Bryan Fields
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Objective
Seeking a network architecture position with a company focused on providing highly available network services to their customers.

Summary
RF, IP/MPLS, and SONET Network architect with experience delivering cost effective designs providing highly available network services.
- Cisco CCNP (CSCO11177448)
- Hold a FCC General Radiotelephone Operator License (PG00017573), with RADAR Endorsement
- WiMAX Core Network Engineer Certification
- Harris Microwave Certificate
- iDirect Quality of Service Certification (VSAT technology)
- Architected WiMAX BTS and IP backhaul/core networks for FNC customers
- Designed a robust transport network for Tower Cloud providing TDM and Ethernet to tower sites
- Ability to "hit the ground running" on customer sites and handle out of scope issues

Hardware Skills
- Knowledge of Cisco routing and switching platforms; 800/1800/2800/4000/7600 routers and 2900/3560E/3750/5500/6500 switches
- Engineering of T1/DS3 and optical SONET Networks
- Cisco (Scientific Atlanta) RPR nodes
- Foundry layer 2/3 switching
- Juniper M series routers
- Experience with Cisco Pix and Checkpoint firewall products
- Tellabs IP/MPLS transport nodes
- Optical transport nodes: Ciena, Turin, Adtran 6100, Nortel, Fujitsu
- Covaro/ADVA Optical Etherjack Ethernet Demarc
- 802.11b/g system deployment, utilizing Cisco 350 and 1200 series access points with WLSM
- Alvarion/Fujitsu /Airspan WiMAX BTS/CPE/VoIP adapters/Netspan EMS
- Alcatel/Ceragon/NEC/Dragonwave/Harris PtP Microwave radios
- Orthogon/Motorola PtP microwave radios
- Bridgewave Millimetric wave radios
- Advanced knowledge of Alvarion radio equipment, including board level diagnostics
- Motorola Canopy system design and deployment
- WLAN system design and deployment
- FCC licensing experience/interference analysis (TIA TSB-10F)
- UHF and microwave design circuit design with specialty in medium power amp design
- Inside Plant/Outside Plant wiring standards / Fiber termination and troubleshooting

Software Skills
- Cisco Cat/OS and IOS, extensive experience using RIPv2/EIGRP/OSPF/BGP
- VPN design and advanced routing implementations with IOS
- Network administration and design using Cisco routers and switches under SNMP Monitoring/Rancid
- Network Analysis/Troubleshooting with Ntop and RMON/Netflow
- Radio path/coverage modeling with EDX and Pathloss 4.0
- Cisco Cat/OS and IOS, extensive experience using IS-IS/OSPF/BGP/EIGRP/RIPv2
- Linux, Solaris, HPUX, FreeBSD, OpenBDS
- Circuit Vision and MetaSolv OSS software
- EMS from Cisco/Turin/Ceragon/Ciena/Nortel/Fujitsu
- Alvarion VxWorks OS
- Airspan OS diagnostics
- FreeRadius on Debian
- Asterisk PBX + VoIP SIP Phones, Voice over WiMAX
- Apache, ProFTPd, MySQL, postgreSQL, Interchange, RT/FM, Nagios, Cacti, djbdns/BIND, DHCPD
- Email server deployment with qmail, virtual domains and spamassassin
- Windows Domain Controllers

Employment History

Company Name Withheld
(8/2008-present)
Principle Network Architect

Network Architect on IP wireless backhaul network for national defense communications in Southeast Asia. These networks consisted of radio links over various terrain and water locations in some of the most difficult areas of the world. Over these links was built an IP network using mostly Cisco NE's in a fault tolerant configuration (HSRP was used extensively along with OSPF). Suitable remote enclosures/power systems were specified by myself and all equipment was assembled in the enclosure while state side. A Facilities and Acceptance Test (FAT) was completed to SPAWAR satisfaction.

Through out all this all technical documentation was produced by myself , including site engineering packages, network maps and radio path studies. All radio paths were designed and verified with Pathloss 4.0 to provide 99.999% link availability. In most instances full diversity was necessary, and hot stand by radios were a requirement. I worked with in country tower contractors and site acquisition personnel to ensure proper installation of all microwave composites. I designed full secure remote VPN access into the network for remote monitoring and troubleshooting of radio and IP nodes. This VPN router was connected over a separate VSAT link independent of all other networks.

I was also involved in smaller secure (FIPS-140-2 and DIACAP'd) network designs in NTIA licensed bands. These consisted of secure type 1 wireless links with IP routing nodes in a ring configuration. In most instances this subnetwork would interconnect in a redundant fashion with the local base lan. As the network could potentially carry secret data, security was the principal design requirement, followed by full redundancy of key components. All IP node and routing configuration was designed and configured by myself.

Fujitsu Network Communications Inc.
(1/2008-8/2008)
Network Architect

Core network architect in the WiMAX product services group. Deeply involved with trial and proposal design of WiMAX data networks and initial turn up. Planed whole greenfield networks utilizing software tools in the selection of optimal base station locations. Interlinked base stations for all IP/MPLS based backhaul. This consisted of design with WiMAX base stations, Microwave Backhaul, secure routing/switching design, and enforcing Telco grade installation/maintenance standards. Made extensive use of Pathloss 4.0 and EDX RF planning tools in the planning phase to ensure a 99.999% availability, and to assist with site selection. Made extended site visits during initial turn up to provision and secure customer core network devices.

Planned IP core networks to migrate from 802.16-2004 to 802.16e roaming profile with ASNGW's (future proof). Worked with product support to suggest needed WiMAX BTS features. Involved in looking to more tier 1 deployments for future carrier networks, i.e. LTE. Worked to setup QOS on all NE's to provide "Bell" grade VoIP over WiMAX.

Involved with bringing NOC up to speed monitoring IP based customer gear. FNC NOC was contracted to provide monitoring of customer WiMAX network elements for failure and performance issues. As the only monitoring system Fujitsu had was the Element manager for FNC produced NE's it was necessary to implement a SNMP/log Monitor. Worked closely with NOC supervisor to bring personnel up to speed on requirements for monitoring IP networks vs. traditional SONET. Provided VPN access to these networks for remote NOC monitoring.

Worked and was instrumental in building the wireless integration lab. FNC lacked the lab area to test new designs and mock up customer networks for testing, space was procured and setup for use. This allowed FNC to pre-provision all customer devices for the field deployment and ship a rack fully stacked to customer locations.

Tower Cloud Inc.

<div align="center">(7/2006-12/2008)</div>
<div align="center">RF/IP Network Engineer</div>

Tower Cloud built out large scale metro optical transport networks for cellular carriers. My involvement was across all major engineering areas, RF, IP, SONET, in addition to working with sales and deployment operations.

Primary RF/microwave engineer responsible for network/path design from initial market analysis/research to turn up and testing acceptance. Detailed path design utilizing Pathloss 4.0 software, USGS maps and field data was preformed and used to license the path with frequency coordinators. Engineering packages were developed for field personal use during installation and turn up. Was heavily involved with post install inspection of field work, developed ISP/OSP check lists and structured inspection procedures.

Designed a highly available scalability IP management network enabling visibility of all remote sites to NOC users. Remote user access was provided for users and redundant across multiple sites with per user ACL's to control access to network elements. Scalable IP use scheme was developed with a clear layout for assigning IP's to NE's in each market on bit boundaries. Worked with Circuit Vision to setup redundant GRE over IPSec tunnels to hosted environment for circuit data management. Cacti was setup and configured to monitor all traffic/optical/radio levels and errors on the network.

Worked with multiple vendors in evaluating new TDM and Ethernet transport equipment in a lab environment. IP/MPLS, SONET, and RPR technology from major vendors was evaluated for use in pending deployments. Developed Ethernet test procedure to test equipment for compliance with major cellular carrier's Ethernet standards. Involved NOC personal in testing and commissioning nodes prior to deployment in markets. Installed and configured RT for ticketing of customer issues in NOC and other departments.

Closely worked on SONET/optical design requirements and installation standards. Selected a OSS system for network management from amongst four candidate systems allowing ease of customer and circuit management. Worked with OSP personnel to ensure fiber was spliced identically at each site and level out optical levels post turn up. Developed a custom cable and protection demarc for customer interconnect tie lines, and lacing standard for the same.

Worked closely with sales providing pre-sales information to customers and providing technical information on the proposed back-haul network design. This included "internal" educational training presentations for Tower Cloud employees covering basics of radio, protection mechanisms, and how the SONET network transports back to the MSO.

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Level (3)

(3/2006-11/2006)

RF/IP Network Engineer
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Responsible for engineering and support of wireless IP network covering Orlando and Tampa areas. Implemented a new management scheme for all networking equipment, along with traffic graphing and configuration change control/backups. Worked closely with level 1 support staff in the NOC to resolve complex issues and improve documentation of the network. Revised, updated, and standardized network diagrams in Visio which enabled NOC staff to resolve network issues more efficiently.

Developed a new "green-field" network architecture that would enable high speed DIA and MPLS transport services via wireless last mile. Worked with marketing and management to revise this design and develop a business plan for a role out in the Orlando market. Presented this design to corporate management for review along with a guided tour of the present Orlando network.

Senior engineer involved with modeling and design phase of licensed and unlicensed radio data links for sales team. These designs covered links spanning 30 miles to a ¼ mile and bandwidth ranging from 10-800 Mbits/s. Specified site hardware, worked with tower vendors to determine appropriate antenna support structures for use at fiber nodes, and grounding for equipment. Implemented network upgrades for the Orlando network for increased throughput and brought grounding at these sites up to industry standards.

Worked extensively with a metro mesh network deployment on the engineering and security design. Modeled the Tropos mesh radios in the lab to better engineer our network in the field and quantify the security vulnerabilities of the Tropos equipment. Met with the vendor and had them address these vulnerabilities and mitigated them through firmware upgrades and security polices on routers.

Illiana Internet LLC
(12/2002-2/2006)
RF Engineer/Operations Manager

Designed and implemented a wide area wireless network covering parts Lake, Porter, Newton counties in Indiana, and Kankakee and Will counties in Illinois. Responsible for site selection, deployment, and operational decisions. Managed Day to Day operations, scheduling of customer installs, and logistics/tracking of network equipment inventory. Designed a layer two security model using multiple vlans that allows for routed, and bridged connections which limits unauthorized access and virus traffic.

Designed outdoor links spanning 15 to 20 miles used for high capacity back haul of customer data. Used multiple back haul links to interlink sites in a ring topology, providing automatic fail over and redundancy using EIGRP. Developed and implemented contingency plans ranging from router/switch up to total site failure.

Setup AP's in customer locations to redistribute access to the internal network allowing people to use laptops in the shop and trailers. Setup multiple vlans on an access point bound to different ESSID's to provide access to public and private networks with a single AP. Extensive experience with MAC address ACL's on Cisco IOS based AP's.

Engineered the network to prioritize VoIP frames, and implemented multiple Asterisk PBX servers for linking and control of a voice network. This consisted of custom hardware interface cards in the asterisk server, with custom voice linking hardware.

Urban Communications Inc.
(4/2001-9/2001)

Oversaw the design of wireless IP networks. In charge of installation, and troubleshooting of specialized radio and network equipment. Also performed antenna pattern measurement, and site surveys of prospective subscribers.