JUSTIN T. KNOX, BS, CC, SEC+

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SUMMARY:

• L3 Networking & Systems Engineer with 20 years of experience in the tech industry.
• 10+ years of professional experience in automation, support and development.
• Demonstrated leadership, problem-solving and adaptability with expertise in mentoring, training and project delivery.

EXPERIENCE:

Sr. Cybersecurity Infrastructure Administrator   Sep 2023 - Present

Great Lakes Water Authority, Operational Technology Cybersecurity, Information Systems | Direct-Hire | Onsite to eventual 20% Remote | Detroit, MI

Developed, implemented and maintained the Information, Operational and Networking technologies to ensure and provide the sustained mission of the GLWA's process control network to strive to meet and exceed the guidelines published within the NIST's Cybersecurity Framework.

Skills: JSON · ReST APIs · Powershell · NMap · Metasploit · NIST 800-153 · NIST CSF · Wireshark · tcpdump

Systems Engineer   June 2023 – Sep 2023

Corewell Health, Critical Environment Engineering (CEE) | Contract, MaTech Resources | Onsite to eventual %20 Remote | Grand Rapids, MI

Collaborated with the cross-functional agile train to deploy, provision, and maintain the companies existing and future infrastructure across OSI L1-4.

• Doubled the production compute infrastructure within a 40% faster than estimated delivery time through providing experienced deployment methods using industry best practices.
• Decreased CEE related incidents by 4% through complete audit and documentation overhaul for the East MI region (in progress).
• Saved the company an estimated 8-10 hours / week / person in labor through developing and deploying the "Generate Decom" feature for the internal DC inventory system. (in progress)

Skills: SQL· JavaScript · GitHub· Python · PowerShell · Bash · Splunk · SCADA

Sr. Network Engineer   March 2023 – June 2023

jPeg Design | Research & Development, Deployment, Support & Maintenance| Direct-Hire |100% Onsite | Dundee, MI

Worked in a 3-person team to design, deploy and maintain small to medium business infrastructure.

• Developed the company's first inventory, customer, client and installation databases, effectively eliminating 15 hours / week / user for prior data entry.
• Developed in-house automation software, including password management and deployment monitoring software.

Skills: PostgreSQL · Python · GitHub · Azure PostgreSQL · AWS · GCVE · PowerShell · Bash · MoIP· Cisco CLI

Freelance Technical Consultant, CTO   December 2021 – March 2023

Alchemy Computing, Dumptd | Research & Development, Systems Architecture | Direct-Hire | 100% Remote | Washington DC

Developed and implemented features, coordinating with engineering teams for the prototyping of front end and back-end systems in the creation and deployment of company infrastructure. Primary clients were in the startup space.

Skills: Laravel· Ruby· Ruby-on-Rails· PHP· TomTom API· Google Maps API· Ansible· Docker· Python · GitHub · RedHat KVM· Docker· GCVE · Active Directory· Windows Server 2016· MoIP· VoIP· Cisco CLI· Juniper· pfSense · PlatformIO · JSON · HTML · MySQL· PostgreSQL · OpenBSD · Iptables · Palo Alto Firewalls · RFID · QR-Code Programming

Sr. Infrastructure Operations Engineer, GCVE Tech Lead   December 2018 – December 2021
Google | Engineering Field Services, Server, Network & Hardware Operations Teams | Direct-Hire, Tech-level 3 | Reston, VA

Worked in the L4-5 global EFS team covering all architectures for the entirety of the Google production fleet. Collaborated with a 12-member team to lead projects and teams to deploy, maintain and configure the production infrastructure from Layers 1 – 4 of the OSI model.

 • Provided zero loss to five-9 SLO and SLA during the 400% increase to production load of the Covid-19 outbreak with an 80% reduction in staff.
 • Saved the company an estimated $450k in lost compute time to isolate an issue occurring on the power line which took 8 months to gather the data for conclusive enough evidence to change the design.
 • Led the project team which deployed 1/3 of the GCVE infrastructure in which we were able to complete the project 75% ahead of schedule. All contractors on the team were converted to full time.
 • Built and deployed globally distributable internal systems monitoring, configuring and reporting software to effectively eliminate 80% of my original job functions.
 • Hosted and developed internal "lunch & learns" covering Emacs, Linux and systems internals w/ 12-20 people in recurrent attendance.
• Received 19 Peer Bonuses and 2 Challenge Awards for Hurricane and Pandemic Support

Skills: SQL· GSQL· Kubernetes · CI/CD· HTML· JavaScript· CSS· Bash· C++

Network Operations Technician   July 2017 – December 2018
Switch LTD | Network Operations | Contract to Hire | 100% On-site | Las Vegas, NV

Coordinated with engineering teams to provide infrastructure support.

• Implemented custom programmed outlook filters combined with email lexical analysis to autogenerate tickets based on customer emails saving approximately 65% of time spent answering emails.

Skills: AutoHotkey · BGP · PowerShell · Splunk

Systems Administrator IV   October 2016 – June 2017
Pinnacle Community Services | Information Technology | Direct-Hire | 100% On-site | Las Vegas, NV

Worked in a marketing automation platform organization, assisting businesses of various sizes. Collaborated with a 1,200-person team to improve security and comply with SOC 2 and PCI-DSS. Led projects to strengthen security processes and promote best practices.

 • Developed internal file-share-system and converted over to bring organization into HIPAA compliance.
 • Created Porteus system images to access in-house customer care system from Windows XP machines for approximately 30 remote sites.
 • Secured the companies trunks using IPsec over GRE on Cisco and Avaya infrastructure.
 • Saved the company approximately $80k from unneeded legal hours through conducting an in-house investigation using the Sleuth digital forensics toolkit to procure documents required for discovery.

Skills: Cisco· Avaya· Windows Server 2012· Active Directory· Samba· Kerberos· Porteus Linux· Java· PowerShell · BSD

Technical Specialist II   November 2013 – April 2015
Scientific Games | Technical Documentation and Training | Direct-Hire | 100% On-site | Las Vegas, NV
practices.

 • Brought travel expenditures down by 95% through creating a digital library of in-house training videos through the Casino Laboratory that our team also created.
 • Saved approx. 650 hours / week in labor through consolidating the Geographic Dependent Jurisdiction codes technicians were sourcing in to a single database.

Skills: Microsoft SharePoint· Arch Linux· PHPFM· Memcached· NGINX · Apache· WordPress · Jekyll· Markdown · Yammer

Freelance Technical Consultant   September 2009 – November 2013
Alchemy Computing | Information Technology | Las Vegas, NV
practices.

・Focused specialties included in-home PC Repair, small website development, electronics prototyping.
Skills: C++ · OpenCV · Java · Processing · NodeJS · Bluetooth Protocol · RTSP · MIDI · ClamAV · Malware Removal · Digital Forensics · Data Recovery

Network Event Management Technician III   May 2008 – September 2009
British Telecom| Converged Services Management Center| Contract-to-Hire | 100% On-site | El Segundo CA
Assisted with the internal acquisition of Infonet's global NOC to the UK's infrastructure.
・Kept the UK's network functional through the 2008 Olympic games through acquiring total coverage over the management platform for OSI L1-3 over a Cisco, Juniper, Alcatel-Lucent, Ciena mixed platform.
Skills: MPLS, EIGRP, IGRP, SDH, PDH, ATM Frame-Relay, TCP/IP V4/V6, SIP, ARP, CDP, CARP, EIGRP, OSPF, BGP, VTP, EtherChannel, 802.1Q trunking, QoS, Multicast, 802.11a/b/g/n/ac, IPsec, LDAP, RADIUS/TACACS+, SNMP, NTP, VRF and HTTP/HTTPS

Junior Electronics Engineer   June 2006 – November 2007
Synetcom Digital | Research and Development | Direct-Hire | 100% On-site | El Segundo, CA
Worked in the engineering team developing industrial SCADA radios for monitoring digital IO, 4-20ma sensor loops, PWM, and industrial video applications.
・Provided increased customer acquisition through developing the GUI for the PLC system's first user control panel.
・Prevented external theft of IP through securing the internal LAN communications prior to one particular vendor visit.
Skills: digital IO · Industrial Automation · 4-20ma sensor loops · PWM· Allen Bradley · PLCs · PIC Programming · BASIC Stamp Development · Propeller Chip· FHSS · Antenna Design and Implementation · EagleCAD · EWB · National Instruments · Oscilloscope · Function Generator · Traffic Generators · Standard Laboratory Equipment · Spectrum Analyzer · Embedded Linux · Windows CE · C++ · Ladder Logic

Tutor and Laboratory Technician   March 2004 - June 2006
DeVry University | Network Laboratory | Direct-Hire | 100% On-site | Long Beach, CA
Tutored students in the network security and advanced micro peripheral courses. Focused specialties included:
・Network Design, Engineering & Architecture
・Cisco CLI commands, interfacing and scripting.
・Implementing network configurations with Java
・Network Packet analysis
Skills: C++ · Java · Wireshark · Cisco · Novell · Windows 2000 Networking · RedHat Linux · Gentoo · TCP/IP Packet Optimization

EDUCATION:
University of Tennessee, Knoxville   Knoxville, TN
M.S.C.S. Data Science and Intelligent Systems   PROJECTED December 2025
Thesis: (to be determined)

DeVry University, Long Beach   Long Beach, CA
B.Sc. Full-Time Program, Honors Graduate, GPA: 3.6   March 2008
• Successfully completed thesis project "Fingertip Effects". A machine vision project which tracked LEDs worn on a users hands (in a glove) to generate effects and change the output of music. The Project used a serial link processed by the Motorola HCS12 and a custom protocol I developed to interface with the Analog Device Blackfin DSP which then processed the effects on the music. We were awarded Best Senior Project for the year.
• Associated Student Body President, Spring 2005 – Fall 2005, Spring 2006-Fall 2007

CERTIFICATIONS/PUBLICATIONS/PROFESSIONAL ASSOCIATIONS:

• CISSP / Certified Information Systems Security Professional
International Information System Security Certification Consortium, ISC2, Active as of: February 2024

• SEC+ / Security+
Computing Technology Industry Association, CompTIA, Active as of: December 2023

• CC / Certified in Cybersecurity
International Information System Security Certification Consortium, (ISC)^2, Active as of: September 2022

SKILLS:

• Languages: C, C++, Java, SQL, BASH, LaTeX, YACC, YAML, XML, HTML, CSS, JavaScript, Ruby, Python, Assembly
• Cloud / Server / HyperVisor Operating Systems: Windows 10, Windows 2016, RHEL 7, Linux (VMWare), ESXi, OpenBSD, FreeBSD, NetBSD, Docker, XCP-NG, EVE-NG, VirtualBox
• Windows: Sysinternals, PowerShell, Windows Subsystem for Linux, WMIC, Firewall, and Registry
• Virtualization: ESXi, VMware, VirtualBox, Docker, AWS EC2

PROJECTS:

"Homelab" - FOSS Home Computing
https://sites.google.com/view/justinsdevlab/home
Description:
Fully self-hosted search, DNS, firewall, remote access, file storage, cryptocurrency mining and blockchain hosting.
Technologies used:
SearxNG, dnsmasq, Cisco 1841, Palo-Alto PA-500, OpenVPN, IPSEC, GRE, BGP (dn42), FreeNAS, NFS, Monero, Dash, Litecoin, Ethereum, Bitcoin (miners and full-nodes)

"Cyboard" - Longboard Security System and Datalogger
Description:
Raspberry Pi based "Smart skateboard", with on-device weather detection, key fob to "lock" the board, motion and location detection for "ride-data".
Technologies used:
Python, SQLLite, GPS PA1616S, Raspbian, NeoPixel LED, Remote Control Encoder PT2262, SHT30 Sensor, ADXL343 - Triple-Axis Accelerometer

"Video LAN Checker" - VOIP Security Camera Management
https://github.com/jknoxdev/video-lan-checker
Description:
Scripts to aid the security camera installer, currently scans the network to detect any cameras, shows encrypted traffic status. Draws diagram of connections to router.
Technologies used: LLaMA 7B, ChatGPT, Python, PostgreSQL, SQLite, Azure, GCP, AWS, ARP, DNS, DHCP, RTSP, RTP

VOLUNTEER/LANGUAGES/AWARDS:
- Awards: Best Senior Project 2008.
- Social Languages: (Almost) Conversational in Spanish, Studied Portuguese in Brazil, Serbian in Serbia