Timothy G. April
https://tapril.net

Email : tim [at] tapril [dot] net

SUMMARY

A technologist, Internet architect, and incident responder focused on improving the stability, resilience and security of systems and the Internet in general. Always looking for new and/or interesting complex Internet connected systems to learn, analyze and improve.

KEY ACCOMPLISHMENTS

- Trusted expert incident responder including crisis management, complex technical coordination, and communications with the executives, customers, and the general public
- Extensive experience debugging large and complex distributed systems
- Advised senior management and customers on current and potential threats at all layers of the OSI model
- Consulted with product, design, and engineering teams build safer systems
- Collaborated with internal and external researchers to understand, document, mitigate and defend against malware
- Co-founding a non-profit aiming to make DNS infrastructure changes more visible
- Developed, operated and maintained an ICANN accredited domain name registrar

EXPERIENCE

- **Akamai Technologies, Inc.**   Cambridge, MA
  Chief Architect, Information Security   *Aug 2011 - Present*
  - **Domain Name Registrar**: Designed, developed and deployed the processes and software to operate Akamai's ICANN accredited domain name registrar. Providing ongoing policy, process and technical support for the operators of the registrar in addition to process and software updates.
  - **Security Architecture and Consulting**: Work along with system architects, developers and operators to review system designs focusing on security and operability. Common areas of advice include Routing, Switching, DNS, PKI, DDoS Attacks, Botnets and Malware.
  - **Security Research**: Investigate vulnerabilities in internal and external software and systems. Collaborate with researchers inside and outside Akamai on new and existing incidents. Contribute to internal and external publications discussing attacks and vulnerabilities observed on the Internet.
  - **Incident Response**: Participates in the on-call rotation called upon during incidents helping to quickly assess and remediate events. Assists as a subject matter expert for security incidents as well as a generalist for both Akamai and external systems.
  - **Research and Development**: Contributes to the design, development and operation of numerous research projects both in and outside the InfoSec department. Deploy, modify and maintain multiple internal collaboration tools. Participant in all stages of the product development lifecycle.
  - **Trust & Safety**: Responsible for coordinating inbound and outbound vulnerability reporting. Coordinated with public and private partners on DDoS and other security matters, including law enforcement from multiple jurisdictions.
  - **Special Projects**: Assists ad-hoc projects across the company as needed. Design and prototype solutions to complex problems.

- **Internet Fire Brigade Society**
  Co-Founder & Director   *Sep 2021 - Present*
  - **Purpose**: Internet Fire Brigade Society was founded to be the home of the DNS Transparency Project, working to make changes to the DNS visible as close to the time of change as possible. The Internet Fire Brigade Society was founded to be the non-profit home of the DNS Transparency Project, and also home to other similar projects when reasonable.

- **Root Zone Evolution Review Committee (RZERC)**
  Chair, Internet Corporation for Assigned Names and Numbers (ICANN)   *April 2021 - Present*
  Member, Internet Corporation for Assigned Names and Numbers (ICANN)   *August 2020 - Present*
  - **Purpose**: Internet Engineering Task Force appointed member to the RZERC which reviews proposed architectural changes to the content of the DNS root zone.

- **DNS Security Facilitation Initiative Technical Study Group**
  Member, Internet Corporation for Assigned Names and Numbers (ICANN) *June 2020 - Present*
  - ○ **Purpose**: DNS Security Facilitation Initiative Technical Study Group (DSFI-TSG) was responsible for providing technical expertise and guidance on the technical work ICANN can initiate to investigate possible DNS security facilitation functions that ICANN can initiate. The TSG's final report was delivered to the ICANN CEO in October 2021.

- **Security and Stability Advisory Committee (SSAC)**
  Member, Internet Corporation for Assigned Names and Numbers(ICANN) *June 2018 - Present*
  - ○ **Routing Security Work Party - Co-Chair**: Co-chair of the work group intending to develop security and stability advice to the ICANN Board and ICANN Community on the impacts of routing security issues and their impact on the Internet naming and addressing systems.
  - ○ **Advice and Education**: Working with the SSAC Administrative Committee and other SSAC members to develop and present advice on issues which impact the security and stability of the Internet naming and addressing systems.

- **Northeast Collegiate Cyber Defense Competition (NECCDC) Red Team**
  Member *2013 - Present*
  - ○ **Penetration Testing**: Worked with other Red Team members to penetrate simulated corporate environments to simulate adversarial behavior in the competition setting.
  - ○ **Coordination**: Assisted the Red Team captain in coordination activities with the other operation of the competition both before and during the event.

- **University of New Hampshire** Durham, NH
  Research Assistant, Project54 *May 2010 - Jul 2011*
  - ○ **Research**: Conducted Human Computer Interaction user studies using computing devices in multiple form factors including traditional desktops, laptops, smart tables and voice controlled systems. Also assisted other research assistants in conducting experiments and user studies.
  - ○ **Prototyping**: Created a number of prototype user interfaces and visualization methods to display GIS data for applications in public safety and disaster response.

- **University of New Hampshire** Durham, NH
  Teaching Assistant, Electrical and Computer Engineering Department *Jan 2010 - May 2010*
  - ○ **Teaching**: Responsible for leading recitation sessions of second and third year computer engineering courses.
  - ○ **Grading**: Graded homework, quizzes, lab work and tests.

- **University of Connecticut** Storrs, CT
  Teaching Assistant, Computer Science and Engineering Department *Aug 2009 - Jan 2010*
  - ○ **Teaching**: Responsible for leading recitation sessions of the introduction to computer science course. Held office hours for students needing extra assistance in the course.
  - ○ **Grading**: Graded homework, quizzes, lab work and tests.

PUBLICATIONS

- **DNS Security Facilitation Initiative Technical Study Group - Final Report**: T April, G Brown, J Crain, M Käo, R Rasmussen, M Rogers, K Sataki, R Schischka, and D Wessels. "DNS Security Facilitation Initiative Technical Study Group - Final Report." ICANN Community. 15 October 2021. (tapril.net Copy)

- **AnyOpt: predicting and optimizing IP Anycast performance**: X Zhang, T Sen, Z Zhang, T April, B Chandrasekaran, D Choffnes, B M. Maggs, H Shen, R Sitaraman, and X Yang. "AnyOpt: predicting and optimizing IP Anycast performance." In *Proceedings of the 2021 ACM SIGCOMM 2021 Conference.* 2021. (tapril.net Copy)

- **The DNS in IoT: Opportunities, Risks, and Challenges**: C Hesselman, M Kaeo, L Chapin, k claffy, M Seiden, D McPherson, D Piscitello, A McConachie, T April, J Latour, and R Rasmussen. "The DNS in IoT: Opportunities, Risks, and Challenges." In *IEEE Internet Computing 2020.* 2020. (tapril.net Copy)

- **Understanding the Mirai Botnet**: M Antonakakis, T April, M Bailey, M Bernhard, E Bursztein, J Cochran, Z Durumeric et al. "Understanding the mirai botnet." In *USENIX Security Symposium.* 2017. (tapril.net Copy)

- **The WireX Botnet: An Example of Cross-Organizational Cooperation**: April, Tim, Chris Baker, Matt Carothers, Jaime Cochran, Justin Paine, Jared Mauch, Allison Nixon et al. "The WireX Botnet: An Example of Cross-Organizational Cooperation." Cloudflare Blog. 28 August 2017. (Akamai Blog - archive.org), (tapril.net Copy)

Education

- **University of New Hampshire** — Durham, NH
  Master of Science in Electrical Engineering — *Aug 2009 - May 2013*
  - **Masters Thesis**: *Comparing and Contrasting Manual Direct Touch Interaction with Tangible User Interfaces for Mapping Applications*

- **University of New Hampshire** — Durham, NH
  Bachelor of Science Computer Engineering — *Sep 2005 - May 2009*

Relevant Skills

- **Programming**: Go, Python, Javascript, HTML, SQL (MySQL, PostgreSQL), Erlang, PHP

- **Operating Systems**: Unix/Linux (Ubuntu, Debian, FreeBSD, NetBSD), MacOS

- **Protocols**: DNS, HTTP, BGP, TLS, EPP, Protocol Design

- **Incident Response and Management**: Crisis Management, Executive Communications, Public and Customer Notifications, Training Incident Managers