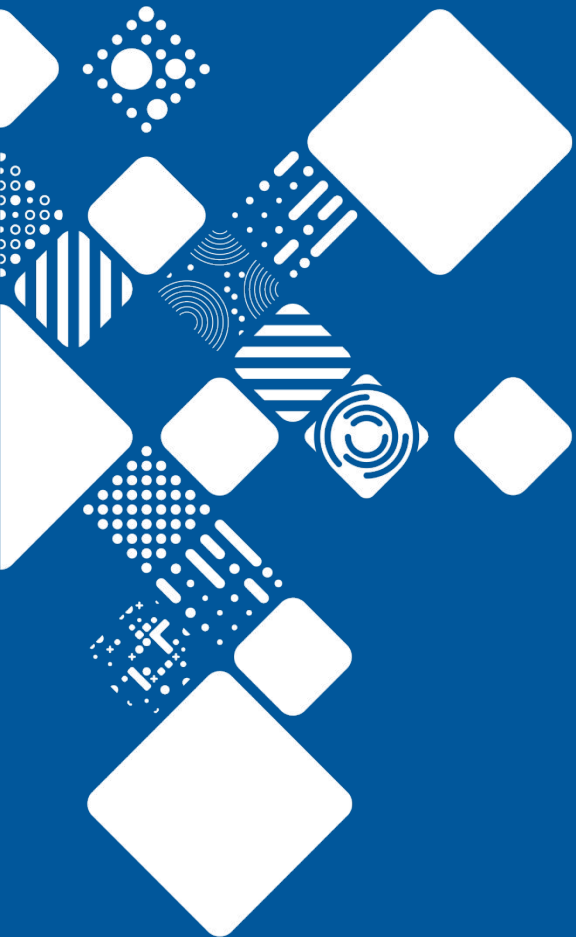
when: "'proto=tcp:toport=1246:toaddr=' not in
firewall_rules.stdout"

tags:

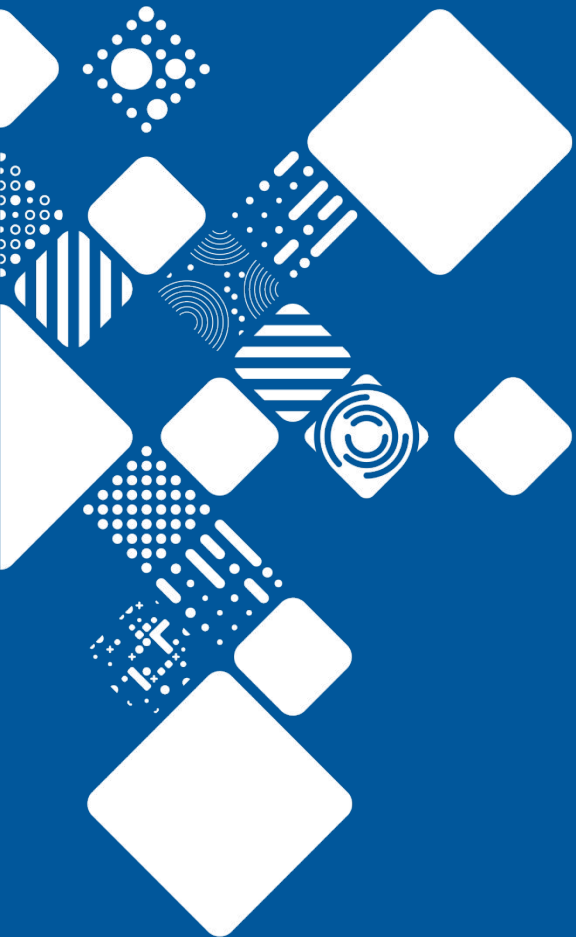
- testing_firewall

- haproxy

notify: "Restart firewalld"



Performance Benchmarking



Old Infrastructure;
10G (1 on VM's until recently))
Federation master: 8G RAM, two
vCPU's
Largest Zone IES: 8G RAM, 8 CPU

New Infrastructure;
Two servers
front and back end 10G (legacy 25),
520G RAM
SSD



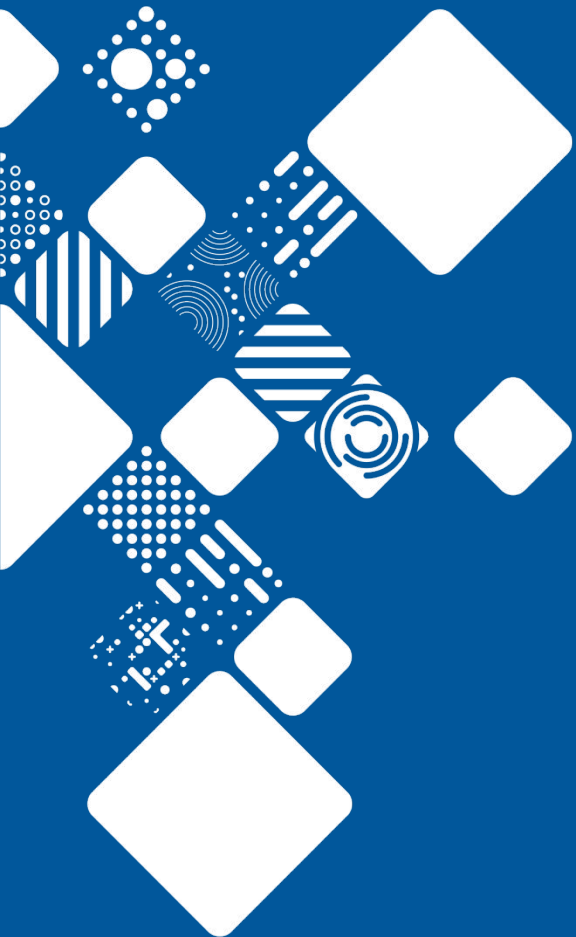
Using a variant of Terrell's Benchmarking script

<https://irods.org/2016/09/irods-4-1-9-networking-performance-whitepaper/>

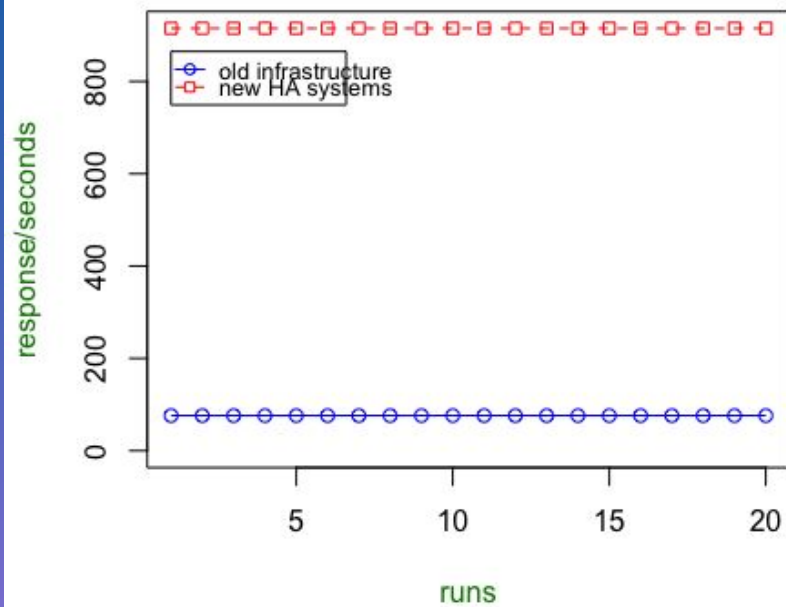


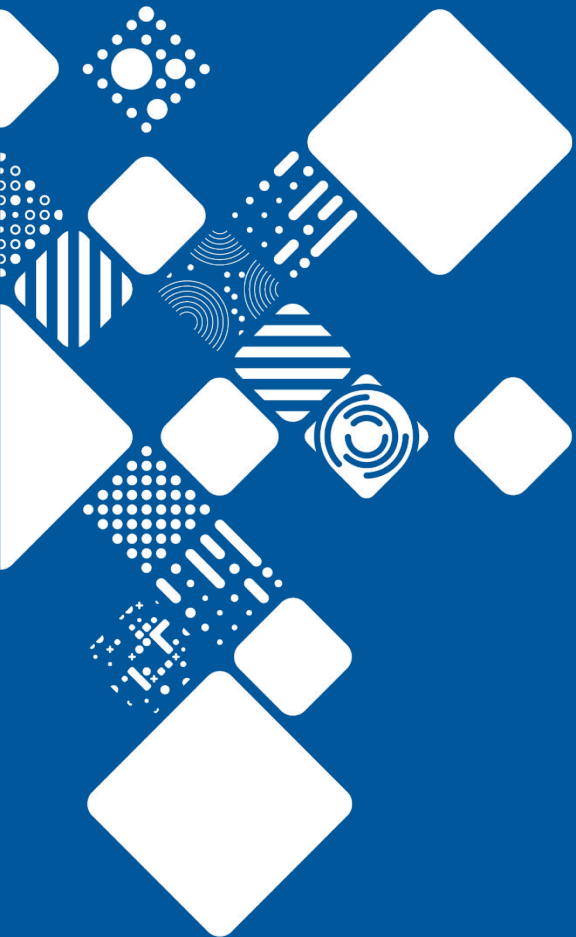
Unfortunately, this is something of a Work In Progress

Only a small set of test data, from four servers



iput 1MB file

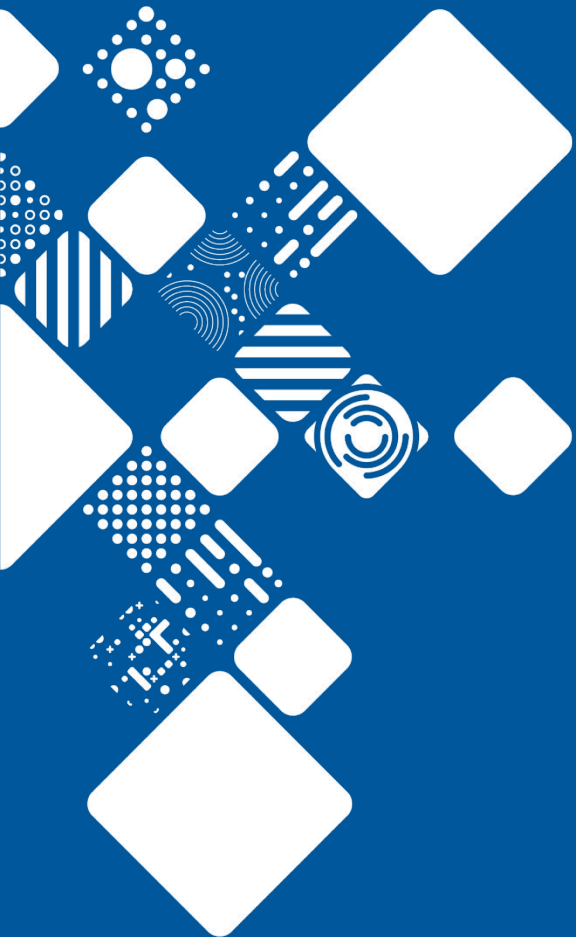




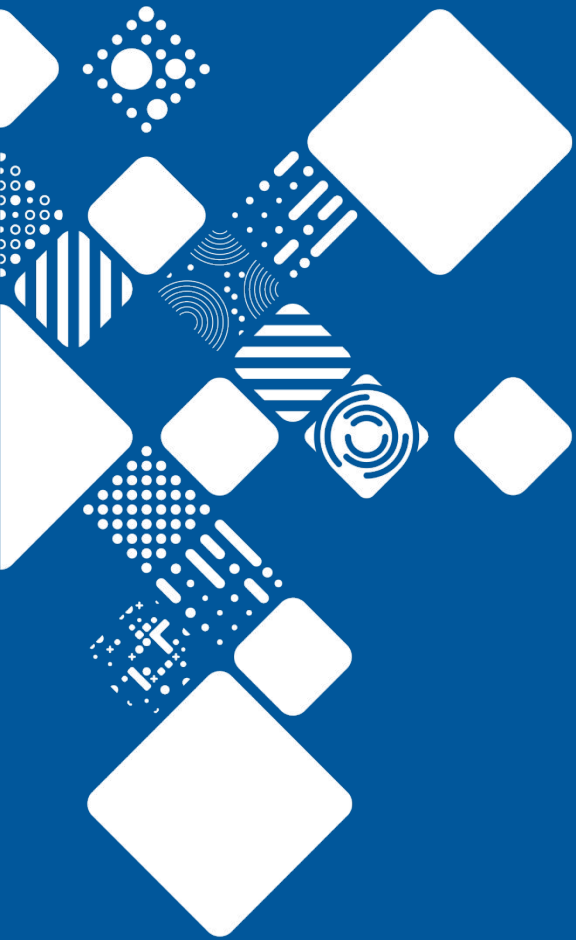
We suspect routing

Or HAProxy.

It's some kind of misconfiguration on our end, likely.



To Be Continued?



Thank you for listening!

john.constable@sanger.ac.uk

@kript