

ROBERT SEASTROM

Builder of Networks, Business Cases, and Policy

<https://technotes.seastrom.com> Leesburg, VA



EXPERIENCE

Distinguished Engineer, Information Security Office

Capital One

08/2022 - Present McLean, VA

Large Bank, Fortune 100 component

- First Distinguished Engineer in the Information Security Office
- Thought leader for IPv6 adoption as a risk reduction tool
- Drove key improvements in DDoS and DNS platform resiliency

Senior Manager, Information Security Office

Capital One

02/2020 - 08/2022 McLean, VA

Large Bank, Fortune 100 component

- Worked to reduce technology risk across a broad group of internal customers including core networking, user endpoints, cloud, VPN, DNS.
- Created and promoted ISO Risk Notes, an internal memorandum series for socializing technology evolution through the risk lens.

VP of Network Operations

Packet Host

10/2019 - 12/2019 New York, NY

Cloud Provider

- Led a team of five to support the network underpinning Packet's global scale cloud platform.
- Led security audit, closed gaps discovered, promulgated new policy to avoid repeat of mistakes.
- Drove IP address acquisition and capacity planning.

Chief Architect and Senior Vice President

Logixedge

03/2019 - 10/2019 Sterling, VA

Edge Cloud Provider (pre-funding startup)

- Designed fully automated platform for bare metal and instant-hypervisor-as-a-service delivery with modular pod design, equipment reuse waterfall, and customer-edge sub-20ms latency

Chief Architect and Senior Vice President

ByteGrid

04/2018 - 03/2019 Silver Spring, MD

Datacenter Hosting and Compliant Managed Services

- Turnaround team with mandate to fix or sell
- Responsible for facilities, power, and cooling as well as network technology stack
- Retired tech debt, improved process workflow, upgraded network connectivity, built new infrastructure.
- Prepared company for sale disentangling inter-facility dependencies so that it could be sold to multiple successor organizations
- Supported incident response

ACCOMPLISHMENTS

+ Pioneering ISPs

Built the first commercial ISPs in Japan and the Republic of Georgia. Co-founder of Digex.

+ Patents

Work at Time Warner Cable resulted in seven patents

COMMUNITY, STANDARDS, BOARDS

ARIN Board of Trustees

2023 - Present Chantilly, VA

Trustee; Risk and Cybersecurity Committee Chair

- Chair of Risk and Cybersecurity Committee - curated Risk Register, drove risk governance discussion, achieved greater member transparency of risk governance through metric reporting.
- Member of Finance Committee, budgetary and investment oversight.

ARIN Advisory Council

2004 - 2019 Chantilly, VA

Internet Governance

- Developed consensus-based policy for distribution and transfer of IPv4, IPv6, and ASN number resources.
- Advised the Board of Trustees on Internet number resource policy and related matters.

ICANN Trusted Community Representative / Crypto Officer

06/2010 - Present Los Angeles, CA

One of 14 people who signs the DNSSEC root

- DNSSEC provides cryptographic authentication for DNS queries.
- Trusted Community Representatives participate in creating the crypto keys for zone signing and perform a transparent oversight role.

NANOG Steering Committee / Board

10/2008 - 06/2011 Ann Arbor, MI

Educational Non-Profit

- Evolved NANOG from a legacy activity of Merit Network (the Michigan state research and educational network) to a stand-alone 501(c)3 with a sustainable business model to support 3 meetings per year.

EXPERIENCE

Principal Software Engineer/Architect

Neustar

📅 02/2017 - 04/2018 📍 Sterling, VA

UltraDNS / Security Services

- Designed, prototyped, and recruited a team to implement a new global authoritative DNS platform
- All processes automated from zero-touch installation of new hardware on up, resulting in substantial opex and support personnel savings.
- Baked in countermeasures to security considerations including transitive trust, unfriendly actors having physical access to hardware.

Principal Architect - Advanced Technology Group

Time Warner Cable / Charter Communications

📅 05/2016 - 12/2016 📍 Herndon, VA

Second largest cable company in the US

- Developed business case for regionalization of proposed centralized cloud DVR infrastructure - core network bandwidth and capex savings as well as increased horizontal scalability.
- Recognized by Critical Infrastructure group for driving building infrastructure issues to permanent resolution.
- Designed and built a Network Time Protocol (NTP) architecture scalable to 200 million clients - greatly increased reliability for cloud-based customer devices.

Principal Engineer - Advanced Technology Group

Time Warner Cable

📅 03/2012 - 05/2016 📍 Herndon, VA

Second largest cable company in the US

- Advanced the business case, co-designed, and built a multi-terabit-scale content distribution network to enable expansion of over-the-top video (iPad, Roku, etc) at a savings of more than 85% per byte delivered vs. competing solutions.
- Drove architectural decision to decouple DRM (cryptographic) considerations from bulk data transfer considerations, thus increasing scalability while reducing costs.
- Supported IP multicast distribution research, the outcome of which was a driver for more unicast video distribution.
- Network Engineering team liaison to developers of next-generation single-stacked IPv6-based set-top boxes. Savings of between \$50 and \$100 million vs. using globally unique IPv4 addresses on set-top boxes
- Network Engineering team representative for Boxless Trial, an initiative to win back cord-cutting customers by providing cable TV subscriptions on devices such as the Roku.
- Champion for IPv6 capabilities in all projects, saving company money on carrier-grade NAT infrastructure and secondary market address space purchase (the only source for IPv4 addresses after 2015q3).

Senior Engineer - Advanced Technology Group

Time Warner Cable

📅 06/2011 - 03/2012 📍 Herndon, VA

Second largest cable company in the US

- Built proof-of-concept Content Distribution Network to enable over-the-top video.
- Network architect for centralized Emergency Alert System (U.S. national warning system for weather and civil emergencies) to serve entire footprint of over 12 million households and businesses. Expanded remit from layer 3 to layer 5, with "no traffic that isn't encrypted and cryptographically authenticated" deliverable.

COMMUNITY, STANDARDS, BOARDS

FCC CSRIC V Working Group 4b

📅 06/2015 - 12/2016 📍 Washington DC

Communications Security, Reliability and Interoperability Council

- Developed recommendations for mitigating over-reliance on GPS as a single source for time, frequency, and phase information.

QUOTE

The cheapest, fastest, and most reliable components of a computer system are those that aren't there

C. Gordon Bell

EXPERIENCE

Internet Operations Specialist

Afilias USA

📅 04/2009 - 06/2011 📍 Horsham, PA

Top Level Domain (TLD) DNS Operator

- Maintained the anycast DNS infrastructure for large TLDs (.org, .info, etc), relied upon by the entire Internet with 100% system availability throughout tenure.
 - Designed and built a new node architecture for serving TLD information. Eliminated performance chokepoints, with automated service deployment and lower operational costs.
 - Responsible for incident response including DDoS mitigation
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Chief Architect

Neutral Net Inc

📅 05/2007 - 12/2008 📍 Sterling, VA

Fiber to the Home / Smart Grid

- Architected passive optical fiber to the home (FTTH) network to support smart metering, triple play, and future services including open/competitive access to the last mile.