DNS-OARC
Domain Name System Operations Analysis and Research Center

Members report, June - September 2020

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Dear OARC Members,

2020 has been a tough year on everyone, and we're not done yet. It's heartening however to see how solidly the Internet's infrastructure has kept running smoothly and supported so many good things throughout it. The attitude I see in the Operations and DNS community is very much "business as usual" despite it all, and we've been working at OARC to help you uphold that.

We have successfully made the transition to online events with the short-form OARConline 32a and 32b taking place over the summer, and we are very soon holding the longer OARC33 and our AGM online.

With significant success in grant funding and solid ongoing support from our paying Members, we've been able to make good progress on some key projects.

The equipment for our new data store has been ordered and is finally being delivered as I write, After a year in the infrastructure wilderness with our crumbling old data store, I'm pleased to report that the backlog of DITL collection processing is finally being caught up.

Supporting collaborative remote working between organizations is a key part of OARC's mission, and another achievement over the past months is the deployment of our new chat platform, based on Mattermost. We've also done major analysis and coverage testing of our code base, released some important improvements to our DSC Datatool software, and received significant funding to develop *dnsperf,* including DoT/DoH enhancements.

1. <u>OARC33 Online Workshop and AGM</u>

   Our two-day [OARC33](#) workshop and 2020 AGM will take place next week as Zoom Webinars on the 28th and 29th of September. We have a full agenda of talks for OARC33, which you can find at:

   https://www.dns-oarc.net/oarc33

   Note that registration is required to attend both events, and each has its own separate registration. As a Member you should have received a discount code for OARC33.

   AGM registration is free and open to all Members and Supporters, please register here:

   https://oarc-agm2020.eventbrite.com/

   If you cannot attend the AGM online (or are uncertain if you can), please complete and send a [proxy form](#) to <admin@dns-oarc.net> by 23:59 UTC this Friday 25th September.

   OARC events, both online and physical, are supported by our sponsors and patrons, and we particularly acknowledge the contribution of **Verisign**, our 2020 Workshop Promoter Patron.

2. <u>2020 Board Elections</u>

   These are being conducted online separately from the AGM, and voting will open shortly after it finishes, for 48 hours. We have 5 candidates for 3 positions:

   - Joe Abley   **PIR**
   - Geoff Huston   **APNIC**
   - Jacques Latour   **CIRA**
   - David Lawrence   **Salesforce**
   - Jaromír Talíř   **CZ.NIC**

   and you can find their platforms at:

   https://www.dns-oarc.net/oarc/agm-2020/elections/

   We will be using <https://www.opavote.com/> to run the elections, this is the cloud service version of the open-source software we have used to count votes in previous years. Unique voting tokens will be sent by email to the designated voting representative for each Member by 23:59 UTC on Monday 28th September. The election result will be announced on the 2nd October.

3. <u>New Members</u>

   Please join us in welcoming the following new OARC participants in the last 3 months:

   - **Sinodun** re-joined as a Supporter
   - **peeriX/DNSLify** as a new Supporter
   - **Universite Grenoble** as a new Supporter
   - **Michael Daly** as a new Supporter

As ever we would appreciate your help in spreading the word about the benefits of OARC Membership. To help you do this, you may find our [Brochure](#) and [Briefing](#) documents useful. See also our referral discounts, where existing Members who refer a new party to OARC who becomes a paying Member can receive a 10% discount. Supporters who refer a new paying Member can receive an upgrade to Blue Membership.

Please contact Sue via [<admin@dns-oarc.net>](mailto:admin@dns-oarc.net) if you have any questions and/or would like to upgrade your membership or donate to support our mission and the DNS community.

4. Software Development

Major progress has been made over the summer with the *Soteria* code analysis and coverage project, funded by **The Swedish Internet Foundation** with the aim of improving the quality and testing of DNS-OARC's software and tools. See Jerry's separate report for full details and break down, but this project has now achieved an overall improvement of code coverage from 30% to 62%

Thanks to funded development by **EURid**, the *dsc-datatool* has been rewritten from Perl to Python in order to be easier to maintain.

The platforms we compile and test on have had CentOS 8 (x86_64) and a 32bit Debian 10 (i686) added.

Our Members self-service Portal has had a recent minor update which gives more flexibility for how your administrative and management contacts are set up, and will let you search for other Member contacts more easily.

See Jerry's report for the latest on our Software Engineering activities to find out more, including many updates to existing tools, including *DSC DNSTAP*, *dnsperf*, *dnscap*, *dnsjit*, and *PacketQ*. A list of all our software is here:

https://www.dns-oarc.net/oarc/software

Finally, don't forget that OARC can develop new, or enhance features of existing, tools via a custom for-hire development contract. OARC Members will receive priority for such work, and at a discounted rate depending on their membership tier.

5. Systems Engineering

5.1 DITL and old Data-store

With some help from a local contractor, we were able to do stabilization work on the old data store, but really only to life extend it to where we can migrate the data off to the new platform. Some copies of some datasets remain offline – this to safeguard them for now, but we cannot rule out permanent loss of some datasets when we attempt to bring these back online. We ask for your continued patience as we catch up post-processing backlog and commission the new data store.

In the meantime post processing of the 2018 KSK DITL dataset has completed, and is now available. All continuing to be well, we estimate processing completion and availability of the 2019 and 2020 DITL collections within 6 weeks.

We've had quite a lot of interest in recent DITL datasets from various researchers, and although some have requested the post-processing of particular year's datasets to be prioritized, in the interests of fairness we are processing the DITL backlog in strict chronological order so as not to unduly prefer any one researcher over another.

5.2 New Data-store

The good news is that our new data store has been ordered, with the first hardware currently being shipped and delivered. Obtaining commercial terms that worked for both OARC and our vendor turned out to be more protracted than we expected, but with Member help we found a Dell reseller willing to do business with us. Due to pandemic travel restrictions, we're going to have to rely on contracted local help to do the installation at our Fremont location, but we are confident the new platform should up and running by the end of 2020.

5.3 Chat Platform

As previously mentioned, it became clear the Jabber chat platform OARC has been providing for many years (mixed with more recent ad-hoc, unsupported use of Slack) was meeting none of our Member or community needs, nor was sustainable.

We took the step to deploy an externally managed [Mattermost](#) chat platform for Member, Workshop, and wider community use, and this successfully went live during July. Selection of a particular chat platform from the bewildering selection available was never going to satisfy everyone, but Mattermost has a number of key advantages:

- open-source, cross-platform
- modern UI, with both browser, standalone and mobile app client support
- cost-effective managed service available, option to migrate or self-host
- compatible with OARC Participation Agreement confidentiality terms
- public/private access controls for Member/Workshop/Community use
- used by other organizations in our space

OARC Mattermost is provided by **Mythic Beasts**, a UK-based cloud provider. As part of the service agreement, Mythic signed up as OARC Supporters, which binds them and the service to the same collective confidentiality terms as OARC Members are bound by.

We've now had major interest in our Mattermost offering, with 220 users signed up. Public open access is available for workshop participation and researcher/guest collaboration, and several groups ot OARC Members are already using private channels for co-ordinating projects together, feel free to do the same. If you didn't already sign up for Mattermost, you can do so at:

https://chat.dns-oarc.net/signup_email

Please make sure you sign up using the same e-mail address as you have in the OARC Member Portal, and we'll be able to add you the Member-only team as well as the public Community team. We are in the process of phasing out OARC use of Jabber and Slack, which should be completed by end September.

5.4 ODVR

As managing an open resolver to protect against misuse and abuse is a significant effort, and since there are now many public open resolver services which support DNSSEC, we will shortly be shutting down OARC's Open DNSSEC Validating Resolver ([ODVR](#)). Please find an alternative if you make use of this.

Please see Matt's separate Systems Engineering Update for full details on the above and other activities.

6. Financial, Legal

OARC finances are healthy, the influx of various grants and donations, combined with solid existing Member support and reduced travel/event expenses have helped us keep both P&L and cash-positive for most of the year, even with the major data store investment. I've made a few revisions to our 2020 budget, and the strategy is to allow 2020 surpluses to accumulate to OARC's reserves. This should stand us in good stead through any period of post-pandemic economic downturn, and we estimate OARC could continue to operate for as much as a year even in the absence of any revenue.

Due to an extension of the IRS filing deadlines, OARC's audit started later this year, but we have just completed this, once again with a clean bill of health, and the 2019 Audited Financial statements are now available for Member review and approval at the AGM. I apologize for there being less time to review these than usual.

During my presentation to Members last year, I mentioned the vulnerability of small organizations like OARC to unexpected externalities, and it's pretty clear the pandemic of 2020 is the mother of all externalities. While we've managed to adapt, build on our community and remote team strengths, stay safe and healthy, move our events successfully online and forward with various opportunities, this has not stopped other "incoming" meantime, not least wildfires and lighting strikes taking team members offline ☹ at various points.

In particular, we were blindsided in July by onerous legal demands to provide third party evidence in a court case which is nothing to do with OARC. We have therefore had to spend precious time and legal costs acting to protect OARC and its Members' interests and confidentiality from these undue demands. At this point we're confident that an agreement acceptable to both parties can be arrived at, but it has frankly been a distraction upon others we could do without. Note that for legal reasons we are not at this point able to disclose who the parties to the case are, though we'd be interested in hearing from any OARC Members also caught up in this.

Finally, the Privacy Committee, which is tasked with modernizing OARC's Participation Agreement to comply with legislation such as GDPR & CCPA and to give us more flexibility in hosting and treating our data, has co-opted a number of additional members. It now comprises George Michaelson, Jaromír Talíř & Benno Overeinder (OARC Board); David Lawrence & Shivan Kaul Sahib (**Salesforce**) and Sara Dickinson (**Sinodun**). The target is to have a draft new set of agreements and polices ready to propose to Members at an EGM we will have with our first physical meeting of 2021.

7. Donations, Grants and Funding Activity

Although our financial position is strong this year, there has been very little in the way of new paying Member sign-ups or events revenue, and we took a strategic decision early in 2020 to increase the amount of funding we receive from other sources. This has been very successful, and I'm pleased to report the following donations, grants and project funding received this year:

- Anonymous Platinum donor $25k
- Grant: **Verisign** $25k
- DoT/DoH for *dnsperf*: **Mozilla OSS** $30k
- DoT/DoH for *dnsperf*: **Comcast** $20k
- *dsc-datatool*: **EurID** $7.5k
- Data Store: **Comcast** $10k
- Data Store: **IIS** $5k
- Data Store: **Gransy**, **Quad9**, **SOX**

We're particularly pleased with the grants from both **MOSS** and **Comcast** for *dnsperf* development, a great example of industry co-operation which will extend our existing tool to help measure performance of and get some answers to the merits of the various approaches to Encrypted DNS. This work will be done in 3 phases – firstly, some necessary re-factoring to *dnsperf* to remove dependencies on BIND internal code which is ceasing to be accessible; then addition of general session management capabilities for connection-oriented DNS testing; and finally adding DNS-over-HTTPS functionality.

We set a target of raising some $20k of the roughly $100k costs of the new Data Store infrastructure from grants and donations, and thanks to the above contributions, we have achieved some $18k of this. There is one additional grant application pending approval, to improve RPKI UI support in *CheckMyDNS.*

One grant application which was unfortunately unsuccessful was a joint proposal with others to the NSF to support the development of *DNSVIZ* as part of a wider research project. While we have plans for further systems work to improve the delivery of the existing *DNSVIZ* service, other plans for developing new features and capabilities for *DNSVIZ* have had to go on hold for now. We are exploring other possible funding sources.

8. <u>Future workshops</u>

Our short-format workshops OARConline 32a and 32b were well-attended and received, and we took the chance to survey attendees to guide us on the best approach for future events so long as they remain online, particularly in terms of duration and frequency. This is also a balancing act between our audience, and the demands on staff, volunteers & speakers. While there was a spread of opinion, it seems the best approach is to have 3-4 online workshops per year at roughly 3-month intervals, with potentially one or two shorter half-day events in addition to two longer 1-2 day events. We would continue this through 2021 until we are able to return to having 3 fully physical events per year again, with likely a migration period of hybrid events allowing for full participation for both in-person and remote attendees.

Our next workshop will be OARC34, which will be a longer 1.5 day event in early February 2021. Although we still have an option for physical space co-located in Atlanta with NANOG81, it seems very likely OARC34 will be fully online.

Even as our workshops remain online, opportunities are open for sponsorship and patronage of all OARC's events, please see:

- https://www.dns-oarc.net/workshop/patronage-sponsorship

and contact Denesh via <sponsor@dns-oarc.net> for further information.

Once again, I would like to thank you our Members, and all our Donors and all our volunteers and other supporters, for continuing to stand by OARC through this challenging year. We look forward to seeing you again in better times ahead.

Keith Mitchell
OARC President

September 2020