OARC Status and Evolution

Keith Mitchell
OARC Programme Manager
Internet Systems Consortium
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What is ISC?

- Internet Systems Consortium, Inc.
  - Headquartered in Redwood City, California
  - 501(c)(3) Nonprofit Corporation

- Mission:
  - To develop and maintain production quality Open Source software, such as BIND and DHCP
  - Enhance the stability of the global DNS through reliable F-root nameserver operations and ongoing operation of OARC
  - Further protocol development efforts, particularly in the areas of DNS evolution and facilitating the transition to IPv6.
What is OARC?

- Operations, Analysis and Research Center for the Internet
- Co-ordination centre to protect Global DNS infrastructure
- Trusted, neutral environment for operators and researchers to:
  - gather and share data
  - co-ordinate response to attacks
- Run and managed by ISC
OARC Mission

- Provide trusted channels for Internet incident reporting and handling
- Facilitate confidential sharing of DNS operations data
- Interface with research community for analysis and publication
- Outreach to vendors, end-users and law enforcement
OARC Motivation

• DNS infrastructure makes everything work as expected
• DNS outage of any network service provider or large content provider affects everyone using the Internet
• Growing resource demand for Internet:
  ▪ abuse prevention
  ▪ infrastructure protection
  ▪ operational co-ordination
OARC Motivation

• Increasing incidence of attacks against the DNS, e.g.
  ▪ Microsoft outage in 2001
  ▪ DDoS attack on Root Servers 2002
  ▪ Open recursive resolvers Q1 2006

• DNS increasingly implicated in and compromised by Botnet activity
OARC History

• Founded 2004
• Agreement between ISC and CAIDA, funding from NSF
• Various contributors, volunteers, managers since then
  ▪ more churn in these than has been ideal...
• Successful research and member workshop 2005
• DNS operations workshop summer 2006
OARC Members

- Current total 37, includes:
  - 5 root server operators
  - 2 gTLD operators
  - 11 ccTLD operators
  - 10 DNS implementors
  - researchers at 4+ institutions
  - RIRs, DNS registrars, operators

- Seeking greater government/law-enforcement support/participation
OARC Core Functions

• Incident Reporting
  ▪ Secure member-only “bulletin board”
  ▪ Filtered Channel from ISC and between members
  ▪ Encryption-based Jabber infrastructure
  ▪ Member-determined bi- and multi-lateral controls on access to all of above
  ▪ Drupal-based content repository and forums

• Operational Co-ordination
  ▪ Operate various trusted mailing lists, including open <dns-operations@lists.oarci.net>
  ▪ Characterize ‘normal’ traffic and identify threats early
OARC Core Functions

• Data Gathering
  ▪ From c, e, f-root and other live servers using DSC toolset
  ▪ Have participated with CAIDA in a number of “48-hour snapshots” of detailed root NS data

• Analysis
  ▪ Tools and server resources to allow members to conduct analysis
  ▪ Policies and practices to ensure confidentiality and anonymity of data preserved
OARC Other Activities

• “Project Orphanage” - there are many worthwhile projects out there which can make the Internet a safer place, but which are often in need of a home
• OARC can and does fill this role
• Such activities include:
  ▪ Malware repository
  ▪ AS112 operator website and mailing list
• Many more opportunities…
What's Next for OARC?

• Keith fully on-board from 1\textsuperscript{st} October
• Consolidate existing website and server resources
• Documentation of policies, procedures, FAQs
• Outreach to existing members:
  ▪ solicit inputs on OARC's future direction
  ▪ engage governance processes
• Raise OARC profile and grow member base
What's Next for OARC?

- **Member meeting**
  - Seattle 16/17\textsuperscript{th} Nov
  - Open to members, researchers, presenters
  - Presentation submissions still very welcome
OARC Future Plans

- Increase data gathering activities
  - e.g. “Passive DNS”
- Internet Operations Research Bibliography and Reviews site
- Increased role in botnet & phishing prevention
- Clearing-house for non-research DNS data too?
- Expand role to more than just DNS operations
OARC Contact Info

• Web: https://oarc.isc.org
  http://public.oarci.net
• E-mail: keith_mitchell@isc.org
• Jabber: keith@jabber.oarc.isc.org
• Phone: +1 650 423 1348
• My location: Cleveland, Ohio, USA