



DNS-OARC

PRINCIPAL SPONSOR

OARC27 Workshop

San Jose, California, USA

29-30 September 2017

PREMIUM SPONSOR



ICANN



BENEFACTOR SPONSORS



COMCAST

ThousandEyes 

CONTRIBUTOR SPONSOR

Infoblox 
CONTROL YOUR NETWORK

DNS-OARC 2017 AGM President's Report

**Keith Mitchell
OARC27 AGM
September 2017**

OARC's Mission Statement

The Domain Name System Operations Analysis and Research Center (DNS-OARC) is a non-profit, membership organization that seeks to improve the security, stability, and understanding of the Internet's DNS infrastructure.

DNS-OARC's mission is to:

- promote and conduct research with operational relevance through data collection and analysis*
- offer useful services and tools*
- build relationships among its community of members*
- facilitate an environment where information can be shared responsibly*
- enable knowledge transfer by organizing open workshops*
- increase public awareness of the DNS's significance*



DNS-OARC

Domain Name System Operations Analysis and Research Center

2017 Achievements

- Finances YTD tracking budget break-even target
- Member surveys follow-up from Retreat in Feb 2017
- Special DITL for Root ZSK size increase underway
- Verisign funding of DNSCAP RSSM extensions
- Follow-on Comcast Development Grant funding for further work on *drool* DNS Replay Tool
- Record >10TB DITL 2017 data gathering completed
- Took over ownership of DNSCAP and PacketQ tools
- Further physical office re-location Ohio to Indiana
- Collating RSSAC-002 data from *all* root operators



DNS-OARC

Domain Name System Operations Analysis and Research Center



Welcome New OARC Members!

(since May 2017)

Participant

Level

US Army (H-Root)

Supporter

Ninja-IX

Supporter

ISOC-IL

Blue

i7-RU

Blue

Gransy

Blue

NIC.at

Bronze

Shaw Communications

Bronze

A10 Networks

Silver

OARC Members and Supporters Growth

120

Members Supporters

90

60

30

0

2010

2011

2012

2013

2014

2015

2016

2017

21

24

23

32

20

22

23

27

37

39

43

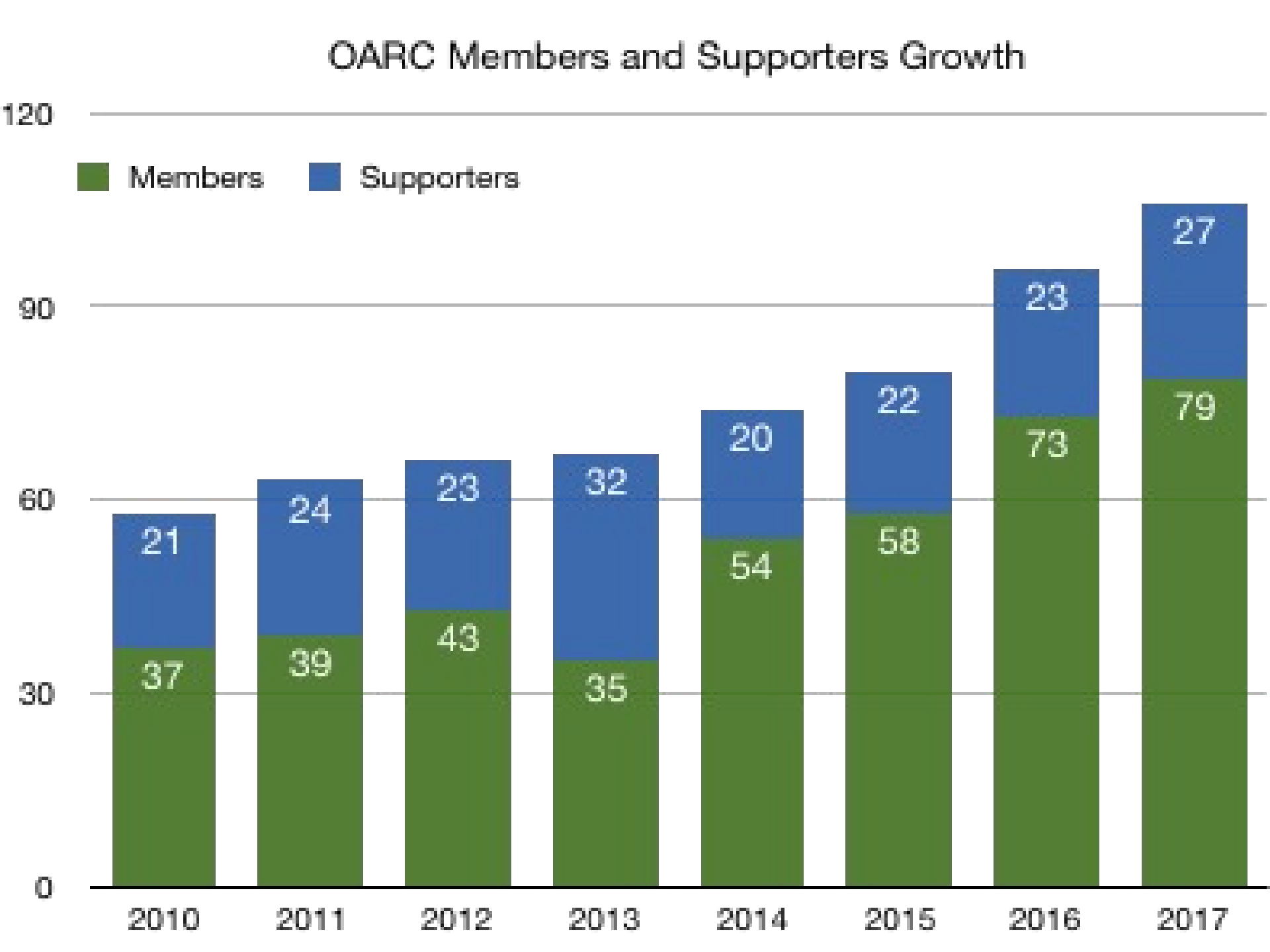
35

54

58

73

79



OARC Governance

- Independent legal entity
- Diverse member base
- Financially self-supporting
 - ~\$6-700k annual revenue ~= expenses
- Self-governing, neutral
- Elected Board reflecting member interests
- Contracted Executive Staff
- Volunteer workshop Programme Committee
- 501(c)3 non-profit public benefit corporation



DNS-OARC

Domain Name System Operations Analysis and Research Center

2016-7 OARC Board

- Jacques Latour, *CIRA*, Treasurer
- Peter Hagopian, *Comcast*, Director
 - previously Paul Ebersman
- Liam Hynes, *Oracle*, Director
- George Michaelson, *APNIC*, Director
- Jaromir Talir, *CZ.NIC*, Director
 - previously Ondrej Sury
- Duane Wessels, *Verisign*, Chairman



DNS-OARC

Domain Name System Operations Analysis and Research Center

2017 OARC Programme Committee

- Piet Barber, *Verisign*
- Ray Bellis, *ISC* (Chair)
- Robert Edmonds, *Fastly*
- Mauricio Vergara Ereche, *ICANN*
- Geoff Huston, *APNIC*
- Shane Kerr, *Oracle*
- Marten Wullink, *SIDN*
- Jacques Latour (OARC Board Liaison)



DNS-OARC

Domain Name System Operations Analysis and Research Center

2018 OARC Programme Committee

- A number of our existing PC members have reached their 3-year term limit
 - Thank You !
- New Board will select 2018 PC during Q4 2017
- Please let us know if you are interested in serving !



DNS-OARC

Domain Name System Operations Analysis and Research Center

DNS-OARC Staff Resources

- President, Secretary (*Keith Mitchell*, Indiana) 0.75 FTE
- Systems Engineer (*William Sotomayor*, Ontario) 1.0 FTE
- Software Engineer (*Jerry Lundström*, Stockholm) 1.0 FTE
- Membership Coordinator (*Sue Graves*, Oregon) 0.5 FTE
- Events Coordinator (*Denesh Bhabuta*, London) 0.5 FTE
- Book-Keeper (*Pam Stone*, California) 0.1 FTE



DNS-OARC

Domain Name System Operations Analysis and Research Center

New OARC Office !

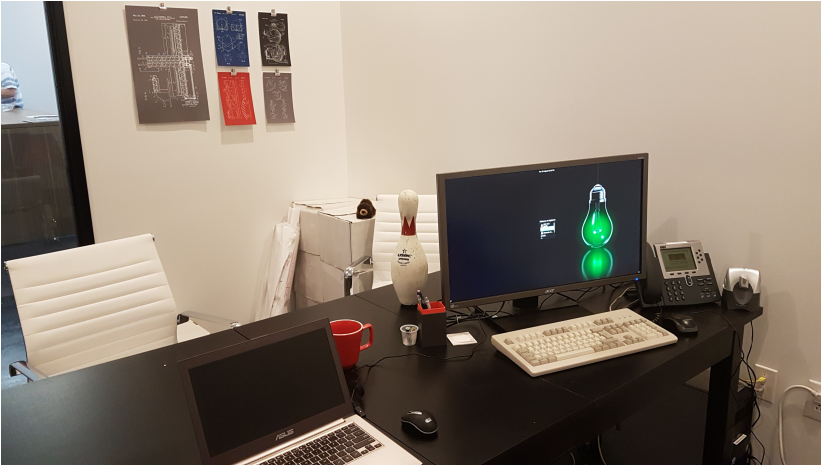
- OARC needs a physical address of record for mail, banks, tax etc
- Also place to store our paper archives
- This has been somewhat itinerant since we lost our California footing
- Moved to Ohio with Keith..
except I shortly afterwards moved to Indianapolis, IN
- Moving has been a major distraction for me over the summer, but we are in a nice new home with good local collaboration opportunities (e.g. iu.edu)



DNS-OARC

Domain Name System Operations Analysis and Research Center

New OARC Office !



- *c/o PIN Bureau*
Suite 101 #5
325 S College Ave
Indianapolis
IN 46203, USA



- Note payments still go to Belmont, CA address



DNS-OARC

Domain Name System Operations Analysis and Research Center

OARC Membership Categories

Category	Contacts	Annual
Supporter	1	\$0
Blue	2	\$1k
Bronze	3	\$6k
Silver	5	\$9½k
Gold	8	\$14k
Platinum	10	\$25k
Diamond	18	\$50k

- **Supporter** requires annual in-kind contribution
 - e.g. data, presentations, services
- **Blue** category for ^{small} organizations/individuals only



DNS-OARC

Domain Name System Operations Analysis and Research Center

OARC Strategy 2017→

- OARC's current strategy appears successful
 - needs enhanced rather than overhauled
- No longer run OARC at deficit to achieve growth
- Adjust Membership and Workshop fees to changing market conditions
- Consult and Engage Members
- Develop more structured methodology for workshop selection
- Leverage Board/Officer resources including via working groups
- Data Privacy needs further work
- Role in incident/operational security is as facilitator rather than actor
- Prioritize opportunities by (1) Revenue (2) Reputation (3) Relevance



DNS-OARC

Domain Name System Operations Analysis and Research Center

Why Become an OARC Member ?

- Access to and participation in the world's premier community of DNS technical experts
- Influence development of open tools and services to support your infrastructure operations
- Ability to share and analyze a unique dataset perspective into global DNS operations
- Use of community co-ordination resources to respond to incidents and threats
- Support a trusted neutral party free of vested interests in the DNS space



DNS-OARC

Domain Name System Operations Analysis and Research Center

OARC's Value Proposition

Member testimonials from Survey (Thank You !):

"OARC is the only organization of its kind, dedicated to DNS operations and research. Given my company's deep involvement with DNS and my personal interest, I simply have to be a member and attend the workshops, which have consistently high-quality content."

"OARC is a unique venue that brings together DNS vendors, operators of DNS services and researchers - the workshops provide a unique and valuable insight into the current state of the art of the DNS."

"DNS OARC provides the invaluable mingling of DNS operators, developers, researchers, to communicate, collaborate, and share data via workshops, mail lists, and shared computing resources. Without this association I would not be aware of the current problems facing the DNS and Internet community nor be a part of their solutions."

"Of all the work-related conferences I attend, @dnsoarc is reliably the one with the fewest uninteresting bits. Approaching zero."



DNS-OARC

Domain Name System Operations Analysis and Research Center

Data Privacy Survey

- This is not a easy topic, nor was it easy to build Member survey questions for it
- Thank you to everyone that responded
- As we suspected, privacy concerns are a major reason many Members do not upload data to DITL and/or DSC



DNS-OARC

Domain Name System Operations Analysis and Research Center

Data Privacy Solutions

- Keeping submitted data on OARC servers is important for 64% of respondents
 - rises to 76% for non-anonymized data
 - but only 16% for anonymized data
- Strong preference that data is anonymized prior to or as part of upload process
- Non-anonymized data seen as more valuable, but still interest in anonymized data, especially if it can be analyzed using big data techniques



DNS-OARC

Domain Name System Operations Analysis and Research Center

Data Privacy Solutions

- Various approaches potentially helpful to roughly half of respondents:
 - keep data locally, share with other Members via controlled remote access
 - restricting which other Members can access the data
 - less concerns about cloud-based sharing for just telemetry (e.g. DSC) data
- But like country/jurisdiction considerations, different solutions preferred by different subsets of respondents
- Best-efforts data sharing preferred to paid-for



DNS-OARC

Domain Name System Operations Analysis and Research Center

Things we could do

- Build analysis cluster (e.g. Hadoop) from existing servers
 - would ~4 64-core analysis servers be sufficient ?
 - or do we need to significantly up available resources ?
- in-addr based DITL collection
 - needs participation/support from RIRs
 - would OARC Members value them making this effort ?
 - special effort or part of regular DITL ?
- Round-table working operations discussions
- Poster sessions at workshops



DNS-OARC

Domain Name System Operations Analysis and Research Center

OARC Workshops

- 2 workshops per year
- 1½-2 days long
- Co-location with RIPE/NANOG/ICANN/IETF
 - getting harder and more expensive
 - taking longer to confirm dates
 - saves attendee time and costs, but demands more OARC resources to plan and host
 - have developed methodology for future site selection
 - thank you for site survey input to get better handle on co-location benefits vs challenges
- <https://www.dns-oarc.net/files/meeting-sponsor.pdf>

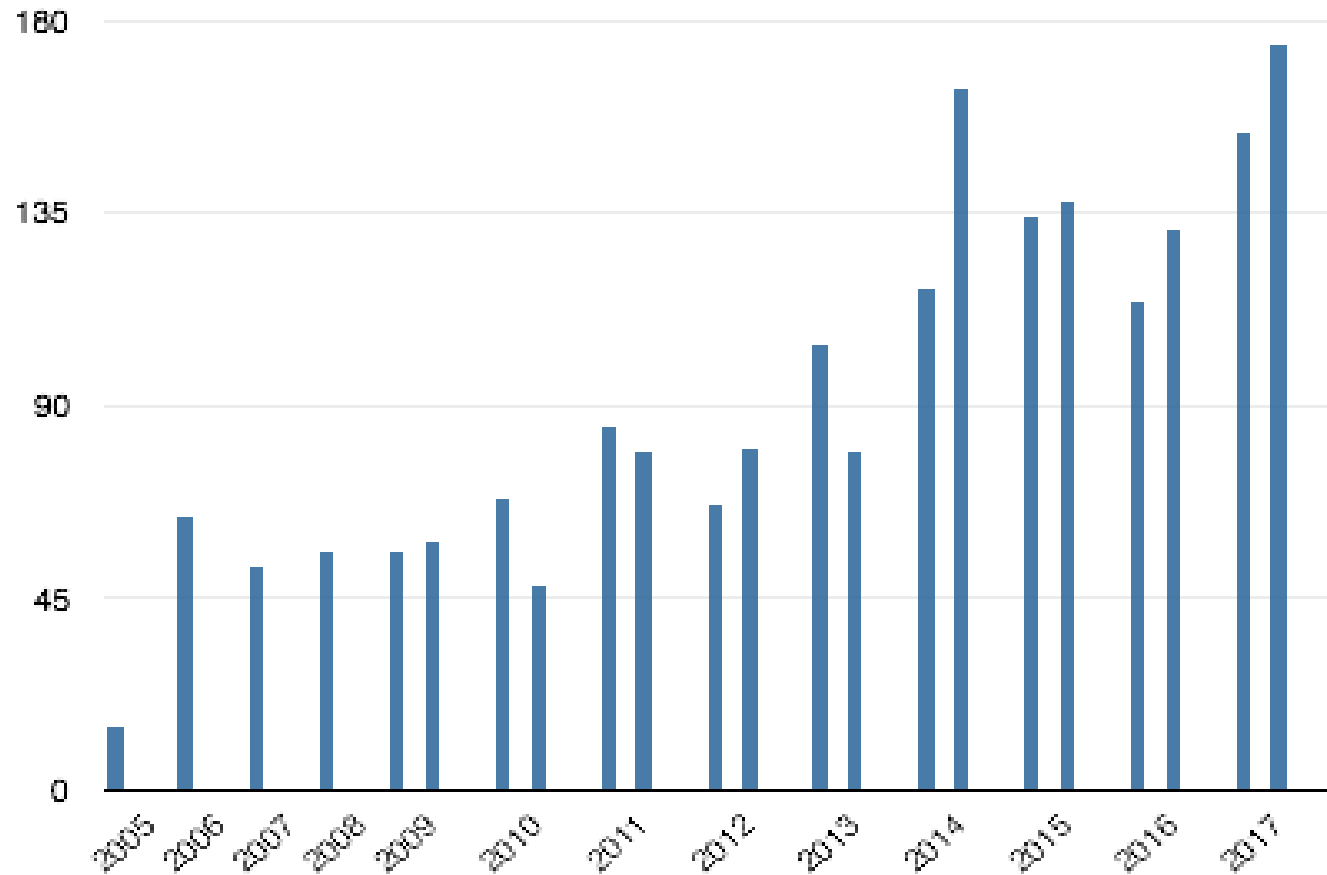


DNS-OARC

Domain Name System Operations Analysis and Research Center

Workshop Attendance

DNS-OARC Per Meeting Attendee Growth



DNS-OARC

Domain Name System Operations Analysis and Research Center

Future Workshops

- OARC28
 - Q2 2018 *TBC*
 - *LAC or AP regions ?*
 - ICANN61 San Juan
 - ICANN62 Panama
 - IETF101/IDS London
- OARC29
 - Oct 13/14th
 - Amsterdam
 - Co-located with RIPE76 and CENTR Tech



DNS-OARC

Domain Name System Operations Analysis and Research Center

2018 Plans

- Further funded software tool development
- Pilot new DNS stats data-sharing platforms
- Implement Data Privacy survey findings
- Upgrade analysis capacity/cluster
- Consolidate/re-locate Canadian site(s)
- Increase contractor hours where possible
- Prepare for growth to \$1M revenue by 2019



DNS-OARC

Domain Name System Operations Analysis and Research Center

Questions ?



DNS-OARC

Domain Name System Operations Analysis and Research Center



DNS-OARC

Domain Name System Operations Analysis and Research Center

Thank You !!

To our outgoing Board member

Paul Ebersman

for his commitment and service



DNS-OARC

Domain Name System Operations Analysis and Research Center