

David Michael Pennington, CCIE 4483 - Emeritus

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NetworkEngineering: <https://networkengineering.stackexchange.com/users/775/mike-pennington>

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Summary of Qualifications

- Technical attributes:
 - Network engineer with 25+ years of experience, including direct network-hardware / software research and development
 - Principal inventor and maintainer of an Open-Source python network-engineering tool ([CiscoConfParse](#)) with 700+ stars and over 3 Million downloads since 2016.
 - Strong background supporting networked applications across the full Software Development Life-cycle (SDLC)
 - Experience across a variety of market verticals including retail consumer services, hardware development, medical software, and manufacturing
 - Fully qualified with wireline and WiFi: design / implementation / monitoring / troubleshooting / protocols / best-practices
 - Broad knowledge of IT infrastructure products from Cisco / Aironet / Meraki, Juniper, F5 Networks, PaloAlto Networks, Force10, Amazon Web Services, and ThousandEyes
 - WAN engineering expertise: MPLS, T-carrier, SONET, ATM, Ethernet, and WAN-PHY Ethernet
 - Strong attention to detail and creativity.
 - Multi-lingual engineer who can write in [Python](#), [Go](#), and [bash shell](#) (roughly in that order of proficiency).
 - Capable of both electronic hardware and software diagnostics (with appropriate system design information available).
 - US Citizen, ex-USAF; held an active US-Secret while in the Air Force. I am open to applying for security-clearances (as-required).
- Personal attributes:
 - Articulate written and verbal communication skills
 - Customer focused: devoted to resolving end-customer concerns
 - Somewhat Organized: manages multiple projects
 - Adaptable: improvises to overcome challenges
 - Collaborative: team player who appreciates the strength others bring to the table

Employment

Company: Starbucks Coffee Company - US / Canada IT: Retail Networking

Title: Network Engineer - Contract Worker

Dates: Feb 2023 - Sep 2023

- Built Python scripting to report which of over 10-thousand Starbucks' US / Canada Retail locations are hard-down, or show very high ping latency based on [Splunk](#) data ([Splunk](#) is now acquired by Cisco). The tool used [SignalFx](#) (a [Splunk Enterprise Data Warehouse](#) API) to pull and process the data. The RetailNetworking IT manager requested the tool to identify which of hundreds of Starbucks' Retail stores could be down (due to things like a regional ISP problem).
 - Developed other Python automation as requested by Starbucks.
 - Self-directed Python automation development such as scripting to process data from Starbucks' internal *starshipctl* tooling (which provides data about each store location).
 - Contributed to in-StoreDNS project to remove WAN DNS dependencies in Retail Stores; WAN-only DNS over VPN blocked failover to non-VPN services if Retail Store VPN went down.
 - Review other team python repo git-commits and request modifications as required.
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Company: WellSky

Title: Staff Network Engineer

Dates: Jun 2022 - Oct 2022

- Develop firewall policies to conform to application connectivity requirements
 - Palo Alto firewall rules: Move / Add / Change
 - Monitor Palo Alto firewall behavior with Panorama
 - Manage Palo Alto Firewall crash events and RMA components as-required
 - Troubleshoot Windows server connectivity problems between firewall zones
 - Maintain AWS / Google Cloud environments
 - Deploy and maintain customer-facing services on F5 LTMs
 - Analyze logs for clues relevant to service outage Root-Cause-Analysis (RCA)
 - Edit / maintain network services runbooks
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Company: NetActuate

Title: Senior Network Engineer

Dates: Nov 2021 - Apr 2022

- Not a good fit for NetActuate's needs
- Built tools to translate YAML documents to Ansible runs on Jinja2 configuration templates
- Built automation to create and deploy routed site-to-site VPNs on Juniper routers
- Analyze BGP Anycast policies and recommend changes to optimize customer experience in local markets

Company: ThousandEyes (acquired by Cisco Systems in CY2020)

Title: Senior Network Engineer

Dates: Dec 2019 - Nov 2021

- Built and troubleshot ThousandEyes' public / private network infrastructure.
- Migrated services and networks from the ThousandEyes' Digital Realty colo (San Francisco) to AWS Infrastructure
- Built / supported IPSec services between Digital Realty, AWS, Google Cloud, and Cisco Systems
- Point-of-contact for ThousandEyes' public customer bgp request automation (managed mostly via python infra)
- Built / reviewed AWS EC2 terraform Github Pull Requests with Atlantis
- Built and modified Makefiles / python scripts in support of production services.
- Implement add / move / changes to Palo Alto firewall rules
- Implement add / move / changes to ThousandEyes' bind resolvers
- Build and deploy services in self-implemented and self-hosted Ubuntu packages.
- Build Ansible configurations

Company: Samsung Data Services America

Title: Senior Staff Network Engineer

Dates: Aug 2012 - Oct 2019

- Rapidly relocated 400-seat office network, WAN edge, internet circuits, self-hosted Data Center, VoIP PBX / SBC infrastructure, and DR-site inside a 3 month period in support of Samsung's office move. I slept in my car to ensure that all tasks were completed
- Surveyed for and deployed over 350 WiFi access-points around Samsung's Fab campus (at the time, involving over a dozen buildings, totaling over two million sqft including multiple hostile-RF / space-constrained / chemical environments)
- Redesigned F5 load-balancer configuration and topology to eliminate outages during F5 active-standby fail overs
- Implemented IT Security policies in Palo Alto firewalls and Bluecoat web proxies
- Managed DHCP and DNS objects in Infoblox; migrated Windows DNS zones to Infoblox
- Deployed and maintained IPSec site-to-site tunnels between office / data centers
- Deployed QoS services on routers to prioritize VoIP and interactive VNC / RDP sessions in the face of circuit congestion.
- Tuned OSPF configurations to converge rapidly in the face of network topology changes
- Worked with Windows system administrators to deploy wireless and wired EAP-TLS dot1x authentication (authenticating through Aruba Clearpass RADIUS NAC)
- Deployed Samsung PBX / VoIP solutions; deployed active / standby VoIP Session Border Controllers in front of Samsung's external SIP circuits

- Deployed MPLS VPN VRFs using BGP VPNv4 address-families to isolate and customize routing for special VLANs
 - Troubleshoot and resolved issues with Samsung's 100,000 CPU core PAAS cloud running on Nexus 9000-series switches
 - Managed network access policies in Aruba Clearpass and Cisco ISE NAC servers
 - Developed many Python and Ansible automation scripts for enforcing config standards, and implementing repetitive / complex network changes
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Company: Dell Computer Corporation
Title: Network Development Senior Engineer
Dates: Feb 2011 - Aug 2012

Company: Elm River Services (contract position)
Title: Senior Network Engineer
Dates: Sep 2009 - Feb 2011

Company: Modis IT (contract position)
Title: Network Architect
Dates: Mar 2009 - Aug 2009

Status: Relocate from Montana to Texas
Dates: Feb 2006 - Mar 2006

Company: Bresnan Communications
Title: Senior Network Engineer
Dates: Apr 2008 - Jan 2009

Company: CDI Business Solutions (contract position)
Title: Senior Network Engineer
Dates: July 2006 - January 2008

Status: Relocate from California to Montana
Dates: June 2006 - July 2006

Company: Cisco Systems

Title: Network Consulting Engineer & Technical Marketing Engineer
Dates: August 1999 - May 2006

Company: International Network Services (acquired in 1999 by Lucent)
Title: Senior Network Consultant
Dates: August 1998 - August 1999

Company: United States Air Force
Title: Flight Test Engineer & Network Engineer
Dates: Feb 1993 - July 1998

Education, Certifications, and Awards

- Cisco Certified Internetworking Expert (CCIE #4483 Lifetime Emeritus)
- BSEE, Christian Brothers University - Memphis TN, 1992
 - Brother Phillip Morgan Design Excellence Award
 - 2nd Place IEEE Regional Competition; IEEE Region 3, Williamsburg, VA, 1991
- USAF ROTC Distinguished Graduate

Skills Summary

Table 1. Skills Matrix

| Category | Proficient | Familiar |
|------------------------------------|---|---|
| Networking Products | Cisco IOS, Cisco ASA, Cisco NXOS, Cisco AireOS, F5 BigIP LTM, Palo Alto PANOS, Force10 FTOS, Bluecoat SGOS, Infoblox | Arista EOS, Juniper JunOS, Force10 Networks, ExtremeOS, Adtran NetVanta |
| Network Protocols | DNS, DHCP, HSRP, OSPFv2, BGPv4, EIGRP, Rapid PVST, STP, BFD, MPLS, LDP, MPLS VPN, EoMPLS, 802.11 wifi, CAPWAP, Remote VPN | MSDP, PIMv2, MPLS TE, VPLS, IPv6, OSPFv6, ISIS, DMVPN |
| Network Policy & Management Tools | Aruba Clearpass, Cisco ISE, Cisco NCS Prime 1.3, Splunk, Wireshark, Zenoss | SNMPv3, Oxidized, Nagios, Cacti, Rancid, Graphite, LogicMonitor |
| Transport Protocols / Equipment | Gigabit, Ten Gig, and 100 Gig Ethernet | OC3 to OC192 SONET, T1, T3/DS3, ATM PVCs |
| Operating Systems & Virtualization | RHEL, Ubuntu Linux, MS Windows, VMWare ESXi, vCenter | Solaris, HPUX |
| Scripting / SW Development | Python, Make | Bash, Go, Perl, Terraform, TCL/Expect, Javascript |