

# Resume for David Michael Pennington, CCIE 4483 Emeritus

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## Employment History

**Company:** Samsung Data Services America

**Title:** Senior Staff - Network Architect

**Dates:** Aug 2012 - Present

- Led network architecture and new services deployments for a 24x7x365 semiconductor fab campus with over 1.5 million sqft of occupied space, and 2700 personnel on-site.
  - Redesigned F5 load-balancer configuration and topology to eliminate outages during F5 active-standby failovers
  - Found creative solution to critically low memory in ASA5585 firewalls, which otherwise would have required a politically unacceptable outage during 14-nm wafer production
  - Improved voice wireless network coverage from 70% to over 95% in the fab buildings, which include WiFi-hostile areas
  - Designed production Hadoop cluster using Cisco Nexus fabric switches
  - Leveraged EAP and Cisco ISE host OS detection capabilities to design a unique employee BYOD solution
  - Implemented changes which significantly reduced the frequency of DC and services outages
- Planned and deployed campus copper / fiber cabling infrastructure
- Leveraged a single domain-wide public wildcard SSL certificate to reduce costs of securing servers while maintaining host-level security requirements
- Built automation scripts for device inventory, backups, and (some) changes; scope: 800 managed Cisco and F5 network devices
- System administrator for network team linux jumpboxes and NFS storage systems
- Wrote and reviewed change procedures
- Budgeted man-hour and equipment requirements for various projects, and presented cost trade offs to stakeholders
- Periodic data center inspections, and on call participation, and helped other staff members with networking problems

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**Company:** Dell Computer Corporation

**Title:** Network Development Senior Engineer

**Dates:** Feb 2011 - Aug 2012

- Projects:
  - Identified over 30 product defects, including one severe SNMP security vulnerability that required an immediate firmware patch.
  - Subject matter expert for routing protocols, security, RADIUS, TACACS+, and linux
  - Responsible for automating ethernet switching test cases
- Received Dell stock incentives for CY2011 performance.

**Company:** Elm River Tech Services (contract position)  
**Title:** Owner & Solutions Engineer  
**Dates:** Sep 2009 - Feb 2011

- Projects:
    - MSTP and OSPF redesign
    - Cisco ASA firewall to protect DMZ services
    - Data Center LAN services and network optimization
    - DMZ services on Adtran NetVanta routers
    - Linux routers and firewalls using iptables
    - Web design using Django, Python and MySQL
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**Company:** Modis IT (contract position)  
**Title:** Network Architect  
**Dates:** Mar 2009 - Aug 2009

- Network architecture, engineering, & troubleshooting for a 200-element MPLS and IP network
  - Projects:
    - MPLS VPN services backbone
    - Catalyst 6500 VSS datacenter solutions in support of VMWare vMotion requirements
    - Spanning-tree outage, OSPF / BGP routing problems, B2B DMZ issues
    - WAN Optimization appliance (WAE) failures
    - Intermittant problems with excessive business partner latency, and long SQL query times
    - Bind9 DNS services on RHEL
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**Company:** Bresnan Communications  
**Title:** Senior Network Engineer  
**Dates:** Apr 2008 - Jan 2009

- Network architecture, engineering, & troubleshooting for a 400-element MPLS and IP Network
- Projects:
  - BGP policies for peering with customers and upstream providers
  - Converted IPv4 core to LDP / MPLS TE with Juniper M and J-series routers
  - Ethernet over MPLS pseudowire services for over 90 sites
  - Circuit capacity troubleshooting, router deployments / upgrades
- Python scripting: DNS mapping, graphical WAN throughput analysis

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**Company:** CDI Business Solutions (remote contract position)

**Title:** Senior Network Engineer

**Dates:** July 2006 - January 2008

- Projects:
  - MPLS VPN troubleshooting
  - OC48 SONET MAN connecting campus networks
  - Upgrade from Catalyst 5500s to Catalyst 6500s
  - Primary / backup BGP connectivity to multiple ISPs
  - F5 BigIP Load Balancing solutions
  - Avaya VoIP infrastructure
  - QoS policies to prevent web and PC Backup applications from interfering with WAN VoIP traffic
  - SSL VPN for remote workers
  - per-application Netflow and SNMP data
  - Built automation to implement PCI security audits of router / switch configs

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**Company:** Cisco Systems

**Title:** Network Consulting Engineer & Technical Marketing Engineer

**Dates:** August 1999 - May 2006

- TME for the Enhanced FlexWAN and 7600-SIP-200 line cards
- Conducted lab tests to quantify product scalability and performance characteristics using perl / tcl / expect and Agilent N2X and Ixia test equipment
- Worked with HW and SW developers to refine existing functionality
- Authored Product Requirements Documents to identify feature requirements
- Identified trends in market segments and molded product requirements accordingly
- Conducted seminars and executive briefings on the product
- Authored technical performance literature to highlight product benefits
- Conducted training sessions with customers and account teams
- Conducted face to face candidate interviews

## Miscellaneous

- BSEE, Christian Brothers University - Memphis TN
- Cisco Certified Internetworking Expert (CCIE #4483 Emeritus), March 1999
- Authored [Ciscoconfparse](#): a python library for automatically parsing and auditing Cisco IOS configurations which averages over 5000 downloads per month
- Wrote patches for [Exscript](#): a python library for multi-vendor network device automation

## Skills Summary

**Table 1. Skills Matrix**

Category	Proficient	Familiar
Networking Vendors	Cisco IOS, Cisco ASA, Cisco NXOS, F5 BigIP LTM	JunOS, PowerConnect, Force10, ExtremeOS, HP Procurve, Brocade NetIron, Checkpoint/Nokia FW, Adtran NetVanta, BlueCoat
Cisco Routers / Switches / Firewalls	Catalyst 4500 (Sup6/Sup7), Catalyst 6500 (Sup2-Sup2T), 7600, 7200, 3800, Catalyst 3750X, Catalyst 2960S, WLC 5508, ASA 5585-X, and many more...	12000, ASR1000, Cisco VoIP Phones, WAE-674, BlueCoat Proxy SG900, Riverbed WAN optimizers
Network Protocols	OSPFv2, BGPv4, EIGRP, PVST+, STP, LDP, 802.11n	IPv6, OSPFv6, ISIS, MSTP (IEEE 802.1s), RSTP (IEEE 802.1w), RIP
Network Services	Active Directory, RADIUS, TACACS+, HSRP, LLQ, Policing, Shaping, CBWFQ, Marking, MPLS VPN, EoMPLS, NAT/PAT, ACLs, DHCP, DHCP Snooping, Dynamic ARP inspection	VPLS, MPLS TE/FRR, IPSec, SSL VPN, DMVPN, H.323, RTP, SCCP, MGCP, 802.1x (dot1x), netflow, WCCP, VRRP
Network Management	Cisco ISE 1.2, Cisco ACS 5.4, Cisco NCS Prime 1.3, Graphite, Samsung XPerViewer NetMon, SNMPv2, unix scripting	SNMPv3, Nagios, Cacti, Rancid
Transport Protocols / Equipment	OC3-OC192, T1, T3/DS3, Gigabit Ethernet (802.3z), Ten Gig (802.3ae), LACP (802.1ad), 802.3ah, MRV Media Cross-Connect, Samsung Ethernet Protection Switching (EPS)	ONS 15454, MSTP, CWDM, DWDM, VCAT, LCAS, E-FEC
Operating Systems	Debian, Ubuntu, CentOS, Windows 2008 Server	FreeBSD, OpenBSD, Solaris, HP-UX, Windows 2003 Server, VMWare6
Unix Services	hg/Mercurial, bind9, cron, moin-moin (wiki), freeradius, tacacs+, sshd, openssl, vsftpd	postfix, pamd, iscsid, nis+, nfs, samba, rsync, git, svn, cvs
Scripting	Python	Perl, TCL, Expect, Bash, Javascript
Tools	Wireshark, Telerik Fiddler, Fluke AirCheck, IPScan 100A Probes	Fluke CableIQ, Fluke AirMagnet