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I am a network architect and reliability engineer with 24 years of experience specializing in architecture, design, implementation, and operation of large-scale, performant, and secure backbone, cloud, data center, and enterprise networks. I have a passion for automation, creating collaborative solutions to network performance, reliability, observability, and scaling problems, and developing effective, empathetic, inclusive, and sustainable engineering teams and cultures.

PROFESSIONAL EXPERIENCE

Network Engineer 5 (contract)   **Other** - *10/2023-Present*
Network design, automation, deployment, and operations supporting company's global engineering labs. Develop and maintain standards, documentation, and wikis, and lead formal and informal training.
- Co-lead projects to standardize, document, automate, implement WAN capacity, and migrate/onboard several thousand network devices across dozens of sites

Senior Cloud Network Reliability Engineer   **Adobe** - *9/2021-12/2022*
(AS1313) Technical lead for the global corporate network team to engineer automation solutions for wired and wireless enterprise, cloud, data center, and WAN implementation, security, reliability, and operation.
- Championed initiatives to add rigor to network engineering practices including design and operations reviews, blameless post-mortems, sustainable on-call, and automating configuration and operation

Senior Network Engineer   **Box** - *11/2019-8/2021*
(AS33011) Improved the performance, capacity, and reliability of Box's WAN, data centers, peering, and multi-cloud infrastructure.
- Led cross-team initiatives to overhaul monitoring and observability, increase operational efficiency and velocity, and enable executive visibility of projects and network status

Principal Network Engineer   **HERE Technologies** - *8/2018-10/2019*
(AS1248) Design, automation, reliability, performance, and scaling of HERE's global on-premises and hybrid multi-cloud network infrastructure enabling specialized mapping technologies, location data, and automotive navigation services.
- Introduced Ansible to enforce compliance, improve standardization, and reduce deployment times
- Identified software bugs and rewrote QoS policies to resolve multiple long-standing issues, reduced packet loss and improved throughput 5-10x globally

Senior Network Engineer   **Gaikai/Sony** - *1/2017-5/2018*
(AS33353) Network planning, design, documentation, implementation, and operation of WAN, edge peering, load balancing, VPCs, and data centers for PlayStation Now's game streaming services.
- Developed and implemented process and training improvements increasing operational efficiency and reducing deployment times by 10%
- Designed and implemented routing and load-balancing changes reducing intra-regional latency 2-4ms
- Led new technology evaluation and testing; RDMA/RoCE, commodity hardware, IPv6

Senior Engineer (L64) - Network Strategy & Planning   **Microsoft** - *3/2014-1/2017*
(AS8075) Led company-wide initiatives to enhance customer experience, improve network capacity, performance, and reliability, and optimize the existing peering, CDN, and backbone infrastructure.
- Education, outreach, and strategic partnership building at events and conferences (NANOG, RIPE, PTC, GPF); elected to DE-CIX Customer Advisory Board
- Created reports and tooling with PowerBI, Python, Excel to unblock 60 site builds and save $15 million

Systems (Sales) Engineer   **Juniper Networks** - *5/2012-8/2013*
Involved with all aspects of pre/post-sales to a global service provider; developed consultative relationships with technical and executive decision makers; led architecture and design reviews.
- Key team contributor in transforming resistance into success to exceed quota, and deliver over $40 million in sales revenue

Network Architect/Staff Engineer   **Infocrossing/Wipro** - *7/2010-5/2012*
(AS19229) Definition, development, documentation, and implementation of backbone, cloud, data center networks, and solution designs for a managed services provider (MSP).
- Developed, tested, and implemented designs that reduced network costs 10-30%, increased capacity 1000%, and improved reliability from <99.5% to 99.99%
- IP Manager, developed training and implemented process, procured v4 & v6 addresses from RIRs

Principal IP Engineer   **Intelepeer** - *3/2009-6/2010*
(AS32385) Hired to stabilize, redesign, document, and rebuild the network of a wholesale VoIP carrier.
- Developed automation, led installs and site builds, and successfully completed migrations: reduced OPEX by 30%, improved network availability from <95% to 99.99%, and increased capacity 2000%

Tech Lead - Senior Network Engineer   **Yahoo!** - *5/2007-2/2009*
(AS10310) Co-led the global teams responsible for Yahoo's edge, backbone, and data center networks. Worked with peers and providers to implement and troubleshoot connectivity worldwide.
- Converted backbone IGP from OSPF to IS-IS; assisted in the unification of disparate worldwide ASNs into one single global network, stretching from Singapore to Switzerland, while in service, with no downtime

Principal Engineer   **Alcatel-Lucent NZ** - *8/2006-5/2007*
Lead Architect on complex solution design projects for Telecom New Zealand. Created and tested L3VPN-based products; contributed to metro and backbone architecture.

Lead IP Network Engineer   **tw telecom** - *6/2005-7/2006*
(AS4323) Team lead responsible for lifecycle and vendor management, network implementation and operation, and was final escalation for all IP/MPLS/telephony-related products and services.
- Installed and configured stopgap monitoring tools (Nagios, Munin, Syslog-NG); lowered MTTR and beat the commercial solution by two-years; implemented Cfengine to automate Debian, RHEL, and Solaris

Lead Network Engineer   **Terremark** - *1/2004-1/2005*
(AS23148) Responsible for performance, design, documentation, implementation, and configuration of a carrier neutral IXP and data center provider; performed traffic/flow analysis in support of peering activities; mentored junior engineers.
- Designed and implemented BGP confederations across three continents, converted from OSPF to IS-IS

Senior IP Engineer   **Fusiontel** - *9/2002-1/2004*
(AS19786) Sole network engineer: responsible for design, documentation, and 24/7 operation of an international VoIP carrier; configured ACLs, BGP, and SIP/H.323 gateways; managed IP addressing, administered Solaris, Debian, NTP, Apache HTTP, Bind DNS, Syslog-NG, Cricket.

Network Engineer   **USA.net** - *3/2001-5/2002*
(AS14454) Cabled, installed, configured, and maintained LAN, WAN, and data center routers, switches, access-lists, firewalls, load balancers, and VPN concentrators; managed IP addressing, NTP, and DNS.

NOC Technician   **Various** - *9/1999-1/2001*

Lance Corporal   **U.S. Marine Corps Reserve** - *1998-2002*
Field Radio Operator: responsible for set up, maintenance, and operation of communications equipment in the field to establish and maintain secure communication with other units. Secret security clearance.
- Squad leader; meritorious promotions and commendations

CORE SKILLS

- IP network architecture, design, security, and operation
- IP address planning and management
- Learning and teaching; able to quickly ramp up in new subject areas and then teach others
- Writing for technical and non-technical audiences; design documents, training, blogs, wikis, how-to's
- Cross-functional consensus building and collaborative problem solving
- Interviewing, coaching, mentoring, and growing distributed engineering organizations
- Standards development, architecture reviews, system design, and code reviews
- Technology evaluation, new product introduction, and vendor management
- Internet peering and interconnection
- Change management and management of change

TECHNICAL EXPERIENCE

- Hardware and software including Juniper, Cisco, Arista, ZPE, Cumulus, Quanta, PaloAlto, A10, F5, RaspberryPi
- OSPF, IS-IS, BGP/MP-BGP, Anycast, MPLS VPNs, RSVP-TE, VxLAN, IP-PIM
- Compute, storage, security, CDN, L2-interconnection, load balancing, and VPCs on AWS, GCP, Linode
- Development using Go, Python, Bash, Git, Mercurial, Make, Docker, SQL, HTML, CSS, YAML, JSON, Github
- Installation and operation of Debian/Ubuntu, RHEL/CentOS, Fedora, FreeBSD, and VMWare ESXi servers
- Provisioning and configuration with Terraform, Ansible, Puppet, Nornir, RANCID, Jinja, NETCONF
- DNS/DDI/DCIM with Bind, Infoblox, Device42, BBNA, Netbox; HTTP/S with Apache, Nginx, Traefik, HAProxy
- Monitoring and observability with syslog, SNMP, netflow/sflow, LibreNMS, Sensu, Zabbix, Nagios, PagerDuty

CERTIFICATIONS & AFFILIATIONS

Member, NANOG	*2012-Present*
Board Member, Customer Advisory Board, DE-CIX	*2014-2016*
Vice President, Colorado Chapter of the Internet Society (COISOC)	*2011-2016*
Steering Committee Member, Rocky Mountain IPv6 Task Force (RMv6TF)	*2011-2016*
Juniper Networks Certified Internet Specialist (JNCIS-ENT)	*2012-2015*
Juniper Networks Certified Internet Specialist (JNCIS-M)	*2006-2009*
Cisco Certified Network Professional (CCNP)	*2002-2008*

EDUCATION

Associate of Arts, Physics
Miami-Dade College