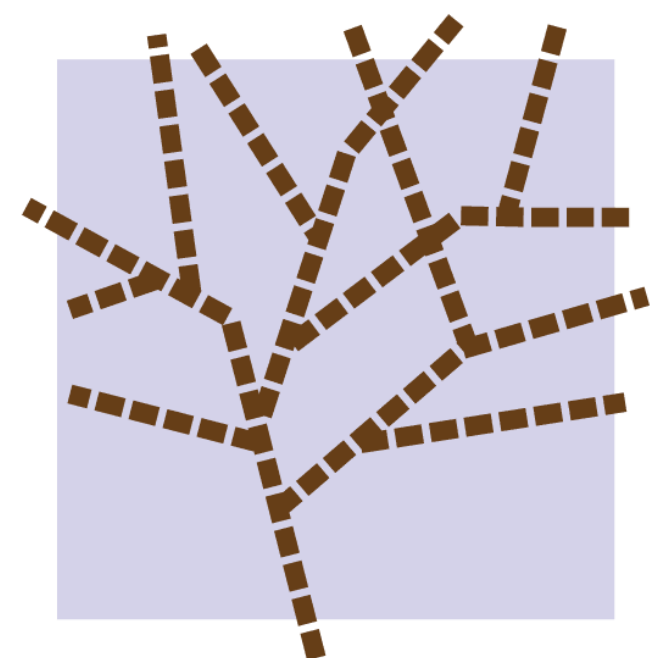




Systems Engineering Update

Matt Pounsett, AGM 2020
The Ether

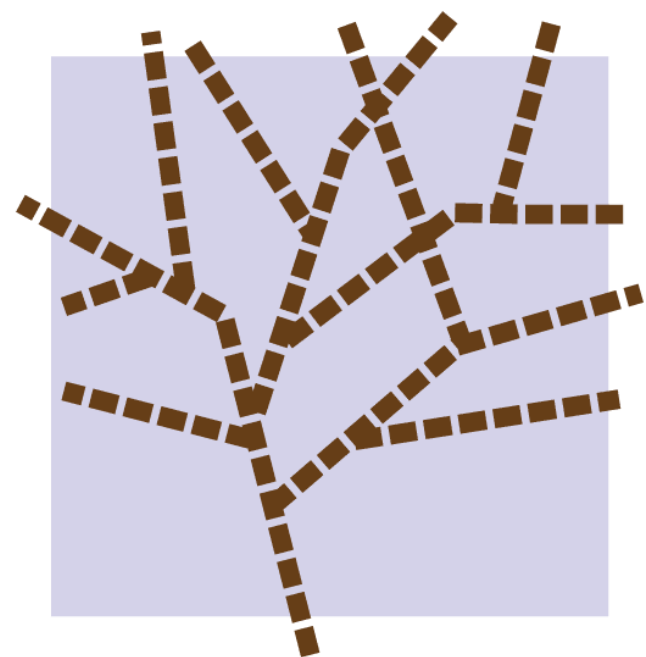


DNS-OARC

Domain Name System Operations Analysis and Research Center

See The Written Report

- For most subjects, please see the written report at <https://indico.dns-oarc.net/event/34/attachments/756/1305/202009-OARC33-Systems-Report.pdf>

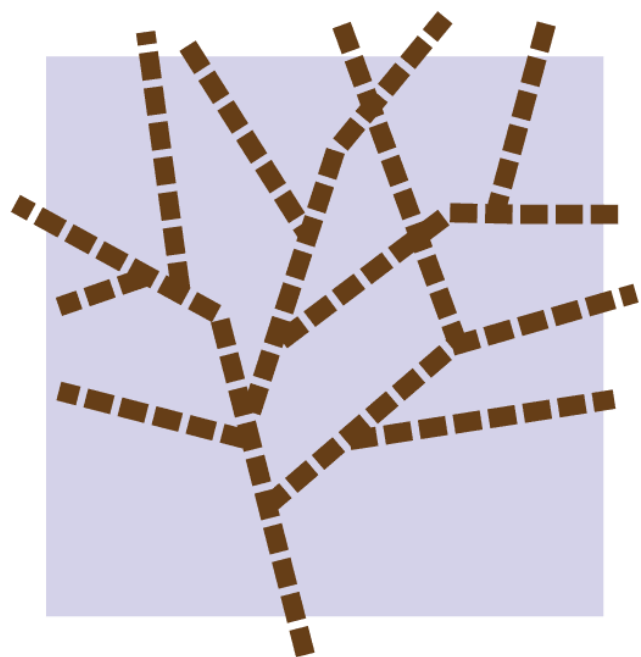


DNS-OARC

Domain Name System Operations Analysis and Research Center

Looking for Assistance, again...

- First short-term contract ended, mostly successfully
- Looking for longer-term contractor to help with hands-on work currently blocked by travel restrictions, and TO-DO items from previous contract that weren't completed.
- Also need hands for deploying the new storage architecture.
- Not necessarily the same person or organization.
- See Matt or Keith for more information

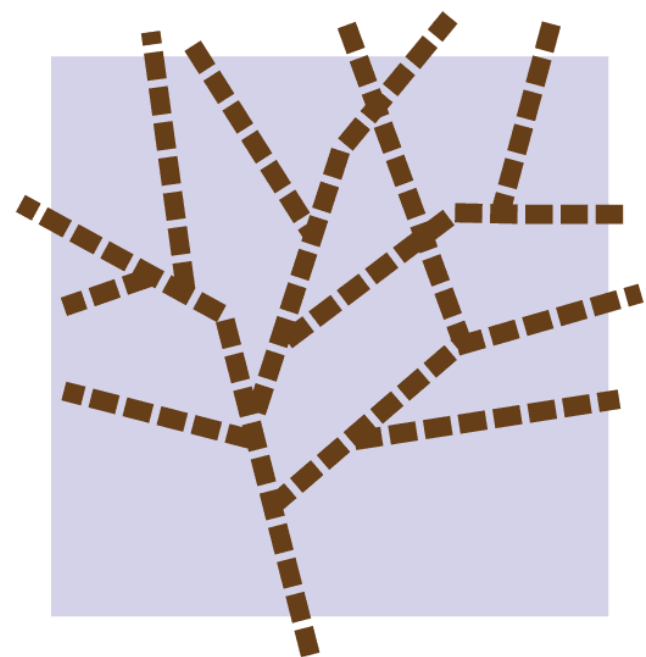


DNS-OARC

Domain Name System Operations Analysis and Research Center

File Server Hardware Issues

- Fs1 no longer mounts its storage volume
- Fs5 is failing to boot (failed motherboard, CPU, or other core component)

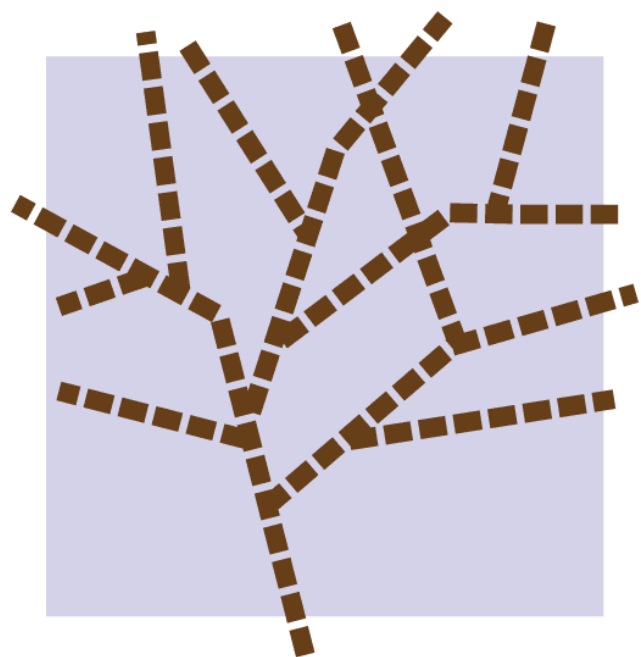


DNS-OARC

Domain Name System Operations Analysis and Research Center

ODVR Shutdown

- OARC's Open DNSSEC Validating Resolver service is over ten years old
- The original purpose of the service has been served, and seems no longer relevant
- No response from members or the wider DNS community to requests for reasons to keep it alive.
- Official shutdown mere hours away, on September 30th

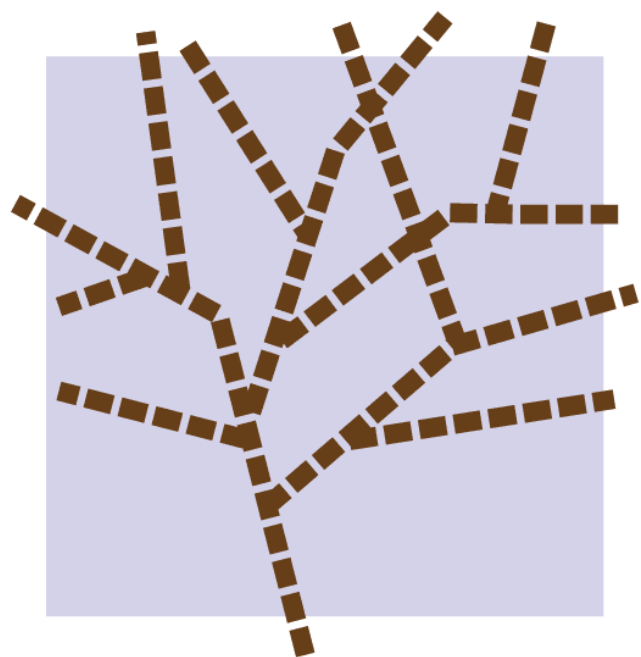


DNS-OARC

Domain Name System Operations Analysis and Research Center

... and Jabber Too

- OARC's Jabber service replaced by Mattermost; Jabber will be shut down on Wednesday, September 30th
- Mattermost has multiple "Teams", with different channels, for Members and for the general Community
- OARC Members and Supporters email admin@dns-oarc.net for an invitation to the Members Team
- Anyone in the wider DNS community can join the Community Team by signing up at <https://chat.dns-oarc.net/>

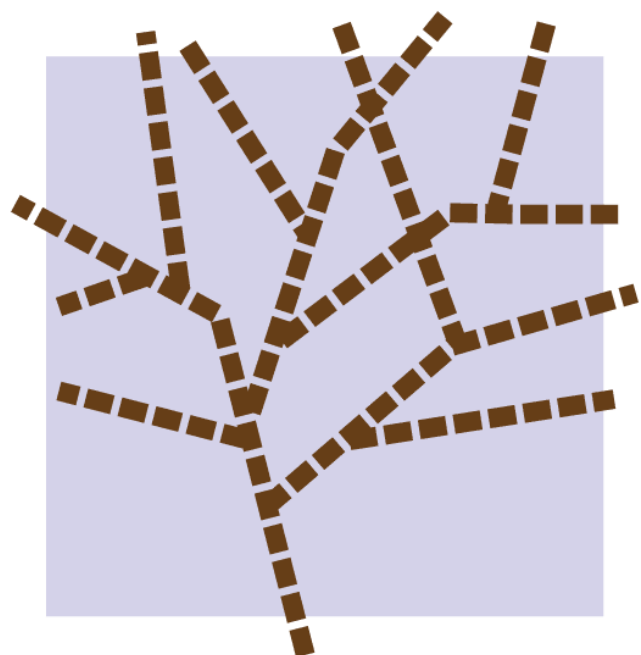


DNS-OARC

Domain Name System Operations Analysis and Research Center

ZFR Holes

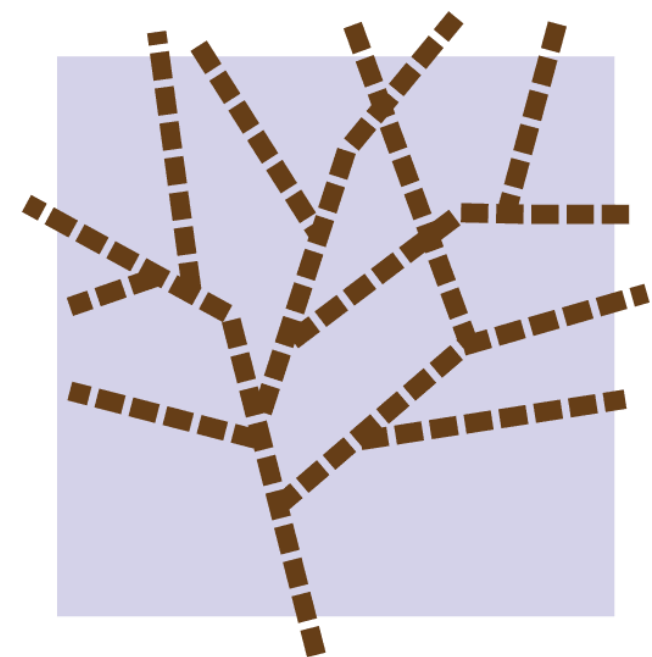
- In early 2019, ICANN replaced CZDS's older easy URLs with a new REST interface.
- Some other zones have moved from FTP to AXFR access
- The old shell/perl Zone File Repository scripts were unable to deal with these changes
- New code finally ready for production, and should be in place soon
- Looking to the community for help filling holes in several zones



DNS-OARC

Domain Name System Operations Analysis and Research Center

New Data Storage Architecture

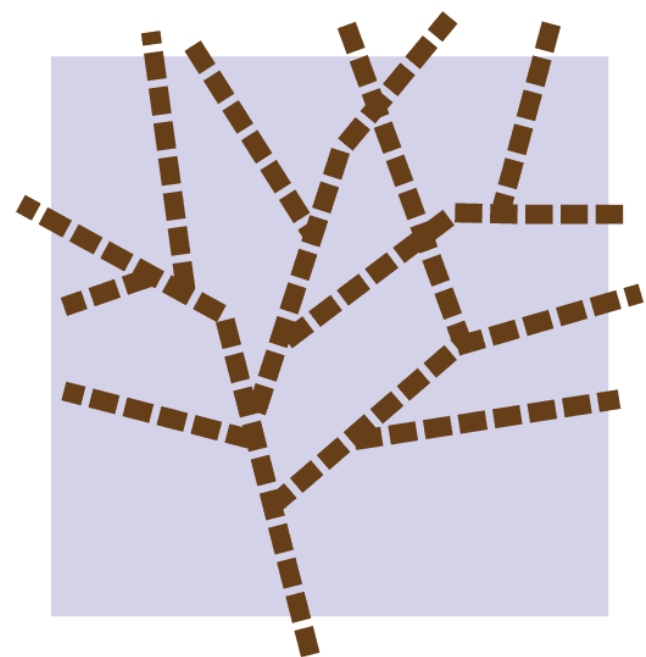


DNS-OARC

Domain Name System Operations Analysis and Research Center

The Original Proposal

- See the original proposal for full coverage of the issues, justification, and the original plan.
- In the Indico timetable for OARC 31 at: <https://indico.dns-oarc.net/event/32/contributions/736/attachments/702/1194/Filesystem-Clustering.pdf>

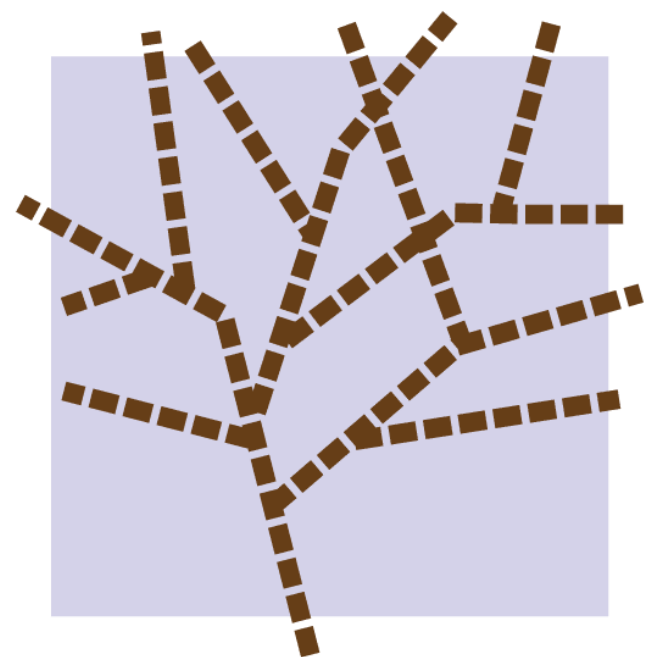


DNS-OARC

Domain Name System Operations Analysis and Research Center

Settled on Ceph

- Provides a networked filesystem, an object store, and block devices
- Excellent performance, redundancy, and high availability properties
- Horizontally scales well

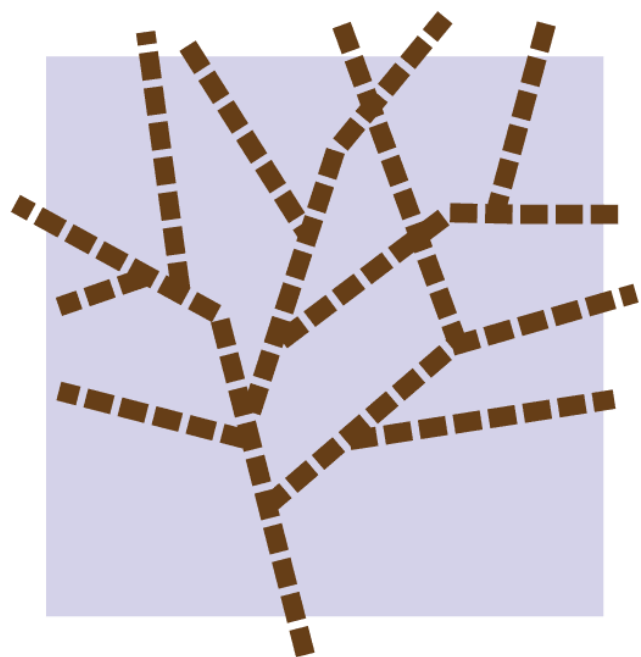


DNS-OARC

Domain Name System Operations Analysis and Research Center

The Build

- 9 storage servers, with 10x 12TB drives each
 - Just over 1PB of raw storage
 - Easy expansion by adding additional storage servers of any configuration
- 7 additional servers to handle the organizing functions of a clustered filesystem as well as internal data processing work (such as DITL post-processing)
- 1gig top-of-rack switches for existing VLANs
- 10gig switches for cluster network intercommunication

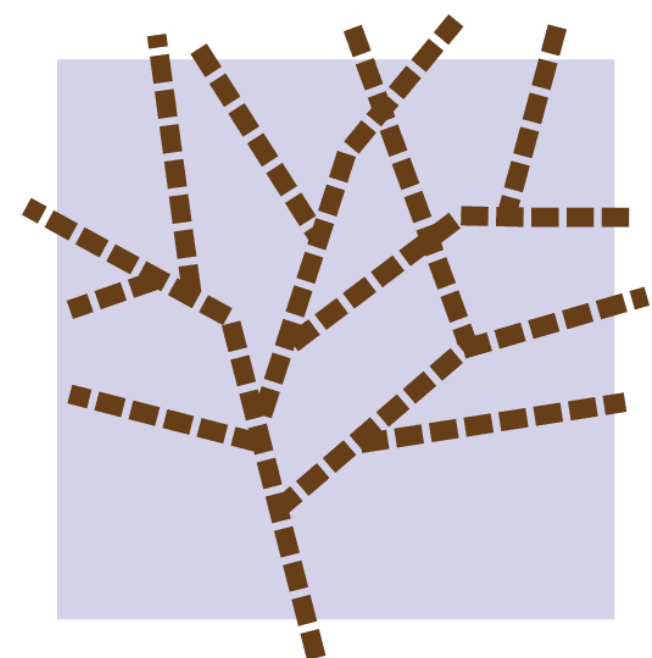


DNS-OARC

Domain Name System Operations Analysis and Research Center

Hardware on the Way

- Servers have all arrived
- 1G switches expected in a week or two
- 10G switches undergoing recertification, due mid-November

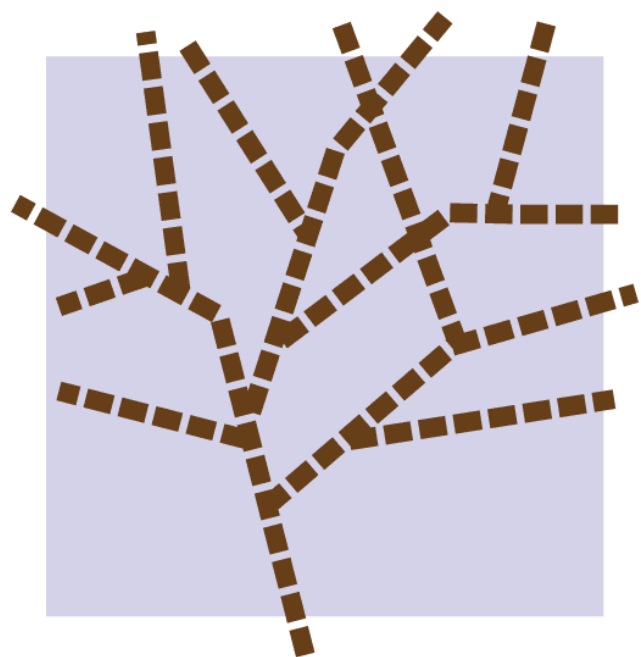


DNS-OARC

Domain Name System Operations Analysis and Research Center

Deployment is Imminent

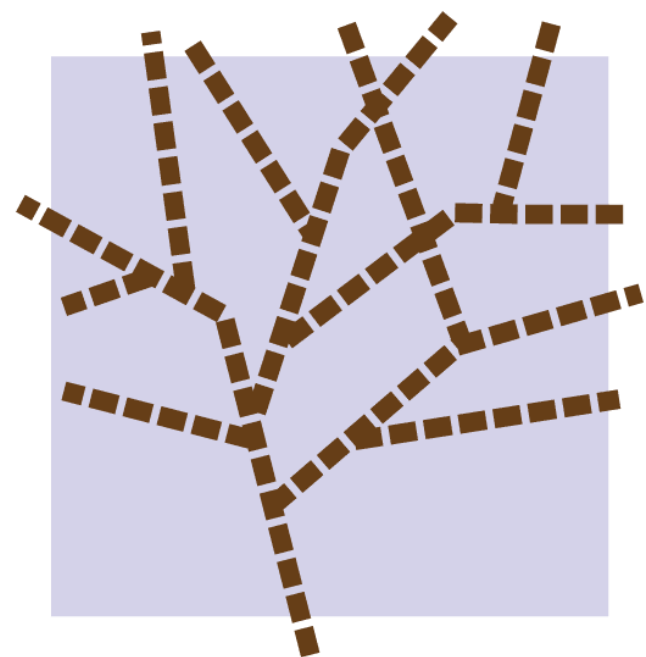
- Deployment expected to be done by mid-October, providing we can find hands
- Production ready, with monitoring in place, around the end of the year
- Migration of data from the old infrastructure to begin in the new year
- Will be a period where the old and new networked filesystems will be available on analysis servers simultaneously



DNS-OARC

Domain Name System Operations Analysis and Research Center

Questions!



DNS-OARC

Domain Name System Operations Analysis and Research Center