Mark Kamichoff

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To utilize my network and systems engineering skills in a position involving network engineering and architecture

Skills / Proficiencies

- Proficient in operating and administering Juniper SRX-series services gateways, Juniper NetScreen/ISG/SSG-based firewalls, Juniper J/M/MX-series routers, Cisco IOS and NX-OS-based platforms, and F5 load-balancing products (LTM, GTM, FirePass).
- Experience with various host operating systems including, but not limited to, GNU/Linux, FreeBSD, Solaris, IRIX, and several versions of Microsoft Windows.
- In-depth knowledge of various network and application-level protocols such as TCP/IP, IPv6, BGP, OSPF, IS-IS, MPLS, IPsec/IKE, HTTP, DNS[SEC], and others.
- Broad knowledge and experience with IPv6 relating to addressing, routing protocols, LAN deployments, tunneling, and translation techniques.
- Proficiencies in ISC BIND, Apache HTTP Server, MySQL, Quagga, Netfilter, PF, and various FOSS network tools including tcpdump, Wireshark, Nmap, arpwatch, scapy, socat, and others.
- Network management experience with MRTG, RRDtool, SmokePing, RANCID, Observium, Juniper's Network and Security Manager (formerly NetScreen-Security Manager), and other FOSS tools.
- Programming experience in PHP, Perl, Python, and C (focusing on the Berkeley sockets and OpenGL APIs).
- Extensive troubleshooting experience focusing on analysis of the synergistic effects of enterprise applications, Unix operating systems, firewalls, intrusion detection systems, and load balancers.
- Inactive certifications: JNCIE-SP #632, JNCIP-SP #814, JNCIS-SP, JNCIA-SEC, JNCIA-Junos, JNCIP-SEC, JNCIS-SEC, JNCIA-DX, JNCIS-ER, JNCIA-SSL, CCNA Routing and Switching

Professional Experience

Principal Network Development Engineer at Amazon Web Services (Arlington, VA) October 2023 - Present

- Next generation data center network fabrics and platforms

Network Development Engineer III at Amazon Web Services (Seattle, WA and Arlington, VA) July 2019 - September 2023

- Designing the next generation data center fabrics for AWS with a focus on seamless scalability and cost savings

Network Development Engineer II at Amazon Web Services (Seattle, WA) February 2014 - June 2019

- Designed and delivered the topology for the 3rd generation of AWS' data center commodity network fabrics
- Led the development of integration and migration procedures for a new core network design
- Responsible for leading network scaling projects across various AWS data centers
- Used a popular templating engine with Python to develop safe network change management scripts

Sr. Network Design Engineer II (originally Sr. Network Architect) at Time Warner Cable (Charlotte, NC) October 2012 - February 2014

- Led the full integration of the enterprise IT network from a large acquisition
- Designed a solution to centrally integrate all regional hub site locations with the enterprise IT network
- Performed various consulting roles relating to firewall deployment, advanced routing, and switching

Network Architect at Time Warner Cable (Charlotte, NC) December 2008 - October 2012

- Led the migration from NetScreen-5000-series firewalls to Juniper SRX3600 services gateways in TWC's enterprise data centers
- Designed the address scheme, configuration, and network topology for the implementation of IPv6 on TWC's IT networks and data centers
- Architected and deployed a highly-available SSL VPN-based solution using the F5 FirePass product to allow users to securely access corporate resources
- Assisted in the redesign of the national IT network from a security and firewall perspective
- Designed the network architecture to allow mission-critical applications to be available in the event of a DR, utilizing various technologies including MPLS L2VPNs, GSLB, and NAT to achieve quick failovers between geographically-separate data centers

Sr. Firewall Engineer at Time Warner Cable (Charlotte, NC) January 2007 - December 2008

- Maintained and troubleshot Juniper firewalls on the IT network. Provided support for complications experienced with BGP and OSPF processes on Juniper ISG-series firewalls
- Served as an escalation point for firewall-related problems and issues on the IT network
- Developed and integrated the ESD software with several network management applications
- Assisted in the configuration of Internet connection redundancy between the data centers, utilizing BGP and multiple upstream providers
- Participated in the rapid migration and reconfiguration of 100+ VPN tunnels to compensate for the readdressing of all Internet firewalls in the Charlotte data center
- Enabled the Juniper NetScreen-Security Manager to be operational in a DR event

Firewall Engineer at Time Warner Cable (Charlotte, NC) May 2005 - December 2006

- Performed routine configuration and management of Juniper NetScreen, ISG, and SSG-series firewalls
- Designed a network of Juniper J-series routers connected via GRE tunnels to provide headend networks access to certain corporate applications. Multiple routing instances and FBF were utilized to handle overlapping address space while eliminating the need for NAT
- Developed and maintained ESD, a web-based CMDB-like device and inventory management system based on PHP, Perl, and MySQL
- Created a web-based interactive firewall policy request database to assist with auditing and compliance requirements
- Administered a customized performance and reporting suite of utilities based on MRTG, RRDtool, SmokePing, and drraw
- Performed routine administration of several Debian GNU/Linux-based monitoring servers
- Wrote custom backup scripts for Juniper firewalls, Juniper routers, and Cisco routers to be used for archival purposes and statistical analysis
- Assisted in the migration of firewall devices from NetScreen-Global PRO to Juniper NetScreen-Security Manager

WAN Engineer at igxglobal on contract to Time Warner Cable (Charlotte, NC) October 2004, January 2005 - May 2005

- Configured VPN tunnels between NetScreen firewalls and 3rd-party IPsec implementations
- Administered and troubleshot security policies and routing issues on the corporate IT network

- Managed firewalls via the NetScreen-Global PRO management system as well as by Expect scripts
- Assisted in the configuration and management of HP OpenView's Network Node Manager as it related to network infrastructure-related devices

Security Operations Center Engineer at igxglobal (Hackensack, NJ) July 2004 - December 2004

- Implemented security devices on-site and troubleshot various networking and security issues
- Provided consulting services to clients in the New York City metro area
- Worked with multiple VPN systems, including various Unix (OpenVPN) and IPsec (NetScreen) implementations
- Administered GNU/Linux-based mail (Postfix) and DNS (BIND 9) servers

Systems Programmer, Operator at Center of Advanced Information Processing, Rutgers University (Piscataway, NJ) Summer of 2003

- Developed a web-based computer administration system using PHP, MySQL, SNMP, and Perl
- Researched GNU/Linux-based security issues on private networks, including using IDS tools for auditing breaches
- Performed operator duties, wireless network administration, and Unix-based backups maintenance

Web Developer at Center of Advanced Information Processing, Rutgers University (Piscataway, NJ) Summer of 2001

- Created a web-based management system to track system performance of four Sun Enterprise 10000 servers
- Moved the CAIP Newsletter from printed to electronic format

Education

Rensselaer Polytechnic Institute (Troy, NY) May 2004

Bachelor of Science in Computer and Systems Engineering
Minor in Computer Science
Minor in Psychology

References are available upon request.