



Experience

Principle Network and Security Architect, ForwardingPlane, LLC

1998 - Present

- Provide consultation, design, and strategic input for data center and service provider networks.
- Specialties include FTTx, Metro networks, community fiber projects, BGP, DNS, security, network analytics including flow data, IDS, capacity planning, IPv6 planning and integration.
- Freelance technical writing and speculation / insight on security and networking industry.

Network Engineer, Planning and Architecture Group, Energy Sciences Network (ESnet)

2013 - Present

- Member of a distributed team responsible for all aspects of an international high performance network connecting all US Department of Energy sites and other research and education networks.
- Member of the planning and architecture team responsible for strategy and architecture.
- Provide prototyping, support, assessment, and expertise for disruptive technologies.
- Act as security strategist for internal and externally facing networking and services.
- Guide framework and policy on change management process.
- Present to community as subject matter expert on various topics including but not limited to IPv6, SDN/SDX, performance analytics, and open perimeter security architectures.
- Manage vendor relationships.
- Mentor students and junior engineers.

Lead Network Engineer, University of Illinois, ICCN, UC2B, PeoriaNEXT

2008 - 2013

- Team lead and architect for regional optical network connecting all University of Illinois campuses, NCSA, and administrative networks to each other and external resources.
- Backup optical engineer for the InterCampus Communication Network (ICCN)
- Team lead and architect for campus research networking initiatives including Science DMZ architecture and deployment.
- Primary engineer, architect and representative for PeoriaNEXT, a layer2/3 hub site for Peoria, IL campuses as well as multiple medical facilities and private industry.
- Networking team lead and primary network architect for UC2B, a BTOP funded fiber to the premises ISP and NATOA broadband project of the year awardee.
- Mentor, provide direction and technical expertise to junior network engineers.
- Guest lecturer for CS security and IT networking and security courses.

SCinet

2003, 2005-2006, 2009, 2011-2012, 2014-2016, 2018-2019

- Participation in SCinet working group in various roles including wireless, routing, network security, SDN, and UNIX services.
- Team lead for SC15 SDN team.
- Create, deploy, maintain SDN architecture for SC15 network.
- Architect and coordinate 100G SDN QoS scheduling production testbed for SC16 network.
- Team Lead for [production heterogeneous SDN network](#) (2018)
- Group Lead for Experimental Networks Group (2019)

Network Engineer, National Center for Supercomputing Applications

2002 – 2008, 2012 -

2013

- Member of a small team responsible for all Layer1 – Layer3 services.
- Worked as network engineering liaison and advisor to incident responders and network security team, including management of high capacity Bro IDS systems.
- Collaborated with FBI on NCDIR project to assist and train field agents in network security and black hat techniques.



- Managed network based UNIX services including DNS, DHCP, RADIUS and NetFlow collectors.
- Design and maintain network monitoring infrastructure.

Senior Network Engineer, IT Architect, Sol Tec Internet services

2000-2002

- Managed all technical teams consisting of full and part time employees including system engineers, network engineers, and help desk professionals.
- Provided technical leadership and strategy to fast growing regional internet service and early broadband provider.
- Authored and executed a detailed architecture expansion plan that included tripling capacity and relocation of all transit, infrastructure, UNIX, and colocation services.
- Designed, deployed, and supported extensive broadband services throughout greater central Illinois and southern Chicago areas.
- Managed all vendor relationships.

Network Analyst, Country Financial

2000-2000

- Tested and evaluated new technologies such as intrusion detection systems, content filtering engines, filtering platforms.
- Evaluated, installed, and maintained remote access services including dial-up and VPN.
- Jointly maintained firewall, web caching, and network access control appliances.
- Provided overlay support to UNIX, security, windows, and networking teams.

Additional work history available upon request

Education, Certifications, and Awards

- Illinois State University 1999 B.S. fine arts in technology, photography sequence. Minor in film studies
- CCNA, CCDA (2000), BCNE (2010), JNCIA (2011), ITILv3 Foundation, HE IPv6 Sage Level
- Recipient of Letter of Commendation from U.S. Department of Energy Office of Science
- Department of Justice top secret clearance (2008)
- Co-Principal Investigator for NSF CC-NIE grant award [#1341025](#)
- Co-author, collaborator and sub-awardee for NSF CICI award [#1642142](#)
- Principal Investigator for ESnet / Berkeley Lab collaboration with Office of Veterans Affairs project ([MVP Champion Project](#))
- [Network Field Day 7](#) , [9](#), [17](#) and [segment routing round-table](#) delegate
- Primary author at <http://www.forwardingplane.net/>
- Guest and subject matter expert for [Packet Pushers podcast](#)
- Frequent subject matter expert and co-host on [software gone wild podcast](#)
- IPSpace AG Technical advisory board member
- Frequent contributor and subject matter expert for [The Network Collective Podcast](#)
- Experienced international collaborator
- RouteViews Project Member of the Board of Advisors
- NSF Panel Reviewer 2013 - As needed
- Co-Creator of [modem.show](#) technical podcast
- Co-author of IETF Draft [draft-horley-v6ops-expand-doc](#)
- Co-Authored publication [CoreFlow: Enriching Bro security events using network traffic monitoring data](#)
- Co-Authored publication [Toward live inter-domain network services on the ExoGENI testbed](#)
- [Additional contributions](#)
- Experienced public speaker and technical presenter.
- Consulting Information Technology Architect; Advisory Board Member New Mexico Internet Exchange (NMIX)
- A list of presentations and publications can be found at <https://www.forwardingplane.net/about/publications/>

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