

DNS-OARC Systems Update

DNS-OARC Workshop

San Jose

September 30, 2017

System Status

- Services, systems and data archives all operating normally
- Fremont, California, USA has:
 - All services and main systems, including data
 - Three networks: Public with 1Gb/s upstream for transit and peering, private and private high-capacity 10Gb/s
- ‘DR’ site in Ottawa, Canada has:
 - an3 and fs6 (data backup) in case main systems are unavailable
 - Sb (system backup) and ns2 (secondary DNS)
- Site in Sweden has:
 - Ns3 (tldmon-se, backup MX and secondary DNS)
 - Dev, development platform

File Servers

- Current total dataset size sitting at 207TB used of 247TB total, not including 2 duplicates of 129TB each, therefore 0.5PB total capacity:
 - Fs1: 128TB used, 129TB capacity
 - Fs2: 29TB used, 45TB capacity
 - Fs3: 34TB used, 45TB capacity
 - Fs4: 60TB used, 90TB capacity
 - Fs5: 64TB used, 67TB capacity (134TB future capacity, tomorrow. Yes really)
 - Fs6: 128TB used, 129TB capacity (fs1 mirror)

Analysis & Capture Servers

- an1, an2, an3 and an4 are uniform in OS.
- Aim is to achieve a uniform support footprint but more importantly something much more special
 - Expired members will have their accounts deleted as well.
- Analysis activities by researchers of data still down from peak of 2 years ago.
- Capture servers used for DSC and DITL uploads are in the midst of being replaced with more modern sleek versions, from a gang of 4 to 2
 - 15A circuit for 4 servers vs 2A to 2 servers

New Data Arrivals

- We are up-to-date in terms of mirroring all known publicly published RSSAC-002 metrics, G has been a problem at times
- Long-term AS112 queries from one node continue, with contributions from ICANN and others in spurts
 - How many NAT'd networks are there?
- In past 12 months: ZSK, DATA 2017 (ongoing), DITL 2017, KSK rollover

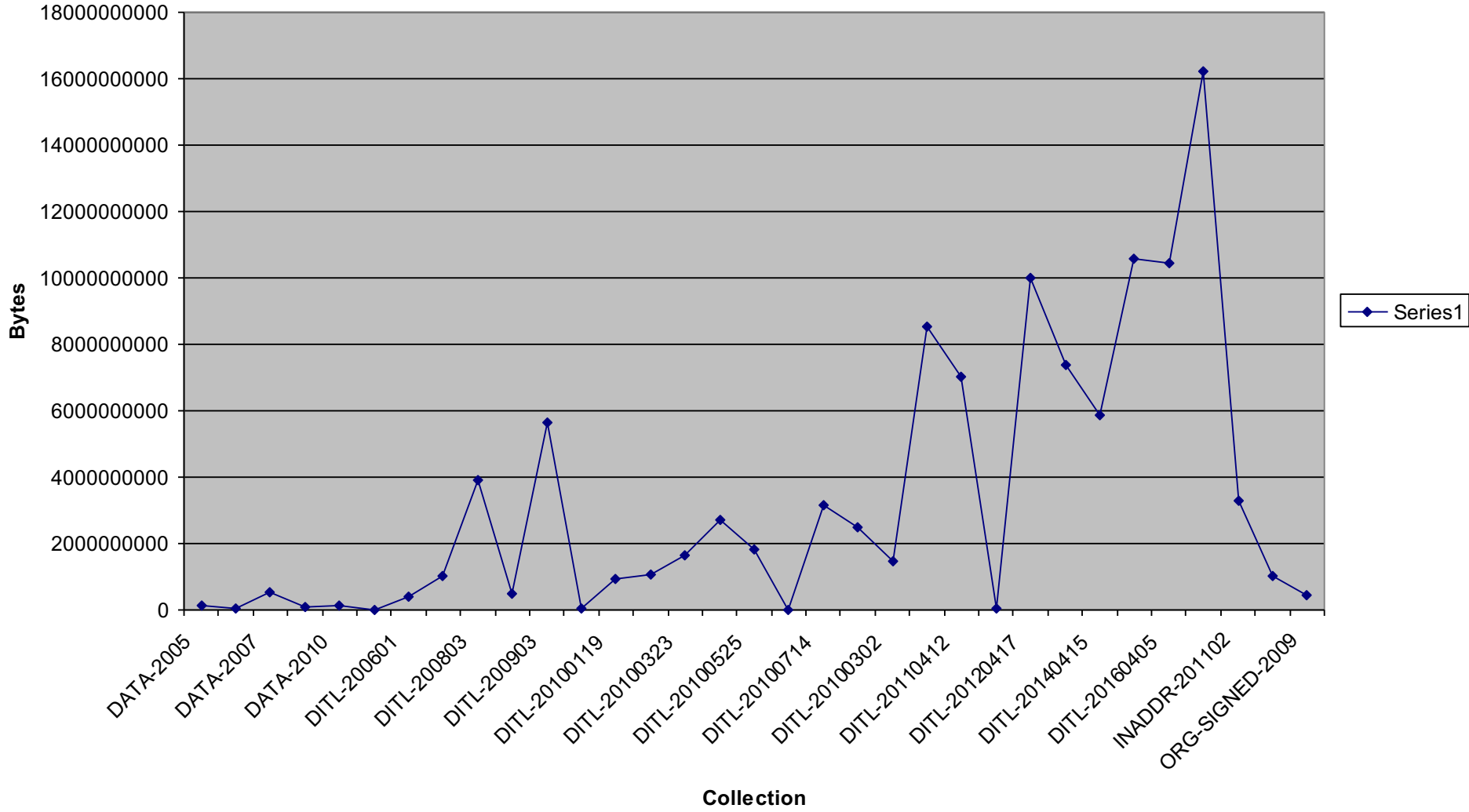
DITL 2017

- DITL 2017! Thank you contributors!
 - 9.8TB raw, 6.3TB clean, 16.1TB total
 - Record processing time since data was processed in pieces as soon as upload was completed
- First demanding use of fs4's CPUs for analysis of incoming data and it responded well
 - Fs2 was the traditional upload spool and processor
- Some data providers sent data in the wrong format (bad tree layouts, etc.) which created delays in making their data available
- Look for it in /mnt/oarc-pool4/DITL-20170411/ at an analysis server near you

DITL 2010

- 2010? Why yes!
- Through a sample audit of previous data, the 20100504 dataset was found not to have been completely processed
 - Raw: 1.3TB, Clean: 1.4TB, Total: 2.7TB
- This is now available on fs2 via:
 - /mnt/oarc-pool2/DITL-20100504/

DNS-OARC Data Collection Sizes



Other News for Data Archive

- We were expecting at least one other collection this year related to the KSK, and have capacity beyond that for DITL 2018
- Fs1 and fs6 mirrors are now full
 - Starting in 2017 data backups will be local again
 - May consider a complimentary backup scheme where each backup file server has a portion of datasets, bringing the copies from 2 to 1. Saves \$.
 - System backups unaffected

KSK 2017 Collection 1

- First collection uploads started on Sept. 18, 2017 (most started as scheduled on the 19th), 3-4 days collected
- Mostly completed
- Processing underway for KSK1
 - A, C, F, H, J and L processing done
 - B underway
 - D, E, K, M in queue
- Second collection someday

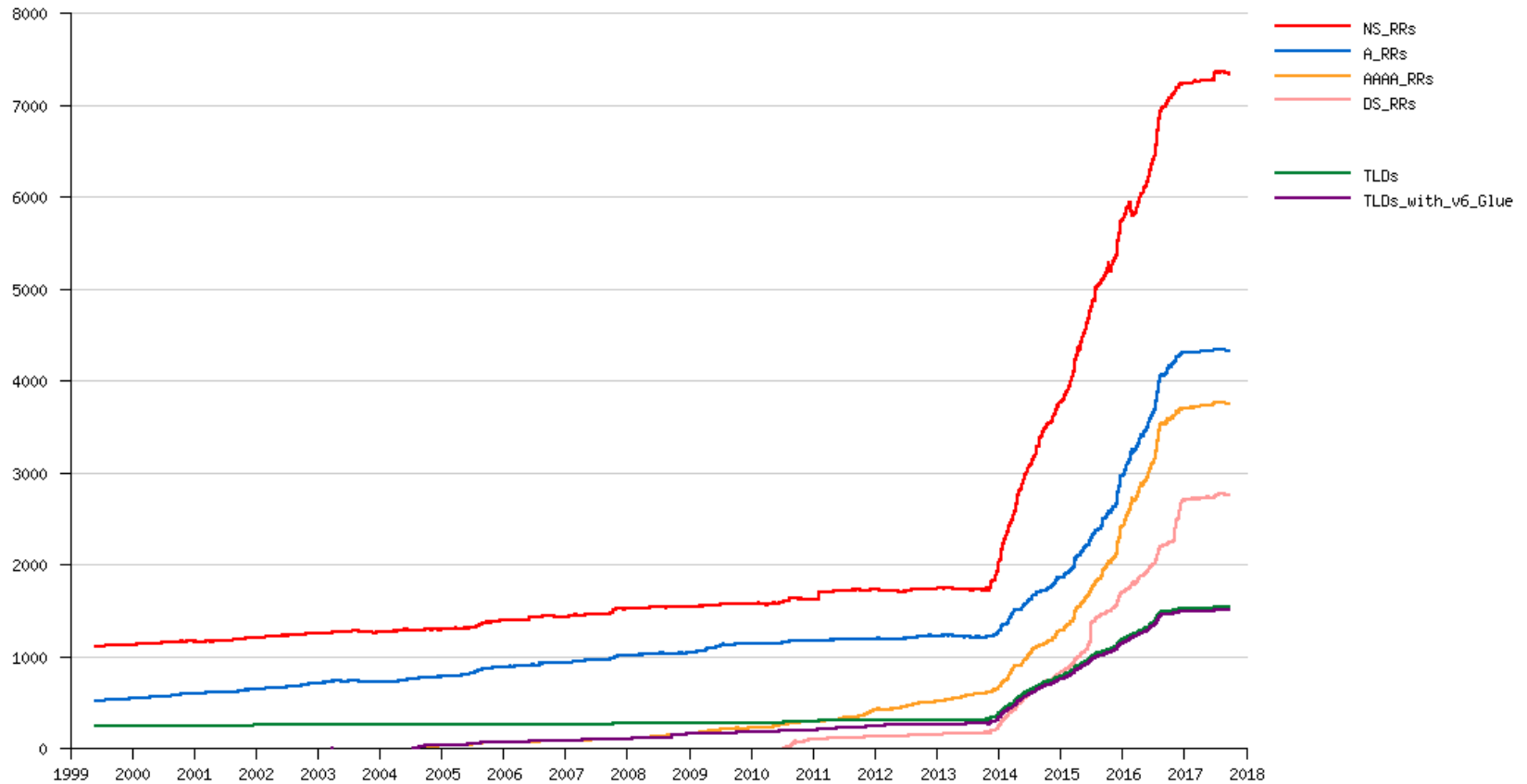
Other Notes

- ZFR still going strong
 - Some TLDs archived as well as the Root Zone Archive
 - /mnt/oarc-pool3/ZFR/ to find them
- TLDMon noted 1544 TLDs as of Sept. 22, 2017
 - First decline in TLDs since mid-2015
- Experimental TLDMon-ca node in Canada
 - Noted 1789 zones combined (.arpa, etc.)
 - Nagios is doing well to handle that load

Root Zone Trend

Trends in the DNS Root Zone

1999-06-01 to 2017-09-21



ODVR & TLS-DNS

- ODVR maintains a passing acquaintance with its DNSSEC test bed origins
 - It's really just an open resolver, with all that it entails
 - Looking to increase firewalling protection to limit further abuses
 - Trust anchors for KSK installed for both BIND and Unbound versions of ODVR
- Operates as a back-end to the TLS-DNS privacy service
- Logs and pcap traces preserve the data
- /mnt/oarc-pool3/odvr/ houses them

Future

- More capacity growth using 8TB disks or larger in fs1 and fs6 file servers, or increase the number of file servers to increase spindle resiliency, perhaps as early as 2018
- Eventual DR site consolidation
- Potentially offer to install and run AS112 nodes in certain locations.
- Indico major upgrade for late 2018
- Further consideration towards an analysis cluster
- Data catalogue descriptions (ie., what is it?) for each collection
- Portal refresh – some call it plastic surgery, others just “restoration.”
- Retirement of the DNS Lab

AS112 Update

- A few more nodes have come online, most notably DE-CIX is turning up nodes
- For the high-performance research and education networks, the global AS112 node in Canada is still seeing too much global traffic. Causes:
 - Dearth of root and AS112 nodes
 - Restrictive peering/routing policies
- Can discern route leaks
- There is an Internet Draft past WGLC and direct the IANA to delegate home.arpa.
 - <https://datatracker.ietf.org/doc/draft-ietf-homenet-dot/>
- Live DNS Map at
 - <http://pravda.ottix.net:5501/>

__END__