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I am a principal 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, and developing effective, empathetic, inclusive, and sustainable engineering teams and cultures.

I have a passion for solving infrastructure challenges programmatically through software and want to use human-first design principles to guide the research, development, and innovative application of technology to create collaborative solutions to network performance, reliability, and scaling problems.

PROFESSIONAL EXPERIENCE

Senior Cloud Network Reliability Engineer

Adobe - 9/2021-12/2022

Technical lead for the global corporate network team to engineer automation solutions for wired and wireless enterprise, data center, and WAN (AS1313) implementation, security, reliability, and operation.

- Created containerized tools using Ansible, Nornir, Jinja, FastAPI, and Python to integrate with/update existing applications, automate upgrade and deployment processes, and standardize configurations
- 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

Improved the performance, capacity, and reliability of Box's WAN, data centers, peering (AS33011), and multi-cloud infrastructure, leading cross-team initiatives to increase operational efficiency and velocity.

- Updated/maintained automation with Ansible, Python, Jinja, and Docker for configuration management, code upgrades, ZTP, implementation, and daily operations
- Enabled executive visibility of cross-team projects and network status by creating and maintaining dashboards and documentation in Confluence, Jira, and Splunk
- Partnered with NRE and SRE to overhaul monitoring and observability with Sensu, PagerDuty, LibreNMS, Splunk, simplifying alert configuration and significantly improving alert utility/signal-to-noise ratio

Principal Network Engineer

HERE Technologies - 8/2018-10/2019

Design, automation, reliability, performance, and scaling of HERE's global on-premise (AS1248) and 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 trouble tickets, reduced packet loss and improved throughput 5-10x globally
- Edge network redesign; hybrid multi-cloud interconnection and inter-VPC/VPN routing, virtualized edge compute/network services (FW, LB, DNS, HTTP/HTTPS, VPN), 100G migration roadmap

Senior Network Engineer

Gaikai/Sony - 1/2017-5/2018

Network planning, design, implementation, and operation of WAN, edge peering (AS33353), and data centers for PlayStation Now's game streaming services.

- 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
- Developed and implemented documentation, process, and training improvements which increased operational efficiency and reduced deployment times by 10%

Senior Engineer - Network Strategy & Planning**Microsoft** - 3/2014-1/2017

Led company-wide initiatives to enhance customer experience, improve network performance and reliability, and optimize the existing peering (AS8075), CDN, and backbone infrastructure.

- Collaborated with O365 and Field Services to increase customer retention and satisfaction; created and presented training and documentation, streamlined service activation and escalation processes
- 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

Definition, development, and implementation of backbone (AS19229), cloud, and data center networks and solution designs for a managed services provider (MSP).

- IP Manager, developed training and implemented process, procured v4 & v6 addresses from RIRs

Principal IP Engineer**Intelepeer** - 3/2009-6/2010

Hired to stabilize, redesign, and rebuild the network of a wholesale VoIP carrier (AS32385).

- Led equipment installs, 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

Co-led the global teams responsible for Yahoo's edge (AS10310), backbone, and data center networks. Worked with peers and providers to implement and troubleshoot connectivity worldwide.

- Converted backbone IGP from OSPF to IS-IS without service interruption
- 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 ongoing metro and backbone redesigns

Lead IP Network Engineer**tw telecom** - 6/2005-7/2006

Team lead responsible for lifecycle and vendor management, network implementation and operation (AS4323), 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

Responsible for performance, design, implementation, and configuration of a carrier neutral IXP and data center provider; performed traffic/flow analysis in support of peering (AS23148) activities.

- Designed and implemented BGP confederations across three continents, converted from OSPF to IS-IS

Senior IP Engineer**Fusiontel** - 9/2002-1/2004

Sole network engineer; responsible for design, documentation, and 24/7 operation, configured ACLs, BGP (AS16525) and SIP/H.323 gateways; managed IP addressing, administered Solaris, Debian, NTP, Apache HTTP, Bind DNS, syslog, Cricket.

- Authored and presented comprehensive company-wide training on TCP/IP, VoIP, networking, security, troubleshooting; reduced escalations, lowered MTTR, and increased sales closure rate
- Designed and implemented L2VPN with AToM

Network Engineer

USA.net - 3/2001-5/2002

Cabled, installed, configured, and maintained LAN, WAN, and data center routers (AS14454), 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 and vendor management
- Internet peering and interconnection

TECHNICAL EXPERIENCE

- Hardware and software including Juniper, Cisco, Arista, Dell, Cumulus, Quanta, PaloAlto, A10, F5, RaspberryPi
- OSPF, IS-IS, BGP/MP-BGP, Anycast, MPLS VPNs, RSVP-TE, VxLAN, IP-PIM
- Public, private, and hybrid cloud infrastructure and connectivity; AWS, GCP, Azure, Linode
- Development using Go, Python, Bash, Git, Make, Docker, SQL, HTML, CSS, YAML, JSON, Github Actions
- Installation and operation of Debian/Ubuntu, RHEL/CentOS, Fedora, FreeBSD, and VMWare ESXi servers
- Provisioning and configuration with Terraform, Ansible, Puppet, Packer, 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