

OARC Status and Evolution

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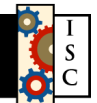
Internet Systems Consortium

UKNOF5, 26th Oct 2006



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 1st 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 16/17th Nov
- Open to members, researchers, presenters
- Presentation submissions still very welcome
- <http://public.oarci.net/oarc/workshop-2006/>

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

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<http://www.uknof.org.uk/uknof5/Mitchell-OARC.pdf>

