

| CyberSecurity & Product Innovation Director | Enterprise Security Architect | | Secure Product Design Specialist | PKI / Cryptography / Identity SME |

Certified Information Systems Security Professional: • Senior Executive with twenty years' professional experience in Information and Physical Security management, architecture, design, and implementation • Extensive business development, sales, architecture, design, and implementation of enterprise security systems, architectures, and applications. • Proven capability in secure design and development of medical, enterprise, and (IoT) and Cloud-based systems, devices, and applications. • Highly effective translator of technical concepts for non-technical audiences. • Well-versed in government and industry regulatory compliance, including HIPAA, FISMA, GDPR, and CCPA. • Expertise in design, implementation, operation, and management of symmetric crypto and Public Key Infrastructures (PKI) • US Citizen, Public Trust L5 Cleared (2008)

PATENTS: *Securely Distributing Medical Prescriptions* (No. 10623188, USPTO, 14 April 2020; WO EP AU CA CN JP, *pending*)

PROFESSIONAL EXPERIENCE

SENIOR EXECUTIVE

Managing Director, [EPHELIAN, LLC, CURRENT]

US/EU

Leadership, direction, business development, contract negotiation, and contract fulfillment for a small, fast-growing security consulting and secure solutions delivery corporation.

Current project: Security SME and GRC Consultant for a Fortune 500 client on a \$350M customer information systems project.

Special concerns include: compliance with federal, state, and international regulations, including GDPR and CCPA; secure migration to SAP of 70+ dependent applications; review of business processes, functional processes, and technical processes regarding security concerns for new application development; design and implementation of security for a new OpenShift CI/CD platform, and assisting in the development of new Cyber Security standards and procedures. Designed and implemented a PKI-based cryptographic solution for the secure storage of sensitive customer data which was promoted to production early and under budget in substantial part due to the secure design.

Director of Innovation Engineering, [KNOX & ASSOCIATES]

PHOENIX, ARIZONA

Hand-picked by, and reporting directly to, the CEO/owner of the company to lead the Innovation Engineering (R&D) division of the company in new technology and product development, from research and ideation through prototyping and production. Personally vetted by Jeff Fox (CEO of Fox & Co., author of *How to Become a Great Boss*, etc.). Work integrally with the board of Directors to improve the Knox product suite and explore new concepts, markets, and technologies to enhance or replace the current generation of products, with a focus on sales enablement, increased revenue, and future-proofing. Serving also as *de facto* CISO, aided in improving the company's security stance both internally and externally.

- Managed vulnerability assessment of new electronic lock and key system, identifying at least twelve critical vulnerabilities
 - Prevented system from being the subject of a DEFCON talk by enabling Knox to mitigate flaws prior to production
- Re-architected cloud-based security offering, improving reliability, scalability, and security in first month with the company
- Enhanced two product suites to meet customer demand for improved product security, increasing sales revenue dramatically
- Official Knox ambassador to the locksport and information security communities

Director of Global Information Security, [THE DISCOVERY CHANNEL/DISCOVERY COMMUNICATIONS, LLC]

SILVER SPRING, MD

Recruited as first-ever Director of Information Security, to create a seamless domestic Information Security operation, reporting to the Senior Executive Vice President of Operations. Founded Global Information Security (GIS) group, developing strategy for security administration, monitoring, and coordination in seven international regions.

- Implementation and operation of comprehensive vulnerability-management program that eliminated 50,000+ active vulnerabilities, reducing unpatched vulnerabilities by 95% in first three months:
 - Maintained post-implementation average of less than one vulnerability per system company-wide.
- Established and wrote mandatory enterprise information-security training program.
- Managed PCI compliance for all retail and e-commerce operations.

BUSINESS DEVELOPMENT / SALES / SALES ARCHITECTURE & ENGINEERING

Security Business Development Specialist, [WORLDWIDE TECHNOLOGY, INC. (WWT)]

NATIONAL - US / UK

Specially recruited to join an all-star team of select professionals to help grow the nascent WWT security practice from \$20m to \$100 million in revenue in two years. Resident SME in crypto/PKI, Identity and Access Management, and Network Access Control.

- Top annual producer out of 15 team members, with official reports showing 58% (\$29million) of the *overall* team gross profit (GP) revenue responsibility on associated accounts.
- Worked on opening new security opportunities for 26 unique accounts over 11 months.

Consulting Architect, Security Business Development, [ENTERPRISE VISION TECHNOLOGIES, INC.] CHARLOTTE, NC
Sole Business Development Security Architect, working with Regional Sales Manager to generate sales with F10 (Fortune 10) clients for operational, network security, and other services. Duties included working closely with vendor partners to deliver targeted client solutions; presenting concepts and technologies to C-level executives, and writing executive briefs for emerging technologies. Vendor partners include Cisco, F5, Centripetal Networks, ThreatConnect, Invotas, and Neustar.

CRYPTOGRAPHIC KEY MANAGEMENT APPLIANCE PRODUCT DEVELOPMENT

Product Owner / Product Development Manager, [FORNETIX, LLC] ASHBURN, VIRGINIA
Agile development Product Owner and Product Manager for Fornetix' flagship key management appliance (Key Orchestration) and its related products. Collected and analysed customer, market, and engineering input, technical vision, and experience to create product roadmaps. Determined and prioritised feature sets for future development; wrote epics and stories delineating requirements, descriptions, needs, and acceptance criteria; coordinated development dependencies across products; and determined product timelines and release schedules.

- Increased product offering from one flagship product to an eight-product suite within a year.
- Introduced virtual, cloud, and IoT features and offerings to the product suite
- All products were released on or ahead of schedule.
- Invited to join leadership team to help shape company direction and growth.

MEDICAL, IOT, AND CLOUD SECURE PRODUCT DEVELOPMENT

Cybersecurity Architecture Consultant (IoT / Cloud / CE / HIPAA), [FRESENIUS] US / UK / SWITZERLAND / ROMANIA
Contracted to develop, design, architect, integrate, and implement security systems into a new cloud-based medical service and multiple new and existing IoT medical devices. Duties include:

- US/CA/AU/Worldwide patents published and pending for secure delivery system for digital prescriptions
- Cloud architecture, including Compute, SDN, IAM, MFA, and cryptographic subsystems;
- Medical IoT (MIoT) / Healthcare IoT (HCloT) device security design and secure Software Lifecycle integration;
- Asymmetric (PKI) and symmetric cryptography architecture, design, implementation, and integration;
- Logical and security policy, process, and procedure development;
- Security consultation and design assistance for embedded systems development teams;
- Security consultation and design assistance for mobile and desktop app development teams;
- Cloud and device integration design;
- Use cases, risk analysis, and threat model development;
- Secure communications procedure design for cloud, sneakernet, and user interfaces; and
- Ensuring compliance with HIPAA, FDA, and EU CE regulations.

Design and Implementation Consultant / SME, [BARD ACCESS SYSTEMS] SALT LAKE CITY, UTAH
Designed and developed a secure networking laboratory to test wired and wireless compatibility for Class I medical devices. Deployed Windows Server 2012 (Active Directory, NPS, DHCP, DNS, Certificate Services, etc.), Cisco (IOS) and Netgear (DD-WRT) switches and wireless access points, freeRADIUS (Linux), and Windows 7 and Win7 Embedded supplicants connecting via EAP-TLS, PEAP, EAP-MSCHAPv2, and PAP.

CRYPTOGRAPHY AND NETWORK SECURITY ARCHITECTURE

Cryptographic Architecture Consulting SME, [CITRIX SYSTEMS, INC.] SILICON VALLEY (SANTA CLARA, CA)
Project-based staff augmentation SME for securing Authenticode and other code-signing keys for the Citrix enterprise. Led engineer group of selection committee for Hardware Security Modules (HSMs) from Thales and SafeNet.

- Promoted to Lead the second day of the contract.
- Designed and architected fully featured key protection and use mechanism conforming to industry best practices.
- Documented full solution, including architectural blueprint and Key Management Infrastructure and policy texts.

Cloud Security Consulting Architect, [UNITED STATES POSTAL SERVICE (USPS)] WASHINGTON, DC
Security design for an RFP solution for submission to compete for the Federal Cloud Credential Exchange (FCCX). Research solutions included Azure Gov and Amazon Federal AWS and integration federated identity platforms.

- Designed a patentable solution for identity-credential pass-through, keeping identity, destination, and platform information separate, allowing authentication and authorisation through three parties (supplicant, credentialing authority, and relying entity) while maintaining strict user privacy between all parties.

Information Security Architect / NAC Engineer, [UNIVERSITY OF CALIFORNIA (DAVIS) MEDICAL CENTER] SACRAMENTO, CA
Staff augmentation to help strengthen a small InfoSec group, including writing policies, approving network security changes, and leading the Network Access Control effort to implement ForeScout CounterACT.

802.1x and PKI Consulting Architect/SME, [U.S. FOOD AND DRUG ADMINISTRATION] SILVER SPRING, MD
As Cryptography SME for FDA, managed agency's PKI; designed/implemented cryptography-based security solutions. Coordinated re-initialisation of entire Public Key Infrastructure during changeover to new PKI vendor.

- Helped coordinate rollout and operation of new HSPD#12 (PIVcard) badges to FDA workforce.
- Designed new template and enrollment methods for user certificates for PIVcards.

Senior Security Consultant, [LACONIC SECURITY, LLC] BOULDER, CO
Lead architect/engineer for design of Cisco Network Admission Control (NAC) infrastructure for municipal government installation, including 802.1x and cryptographic system design and integration. Conducted network assessment/analysis for optimal architectural configuration/integration.

Senior Social Engineer / Architectural Consultant, [CYBERTRUST, INC.] HERNDON, VA

- Incident response following virus outbreak, rootkit detection/removal and network traffic analysis for major educational and publishing enterprise.
- Security review and risk analysis of new system design for 3-million-user, full-service web-based financial suite. Identified major vulnerability in design stage, sparing company both reputational and monetary risks.

PKI Architect / Information Security Architect, [WACHOVIA BANK] WINSTON-SALEM, NC
Direct report to Senior Vice President of Information Security, designing and implementing enterprise and public-trust PKIs. Designed as combined technical/business solution, both for internal use and for sale to retail and corporate customers. Defined technical direction for PKI and provided input for selection for each component.

- Served on purchasing/licensing negotiations team for PKI components.
 - Saved more than \$15 million in licensing and infrastructure costs through industry contacts and technical knowledge.
- Designed SCIF for housing root and sub-CAs.
- Wireless 802.1x infrastructure security architect; tested/secured wireless network infrastructure.
 - Discovered undocumented flaw in Cisco 802.1x LEAP implementation.
 - Discovered "WAP-gap" vulnerability in Blackberry mobile device infrastructure.

IDENTITY AND ACCESS MANAGEMENT

Enterprise Identity and Access Management Consulting Specialist, [US ENVIRONMENTAL PROTECTION AGENCY] WASHINGTON, DC
Recruited to lead the vendor engagement of the EPA's Enterprise Identity and Access Management project. Responsible for PIV-authentication driver integration for single-token privileged-user and standard-user authentication. Chosen as local SME for LACS and PACS. Successfully defended a bid for Microsoft's Identity Management solution against a competing bid for Oracle's Identity Management solution.

Cisco ISE Engineer / Network Security Consulting Architect, [FOOD AND DRUG ADMINISTRATION (FDA)] SILVER SPRING, MD
Contracted to FDA to co-lead twelve-member team in architecture/design, testing and implementation of NAC and ISE infrastructures for the FDA enterprise wired and wireless networks:

- 15,000+ users in 100+ field offices worldwide, with more than 55,000 registered devices.
- Designed, built, and deployed authentication/authorization solution for EAP-TLS 802.1x for agency-wide wireless.
- Hand-selected by Branch Chief as sole cryptographic SME for the agency.

Identity Management / Cryptographic Specialist, [CONSTELLATION ENERGY GROUP] BALTIMORE, MD
Strategic security infrastructure architect/project manager for strategic security infrastructure projects, including all credentialing and authentication systems within corporate environment.

- Researched solutions to common identity-management problems such as cryptographic access, provisioning, authoritative information sources and credentialing, including smart cards and other token-based authentication.
- Developed 802.1x (EAP) authentication solution for wireless.
- Designed Certificate Authority infrastructure for enterprise use.
- Implemented enterprise-wide Password Self-Service portal, reducing password-reset helpdesk calls by a minimum of 5,000 annually, saving more than \$110,000 per year.

Security Architect / PKI Engineer, [AETNA CORPORATION] MIDDLETOWN, CT
PKI specialist, part of team managing maintenance and upkeep for production PKI environment. Ensured compliance with federal security regulations from Health Care Financing Administration (HCFA) and HIPAA.

- Smart Card team member: Research, design, prototyping and testing for smart card implementation. Evaluated smart card systems for large-scale commercial deployment (up to 5 million customers) and enterprise-wide security enhancement. Feasibility and logistics studies for issuance, revocation and bulk loading of card data.
- Designated as PGP Corporate Decryption and Authenticode keyholder; managed all corporate HSMs.

EDUCATION / CERTIFICATION

- **Certified Information Systems Security Professional (CISSP)** First Awarded: 2004
- Certified Advanced School Resource Officer (Incident Response and Management; De-escalation; and Armed Response) 2018
- University of North Carolina, Charlotte: International Business and foreign-language courses 2002