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SKILL SUMMARIZATION

NETWORK ENGINEERING

General

- Planning, testing, reviewing and designing large to small networks.
- Extensive design experience with Cisco routers and switches with L2 & L3, metro Q-n-Q, switch and router replacement.
- Used other vendors such as Juniper, Arista, Nokia, Brocade, Adtran, MicroTik, AudioCodes, Siklu.
- General network utilization forecasting & risk prediction, throughput testing.
- Implementing traffic marking and QoS network wide and understanding of network protocols.
- Working with carriers and network interoperability testing.
- Working with packet analyzers such as Wireshark, tcpdump & ngrep to debug issues.
- Traffic accounting/reporting and billing systems.
- Setup and maintain network firewalls, F5/Citrix load balancers, OpenVPN servers.
- Network security, detection, scanning & network attack mitigation strategies.
- Client support and internal operational support for business as needed.
- Experience using Cisco VIRL network virtualization modeling software.
- Experience using Cisco MATE Design network modeling software.
- Dell/EMC Smarts Network Configuration Manager (NCM) for pushing configs & network compliance/auditing.
- Configured and setup RANCID for network configuration backups.
- Using Netbox to help document & manage network elements for automation.

BGP

- Implemented/created a BGP network from scratch for an ISP over 100+ peers plus a few handful of transit providers. This includes both an IPv4 & IPv6 using Dual stack. Including IP planning, management and assignment.
- Created/design/implemented based on using BGP communities, a routing policy infrastructure for supporting an ISP and it's downstream BGP AS Customers.
- Created and setup customized BGP route-maps as needed to manipulate path attributes and other factors.
- Designed specific announcement rules/configuration of BGP blocks to facilitate Geo redundancy of a multi-located customers.
- Migration of multiple AS networks into one.
- Redistribution skills, specific intended route-leaks into the IGP for better internal route paths.
- Worked with carriers and customers on setting up connectivity & peering.
- Working with IRR's, whoisdb's, working with ARIN to accomplish company goals & the NANOG community.
- Traffic balancing, pattern and flow monitoring, BGP flow balancing (nfsen/cflowd).
- Worked with route reflectors and confederation technology.
- Worked with BGP at a global carrier scale.
- Setup route servers

OSPF

- Implemented OSPF v2 (IPv4) OSPF v3 (IPv6) in the same ISP above. Resolve any issues that arise.
- Implemented OSPF for customer networks.
- Trouble shoot OSPF neighbors and routing issues as needed.
- Customized route distribution.
- Multi-path circuit load balancing

ISIS

- Setup and implemented networks using ISIS.
- Planned out ISIS NSAP address allocation.
- Migrating to ISIS from a OSPF network.
- Trouble shoot ISIS adjacencies and routing issues as needed.

EIGRP

- Setup and implemented networks using EIGRP and circuit balancing.

MPLS

- Setup and configured MPLS using both LDP & MPLS-TE with RSVP. Including using VRF's, VPLS, L2VPN, L3VPN. Implementing FRR/BFD to ensure proper failover when outages occur.
- Understanding of EVPN-PBB and some lite design work.

DATACENTERS

- Installed routers, switches, servers & cabinets as well as running cabling.
- Making coax/CAT5 cabling and general work with fiber & cross over panels.
- Worked with multi-site datacenters, moving services between datacenters.
- Work on Disaster recovery plans and mitigation.
- Design network infrastructure to inter-connect datacenters.
- UPS & datacenter environment monitoring, intrusion detection/alerting & general security.

VOIP

- Designed and built a complete VoIP service infrastructure using open source solutions.
- Built onsite and virtualized PBX's and phone configuration automation tools.
- Extensive SIP/SDP/RTP, codecs, debugging skills using both Wireshark, tcpdump & ngrep.
- Voice quality monitoring & QoS design.
- T.38 and fax setup and interoperability using Adtran, AudioCodes, Hylafax, Asterisk, Carrier Access ADIT channel banks.
- Created Least Cost Routing infrastructure.
- Designed a CDR billing system for the voice infrastructure based on PostgreSQL.
- Emergency call handling and routing.
- SIP vendor interoperability testing and compliance.
- SRV load balancing setup.

UNIX

Years of experience using Linux (CentOS, Debian), FreeBSD, OpenBSD & SunOS/Solaris.

Built many functional services based on UNIX such as:

- Ticketing and customer tracking systems.
- Advanced monitoring and alert notification.
- Traffic graphing
- DNS & DHCP systems
- Web/LAMP servers
- email systems (Sendmail & Postfix), spam filtering & mitigation.
- Calendaring servers
- Database systems using both MySQL/PostgreSQL
- Virtualized PBX & SIP/voice routing systems
- Network config management
- Network traffic flow monitoring
- Centralized syslog systems with notification.
- Public FTP, TFTP & NTP servers
- XMPP & IRC group collaboration servers.
- Secure network access servers
- OpenVPN systems
- Kickstart/PXE system setup servers.
- Ensuring secure systems, and security automation/protection.
- Wrote countless SQL queries and reporting for both in Bash, PHP & Perl.
- Countless bash shell scripts
- Write in both Perl & PHP (learning Python) for shell CLI tools as well as web/db based tools.
- Have dabbled with vHDL on FPGA Xilinx hardware.
- File encryption techniques.
- Setup and lightly used Ansible playbooks to configure network routers.
- Have used CVS & GIT, setup Gitea.
- Written many programs in Python3 that work with API's that help increase work productivity.
- Lately been writing programs in C/C++ in my spare time.

DOCUMENTATION

- Created hundreds of customer network design plans and infrastructure designs using both Visio and Omnigraffle.
- Written countless system builds guides and procedures for error free duplication & system replication.
- Customer/company instructional guides, step by step, training.
- Used multiple types of documenting software such as Confluence, MediaWiki, MS Word & LaTeX.
- Written routing policies and configuration guidelines.
- Setup & maintained IP/VLAN management allocation & documentation.
- Creating standards documents.
- Performing network change peer reviews.
- Working with ITIL requirements.
- Adhering to configuration standards for device consistency across network.
- Utilized creation of "MOP" documents and reviews for implementing network change.
- Worked with JIRA, Remedy, RT and other ticketing/tracking systems.

VIRTUALIZATION

- Worked with VMWare ESXi, building hosts, piping VLANs through the vmware stack, HP blade servers.
- Setup and use KVM on Linux and general administration.
- Setup and used XEN on Linux and general administration.
- Setup and lightly used Docker, built various containers.

WIRELESS

- Experience with multiple types of Access Points and wireless lan protocols using Cisco's Aironet, Aruba, MikroTik products.
- Setup point to point microwave links using Siklu millimeter wave technology and MikroTik wireless gear.
- RF quality monitoring and site surveys
- Wireless security and encryption.

GNU Privacy Guard

gpg --keyserver keys.gnupg.net --recv-keys 0xBB29A64E

My GPG key fingerprint = C97A 3831 18C4 7CC6 9852 CF09 86DD 21FA BB29 A64E