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I have over Ten years experience designing, supporting, and implementing Local & Wide Area Networks using BGP and OSPF, UNIX/Linux Systems, VOIP PBX systems, Microsoft operating environments, wired and wireless communications systems. I have designed and implemented communications facilities, and trained operating personnel for numerous military, law enforcement and emergency management agencies for federal, state, county and local government agencies.

**SECURITY CLEARANCE:** US DOD - Final Secret Clearance.

## **EXPERIENCE**

## Bellcore / Telcordia 7/98-3/04

As a Senior Consultant – Systems Engineering, I was part of the Telcordia Technologies IP Network Architecture and Implementation Group. My responsibilities included IP network design and implementation, physical plant design, network trouble analysis & support as well as developing and managing the IP Network Lab. My consulting engagements included:

- <u>US Army MOSAIC Project</u>: Key member of a team to test and troubleshoot wireless networking equipment and software for U.S. Army project MOSAIC to support "on the ground" mobile equipment moving on, around or through the battlefield maintaining connectivity and QOS with little or no service interruptions. Maintained a number of Linux workstations that supported the mobile IP routing. Wrote many scripts to automate network startup.
- <u>US Army Project E.M.P.R.S.</u>: Designed and implemented wireless IP network for U.S. Army project E.M.P.R.S. (En route Mission Planning and Rehearsal System) to support air to ground and inter-aircraft communications en route to the battlefield. The system used satellite communications (Both 1 way high speed and 2 way low speed), Cisco routers, wireless LAN between aircraft, mapping software, and other software for briefing last minute mission changes. Debugged network problems while in flight on C-130 aircraft.
- Federal Law Enforcement Agency: Planned, implemented, tested and supported a high-availability, scaleable hardware/software system for scheduling members of a federal law enforcement agency in Atlantic City, N.J. Designed a high-availability database using Oracle, Veritas and Sun components. Wrote shell scripts to simplify operations. Redesigned their LAN/WAN to go from single location supporting 50 people to 25+ locations supporting 5000+ people throughout the country using encrypted VPNs etc. Worked with FAA to specify new Power / AC system for server room.
- <u>Broadstream:</u> Implemented wireless LEC/ISP infrastructure in Las Vegas, NV. using Pcomm and Triton 38 GHz equipment, Cisco networking equipment (2621, 2924, 3640, 7204). The network supported customers' internet access, and voice communications. Designed and implemented Network Operations Center systems to support the network.
- R3S (Remote Surveillance Support System): Designed & implemented a demonstration test bed for live
  multi-media surveillance of aircraft or other vehicles, using satellite technology which was shown to the
  Dept of Homeland Security and Secret Service.
- Nap of the Americas: Built, shipped, installed and tested the permanent BGP peering fabric for the NAP of the Americas in Miami, FL. The system is used for a BGP peering point between ISPs using Foundry IP switches. Met with customer to get requirements, Specified equipment, ordered equipment. Coordinated between vendors, contractors to meet the customer requirements. Specified Power and AC requirements for server room, worked with local electrical contractor to implement. Also was involved with the design and implementation of the Network Operations Center.
  - Designed, implemented, deployed, and tested the interim BGP peering fabric for the NAP Of the Americas in Miami, Fl. implemented many of the Network Operations Center systems for supporting the network.
- International Banking (S.W.I.F.T.): Built A prototype to test and validate the targeted architecture using Cisco routers (4500, 4700, 7507) Implemented a test strategy for an IP-based wire transfer network for an S.W.I.F.T. Debugged a 6-area OSPF and BGP network. Authored many test automation and administrative scripts to help standardize test procedures. S.W.I.F.T. is an international interbank financial funds transfer consortium. It supplies secure messaging, interface software and 24-hour global support to over 6,000

financial institutions in 164 countries. The daily value of payments messages on the S.W.I.F.T network is estimated to be above USD 2 trillion. S.W.I.F.T engaged Telcordia Technologies to provide a feasibility study on the use of IP for secure interbank monetary transfers and the integration of Certification Authorities as the basis for security implementation. Telcordia developed functional requirements traceable to customer requirements, business requirements, and service specifications. Telcordia also designed and engineered a secure IP architecture to support communications transferring transactions up to USD 3 Trillion per day.

• <u>Telcordia Lab</u>: Developed and managed the IP Network Lab. Tested leading edge technology combinations, such as Voice Over IP (VOIP) and IPSEC together. Built a mini-ISP with dual-homed upstream providers using Cisco routers & ATM switches, Solaris Internet mail system (SIMS), and Solaris for ISPs. The lab was used to prototype and stage the BGP peering fabric for both the interim and permanent Miami NAP.

## Consultant - Dun & Bradstreet 6/97-7/98:

As a Lab Administrator, I was responsible for lab network design, implementation, debugging & support. My activities included:

- Implemented Shiva Remote Access PRI ISDN utilizing Security Dynamics SecurID and Motorola Bitserver Pro BRI ISDN TA.
- Automated data collection process for an Internet application using UNIX Shell & Pearl Scripts.
- Evaluated various firewall products including TIS Gauntlet & Microsoft Proxy Server
- Implemented Corporate Intranet Facilities for entire department

# Systems Engineer - (Overleaf International) 6/90-5/97:

As a System Engineer, I maintained and administered UNIX Servers, Windows NT Servers, UNIX workstations, Windows 95 / NT Workstations, Local Area Network, and Frame-Relay connection to Internet for Customers & Internally. My activities included:

- Implemented a packet radio communications network using AX.25 protocol to link county Emergency
  Operations Centers with local centers in the county
- Set up UNIX server to forward messages to towns not having packet radio equipment via AT&T MAILFAX
- Designed and gave training to local emergency operations centers in use of network.

## **Hardware:**

802.11a/b/g (D-Link, Orinoco, Linksys, Netgear, Cisco, Amplifiers, Antenna systems, etc.) Sun (Sunfire V880, Sunfire 4800, Sunfire 280R, Netra T1125, 420R, 220R, 280R, Netra T1, Ultra 1,5,10) HP 9000, Security Dynamics SecureID, Cisco Routers, Cisco Aironet, Foundry Networks ServerIron, Foundry Networks NetIron, Foundry Networks FastIron, Shiva Telecommute ISDN PRI HUB, Juniper Routers, Riverstone Routers, Bay Routers, Extreme layer 2/3 switches, Motorola Bitsurfer Pro ISDN TA, AT&T3B

#### **Software:**

HP OpenView, Sun Solaris for ISP's, CiscoWorks, CiscoView, Cisco IOS, Microsoft Windows 3.11 / 95 / 98 / NT / 2000 / XP / 2003, Microsoft Office 97 - XP, HP/UX 9 & 10, Red Hat Linux 7.0 – 9.0, Fedora, Asterisk VOIP PBX, UNIX, Sun Solaris 2.51 – 9, SunOS, DiskSuite, Veritas Foundation Suite, TCP/IP, DNS/BIND, DHCP, SMTP, OSI, ISDN, Microsoft Mail & Exchange, POP, IMAP, SPOP, SIMAP, Courier MTA, Apache, OpenSSL, mod\_frontpage.

## **Other Activities:**

- General Class Amateur Radio Operator
- Emergency Medical Technician (Kendall Park First Aid & Rescue Squad)
- Chief Engineer Spectrum Radio program. Implemented and maintained a broadcast studio for a national talk show broadcasting on WWCR Nashville, TN and C-band satellite.