**Thomas Munn**

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**Cloud Security Architect**

*Secure Micro-Service Ecosystems, IOT, Cloud Infrastructure*

I have helped companies attack modern Kubernetes container problems in AWS. I bring an out-of-the-box creative and technically sound perspective to my clients. I serve as their guide, explaining difficult technical problems clearly. I help them make the best choices based upon their needs.

***Areas of Expertise***

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| *Focus Areas* | *Skill Areas* |
| * Compliance and Audit * Cyber Forensics | * Secure Micro-Services * IOT Security Architecture |

***Technical***

* OS and Languages: OpenWRT, Windows server 2016, FreeBSD, Linux Variants (RedHat, Debian), TwistLock, Bash, Ansible, PowerShell, Kubernetes (version 1.12) bare metal
* Cloud Technology: Amazon Web Services, Azure Ad infrastructure, Azure Sphere, Kubernetes, Docker, Prometheus, Vagrant, ElasticSearch, Kibana, Notary, Kubernetes
* IOT: OpenWrt, Arm Processors, Secure Boot, Image Provenance, Docker, Linux Containers, PKI
* Technologies: Ansible, Palo Alto, Gitlab, OpenScap, Azure Sphere, Active Directory 2fa, PrimeKey PKI appliance, TrustZone, TPM 2.0, Intel TXT, Selinux, Secure Boot, Trusted Boot, Artifactory, TerraForm, Imperva WAF, F5 ASM WAF

***Professional Experience***

**Xylem Inc, Durham, North Carolina May 2018—Present**

***Senior SecDevOps Engineer***   
Secured Amazon Web Services accounts for meter billing applications. This included installing twistlock, performing network analysis, developing secure VPN / management domain, developing secure container pipeline, as well as advising on GDPR compliance.

*Selected Achievements:*

* Installed and configured a twistlock secure pipeline for container management and trust provenance within a Kubernetes cluster. This enabled my client to see at a glance which container images had vulnerabilities, and how to remediate them. It also integrated with the Jenkins pipeline to scan images are they came off the pipeline. I helped them to achieve a complete vulnerability life-cycle.
* Developed prototype secure management domain model for amazon web services including secure VPN access, and secure access to multiple accounts using native Aws features (vpc peering and route53).
* Analyzed VPC flow logs to help tie down any/any access control lists and security groups.

**Cree Incorporated, Durham, North Carolina July 2016 to May 2018**

***Principal IOT Security Researcher***   
Develop new IOT security product. This included cloud, on-prem, and device security. Also developed secure development pipeline for device and cloud asset updating, and developed a signed OpenWrt image for final release to manufacturing. Evaluated multiple IOT infrastructure (ThingWorx, Microsoft Azure IOT, Renesys) platforms.

*Selected Achievements:*

* Crafted a hybrid IOT infrastructure that delivered micro-services to customers. The solution including research, documentation, testing, and final deployment including the development of a custom Secure RedHat OS on Hyper-V. This served as the template for final VM introduction to the Azure Marketplace. Combined both Unix (Ansible) and Windows (azure cli) tools to automate this process.
* Developed secure PKI implementation which combined security with functionality. We used RSA keys with a hardware anchor of trust to make security based upon physical characteristics of IOT devices. This made data opaque to adversaries, and complied with local and international laws.

**SAS, Cary, North Carolina Dec 2015 to May 2016**

***Senior Security Architect***   
Provide security architectural, design and development expertise for SAS startup developing a Big Data security analytics platform.

*Selected Achievements:*

* Defined the target architecture, roadmap and principles for client solution deployments.
* Full life cycle solution delivery and executive advisory. This includes strategy, roadmap, assessments and discovery, design, architecture and solution delivery.

**Verizon, Cary, North Carolina July 2008 to Dec 2015**

***Principal Security Consultant***   
Designed and implemented cloud security solutions. Developed reference architectures. Defined application migration strategies.

*Selected Achievements:*

* Developed and delivered a hybrid cloud solution for a Fortune 100 financial services client using Mashery, IBM Datapower and F5 technologies. Impact: Enabled multi-bank financial transactions for over 10,000 mobile clients.
* Architected, designed and delivered a PCI solution for a Fortune 100 financial client using HPE’s Voltage tokenization platform. Impact: Client passed PCI audit.
* Architected, designed, and delivered a highly resilient EDI platform using IBM API gateway technology. Impact: Enabled a 21.7 billion dollar merger and acquisition of two Fortune 100 financial clients.

***Education and Certifications***

* Bachelor of Science (BS), Information Security, DeVry University, expected graduation 2022
* Certified Information Systems Security Professional (CISSP)
* ITIL V3 certified

***Groups and Associations***

* Active Member – ISC2
* Active Member – Triangle Devops Meetup
* Attended: 2018 Linux Embedded Security Conference