

# Justin Knox, CISSP

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## SUMMARY:

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

## EXPERIENCE:

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### IT/OT Infrastructure Administrator, Cyber Security September 2023 - Present

Great Lakes Water Authority, Operational Technology, Cyber & Information Systems Security

Direct-Hire | Onsite to 20% Remote | Detroit, MI

- Extensively used the AWWA, NIST 800-153 & CSF 2.0 frameworks to assist building the departments cyber security infrastructure; laying the foundation for a robust and compliance ready program using an initial qualitative risk assessment, increased monitoring and increasing and encouraging the documentation of testing and deployment activities.
- Utilizing TLS 1.3 and x509 certificates, our team piloted the implementation of DNS for Level 4 and DMZ systems for an increased usage of encryption measured by 10-20%.
- Converged legacy IP address datasets into a singular IP Address Management (IPAM) platform for change management utilizing PostgreSQL, Redis and Jenkins web-based technologies. Tested, deployed and automated server lifecycle management using PowerShell and Bash.
- Developed and implemented internal malware analysis processes, categorization, forensic incident response and handling methods. Built the archival and analytic systems and station image.
- Designed and constructed Change Management systems for Active Directory User Groups and Permissions, with vendor facing Network Change Management system in line with Discretionary Access Control principles.
- Piloted a credential management system, increasing department's password complexity by ~8%.

### Systems Engineer June 2023 – Sep 2023

Corewell Health, Critical Environment Engineering (CEE)

Contract-to-Hire | Ma-Tech Resources | Onsite to %20 Remote | Grand Rapids, MI

- Built and deployed production infrastructure within a 40% faster than estimated delivery time.
- Provided experienced deployment methodologies using industry best practices.

### Network Engineer March 2023 – June 2023

jPeg Design | Research & Development, Deployment, Support & Maintenance

Direct-Hire | 100% Onsite | Dundee, MI

- Deployed layer 1 network infrastructure, security cameras, electronic door strikes, keycard and biometric physical barrier protection devices.
- Developed in-house password management, reports automation and customer deployment monitoring solutions using Python Scapy, Git on a mixed Azure and AWS cloud infrastructure.

### Freelance Technical Consultant, Dumpt'd Startup CTO December 2021 – March 2023

Alchemy Computing, Dumpt'd | Research & Development, Systems Architecture

Multi-Contract | 100% Remote | Washington DC

- Led Start-Up engineering team in the prototyping of Dumpt'd on Laravel, PostgreSQL, in the creation, securing and deployment of company and production infrastructure.

**Operations Engineer II / Data Center Technician III**

December 2018 – December 2021

Google | Network Operations, Hardware Operations, Server Operations, Engineering Field Services, New Product Integration

Direct-Hire | 100% On-site | Charleston, SC; Reston, VA

- Deployed, configured and provided support for every architecture and type of data center connected system within the Google (production and corporate) infrastructure and server fleet.
- Implemented, deployed, and configured IAM and biometric solutions for the Engineering Field Services team, including hand, iris, and fingerprint scanners, as well as RFID, NFC card readers, pin codes, and physical devices. The implementation resulted in an unbroken 5-9 6-sigma record and increased security for all East-Coast 3rd party contractors, visitors, and vendors.
- Provided the physical pen-testing for the datacenter 3rd party environments, including multiple aspects of the environment including fencing, cameras, “server-external” and internal motion detection, with internal cryptographic devices.
- Led the GCVE East-Coast deployment project team; completed the project 75% ahead of schedule.
- Built a repairs automation software using Bash and protocol buffers to automate 80% of server diagnosis, repairs and ticket closure. The software was built and ran on the internal CI/CD platform (Borg / Kubernetes) and when used, measured an 800% decrease in server repair for each geographical region deployed.
- Received 19 Peer Bonuses and 2 Challenge Coins; one for Hurricane Dorian Support and a second for Enduring Pandemic Support.

**Network Operations & Data Center Technician**

July 2017 – December 2018

Switch LTD | Network & Data Center Operations

Contract-to-Hire | TekSystems | 100% On-site | Las Vegas, NV

Worked in one of the largest datacenters on earth, with customer deployments ranging from 1RU to multi-campus WAN networks.

- Provided and conducted routine Security audits, data destruction, ‘rack and stack’ activities for around 2000 customer infrastructure deployments in an ISO 27000, LEED -certified, world-class datacenter.
- Conducted physical deployment pen-testing activities for customer deployments.
- Implemented Power, Thermal, and Network topology audits on hundreds of customer deployments including 1-2RU to Multi-Campus layouts.
- Developed AutoHotKey and PowerShell automation of using lexical analysis to automate ticket handling, saving approximately 65% of time spent.

**Systems Administrator IV**

October 2016 – June 2017

Pinnacle Community Services | Information Technology

Direct-Hire | 100% On-site | Las Vegas, NV

Worked in a two-person team for in-home care provider for over 200 regional sites.

- Using the HIPAA compliance framework, implemented full infrastructure-wide security solutions including firewalls; IPsec tunneling, encrypted (in transit and rest) storage, and State-portal access solutions combining Active Directory, Windows Server 2012, Samba, Porteus, RedHat Linux and BSD in-house developed servers.
- Secured the companies multi-campus trunks using IPsec over GRE on Cisco and Avaya infrastructure.
- Conducted internal digital forensics investigations for Human Resources using the Sleuth toolkit in compliance with all legal statutes.

**Freelance Technical Consultant, DBA Alchemy Computing**

April 2016 – October 2016

Alchemy Computing | Information Technology  
Multi-Contract | 100% On-site | Las Vegas, NV

- Worked primarily with SMBs in the legal and financial fields. Services included expert witness, hourly consulting, data recovery and forensics, full-service in-house IT, Windows Server deployment, Active Directory management, Server-to-cloud virtualization, server migration (Windows to SAMBA), Workstation and phones provisioning (VOIP and mobile), full-stack website development, and electronics monitoring device prototyping.

### **Technical Specialist II**

November 2013 – April 2015

Bally Technologies, Scientific Games | Technical Training and Documentation  
Direct-Hire | 100% On-site | Las Vegas, NV

- Built the Proof of Concept prototype of the company's first internal training web-portal using a triple mem-cached Arch Linux architecture on PHPFM, NGINX, WordPress site.
- Brought travel expenditures down by 95% through creating training videos.
- Through internal metrics our team recorded that the introduction of the videos had saved over 650 labor hours / week

### **Freelance Technical Consultant**

September 2009 – November 2013

Alchemy Computing | Information Technology | Las Vegas, NV

- Focused specialties included small to medium business PC Repair, website development, electronics prototyping, malware removal & data recovery.

### **Network Event Management Technician III**

May 2008 – September 2009

Infonet, British Telecom | Converged Services Management Center  
Contract-to-Hire | TekSystems | 100% On-site | El Segundo CA

Assisted with the internal acquisition of Infonet's global NOC to the UK's infrastructure.

- Provided coverage of the management platform for OSI L1-3 over a Cisco, Juniper, Alcatel-Lucent & Ciena mixed platform.
- With the assistance of the security and network engineering teams, our team built and deployed the system images for the Network Operations Center using security best practices.
- Our team oversaw the conversion and transfer of the previous UK NOC consisting of over 1500 individuals to our team of 500.

### **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 (in-house developed) industrial video, monitoring digital IO, 4-20ma sensor loops, and PWM.

- Secured the internal LAN using IPSEC between machines in a mesh LAN topology.
- Assisted in the development of AES-128 encrypted radio links using FHSS, BASIC Stamp radios built using EagleCAD, EWB, Embedded Linux and Windows CE using C++, and Ladder Logic.

### **Academic Tutor, Faculty Assistant & Lab Technician**

March 2004 - June 2006

DeVry University | Electronics, Network & Development Laboratory  
Direct-Hire | 100% On-site | Long Beach, CA

Tutored students in the network security and advanced micro peripheral courses. Focused specialties included:

- Network & Systems Security
- Linux, MacOS & Operating Systems interfacing.
- Network Packet analysis

### **EDUCATION:**

(IN PROGRESS) M.S.C.S. Data Science and Intelligent Systems  
University of Tennessee, Knoxville

(PROJECTED) December 2025  
(ONLINE) Knoxville, TN

B.Sc. Computer Engineering Technology, Cum Laude, GPA: 3.6  
DeVry University, Long Beach

March 2008  
Long Beach, CA

- Best Senior Project, 2008, "Fingertip Effects". Machine vision Java, C++ & Assembly application.
- Associated Student Body President, Spring 2005 – Fall 2005, Spring 2006-Fall 2007

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## **CERTIFICATIONS/PUBLICATIONS/PROFESSIONAL ASSOCIATIONS:**

CISSP / Certified Information Systems Security Professional  
International Information System Security Certification Consortium, ISC2, Member ID: 954626  
Active as of: March 2024

SEC+ / Security+  
Computing Technology Industry Association, CompTIA, Candidate ID: COMP001022411475  
Active as of: December 2023

ISACA Member  
Information Systems Audit and Control Association, ISACA, Member ID: 2063351  
Active as of: August 2024

Amateur Radio Technician Class License  
Federal Communications Commission, FCC, Callsign: KF8BVZ  
Active as of: July 2024

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## **SKILLS:**

- Languages: C, C++, Java, JavaScript, Shellcode, LaTeX, PowerShell, Ruby, Python, Assembly
- Type I Hypervisors: Hyper-V, KVM, ESXi, BSD
- Type II Hypervisors: Docker, VirtualBox, VMWare
- Cloud Environments: Azure, Google Cloud Platform, Amazon / AWS

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## **PROJECTS:**

"Homelab"

VM Environment on ProxMox, w/ TrueNAS. ~40 VMs for applications testing and development. Windows AD 2019, w/ Self-hosted PiHole DNS, OPNSense (dual) firewalls, w/ Monero full-nodes. No mining (yet).

Machines: Cisco 1841, Palo-Alto PA-500, MacMini, Windows 10 Pro (AD & PowerShell).

"Cyboard" - Longboard Security System and Datalogger

Raspberry Pi "Smart skateboard", with on-device weather detection, key fob, motion and GPS.

Technologies: Python, SQLite, GPS PA1616S, Raspbian, NeoPixel LED, Remote Control Encoder PT2262, SHT30 Sensor, ADXL343 - Triple-Axis Accelerometer

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## **VOLUNTEER/LANGUAGES/AWARDS:**

Languages: Studying Spanish, German (Pre-A1) and Portuguese, Awards: Best Senior Project 2008.