Louis Kowolowski

Curriculum Vitæ

Technology Leader

I like to solve large and complex problems through quick iteration and continuous improvement. I identify the goal, choose a step along the way, and then improve the solution. I'm a technology leader with over 20 years experience with UNIX, Security, and Networking. I manage globally distributed teams and build relationships, which improves productivity and efficiency between teams.

Houston, TX
+1 (541) 690-8649
louisk@cryptomonkeys.com
https://www.cryptomonkeys.com

Education

2000 – 2004 **BS in Computer Security and Information Assurance**
Computer Science
Southern Oregon University

Work Experience

Sr. Site Reliability Engineer at FlightAware, LLC February 2021 – Present

Summary: Managed all aspects of the network: routing, switching, security, VPN tunnels

- Re-architect parts of the network to include redundant, secure private wave service between sites to enhance reliability, and reduce monthly bandwidth costs.
- Network automation utilizing Python and Juniper's PyEZ. Automating things like config snippet deployment, address-book management, and dynamic prefix-list maintenance.
- Develop templates for easier device deployment conforming to vendor best practices.
- Develop automation to assist with deployment of network devices to automatically add them to a TIG stack and Rancid monitoring when they're provisioned.

Keywords: Force10, Juniper, LACP, STP, VRRP, BGP, IPSec, BFD, sFlow, IPv6, Python

Site Reliability Engineer at FlightAware, LLC February 2016 – February 2021

Summary: Managed all aspects of the network: routing, switching, security, VPN tunnels, Wi-Fi

- Served as mentor for new-hires. This typically is a 4-6mo process ranging from side-by-side teaching to more hands-off oversight of project work. At the end, it's expected that the new-hire will be a productive member of the team and be ready (or nearly ready) for on-call duty.
- Initiated weekly team meetings to document operations tasks, processes, SLAs (both internal and external), and internal systems to streamline on-boarding of new employees, reducing the long tail on making people productive from 1yr+ to 3mo.
- Taught multi-month network training course for coworkers. Covering Layer 1 through Layer 4 including basics of each layer, and common protocols in use. How the protocols work, and collecting and analyzing packet captures. Provided ongoing knowledge share with coworkers on Juniper, Force10 and network skills ranging from firewall policy to more nuanced things such as a checklist of items to help determine where network failure is occurring between sites connected over the internet.
- Project lead for increasing site-2-site network performance. Spent several months analyzing traffic patterns between hosts that were deemed "slow". Utilizing tcpdump, I could see problems such as TCP window scaling, or TCP resends. Tuning the network stack on the hosts (such as TCP send/receive buffers) lead to significant performance increases. In some cases, as much as 300-500%. This allowed database streaming replication to catch up faster from outages, reducing the RPO/RTO.
- Project lead for transitioning Data Center routing from static to BGP routing. This took about a month to plan out, test and execute, and required coordination with both internal and external customers, in addition to the service provider. No outage observed
- Project lead for transitioning Data Centers to Juniper SRX devices. In addition to setting up new devices, this entailed unwinding a long list of dependencies with both servers and devices having non-redundant connections, making them redundant, and finally adjusting TCAM on routers to hold additional routes for the new path. This allowed us to migrate a single network at a time to the new devices, ensuring correct functionality with out endangering production data or customers. This project took almost a year, but when we finished, performance had increased 3,000% (300Mbit to 10Gbit), all internal network paths were fault tolerant, and all physical hosts network connections were fault tolerant.
- Project lead for ingesting new data feeds for the Aireon space-based ADS-B project. This project took a year to work through setting up dev/test IPSec connections/servers, and once we finished the PoC, setting up multiple redundant IPSec tunnels with a partner, and creation of redundant servers to ingest and process additional data feeds.
- Project lead for migrating site-2-site traffic onto private links, removing/minimizing overage costs for bandwidth at multiple locations. No outage observed.

Keywords: Force10, Juniper, LACP, STP, VRRP, BGP, IPSec, BFD, sFlow, IPv6

VP Technical Operations at Silent Circle, AG February 2013 – April 2015

Summary: Lead the operational company vision of a privacy-friendly information service. Managed 4 globally distributed teams consisting of 12 people:
IT/Operations

- Increased customer privacy by creating new Data Center locations in Switzerland, where they have the strongest privacy laws in the world.
- Facilitated the migration to a modern Data Center architecture which reduced the dependence on any single piece of hardware; making maintenance both less time consuming and less impactful to production systems.
- Primary point of contact for all issues relating to production and engineering systems.

Release Engineering

- Managed Release Engineering on creation and management of infrastructure related to software product builds and releases to mobile app stores for Apple, Google, and Baidu.
- Oversaw source code audits, releases, and binary analysis by 3rd party vendors.
- Created an engineering lab that was physically disconnected from production resources, allowing development to be able to create and test without affecting production.

Quality Assurance

- Part of the decision-making team with the CTO and VP of Engineering, that defined policy which placed QA in a decision making role for software releases.
- Provided daily operational review and quality control for voice and text services.

IT Helpdesk

- Initiated the collection and organization of asset related information
- Created and implemented procurement process and policy.
- Oversaw the day-to-day activities of supporting headquarters and regional offices.
- Initiated the formalization of on and off-boarding for employees and contractors, including equipment and software training.

Architect / Network Engineer at Silent Circle, LLC July 2012 – February 2013

Summary: Architected and deployed a secure network spanning multiple continents to facilitate end-to-end encrypted VoIP, text messaging, and email.

- Directly managed and maintained the company?s data centers consisting of network routers, firewalls, and switches using both IPv4 and IPv6 for production and development/testing.
- Deployed alerting and trending for metric collection and analysis to facilitate capacity planning.
- Advised server team on architecture and best practices.

Keywords: Brocade, Juniper, IPv4, IPv6, BGP, LACP, STP, IPSec, S/RTP, SIP

Sr. Lab Systems Engineer at Symantec Corp. September 2007 – June 2012

Summary: Managed all infrastructure and assets for the Encryption group's engineering and QA labs.

- Supported over 500 RHEL/CentOS systems for both engineering and QA ranging from development, testing, Release Engineering, utilizing infrastructure such as DHCP, DNS, switches, and routers. Deployed IPv6 to enable Engineering and QA to develop and test products in a dual-stack environment.
- Enabled engineering and QA spread across India and the US to work efficiently with the same resources. Re-architected the lab network and VMware Virtual Lab Manager with 10G Ethernet and Juniper Q-Fabric to better cope with increased scalability demands of both the front end ESXi servers and the backend EMC Clariion SAN. Architected and deployed backups for all critical resources in the lab environment both physical and virtual.
- Integrated 2 engineering teams lab infrastructures, ensuring no loss of data, downtime or functionality. Ensured a successful move to the new HQ building, bringing up all critical services on time.

Keywords: Cisco, Juniper, VMware, EMC, Linux, Fiber Channel, QFX, Q-Fabric, IPv6, DNS, DHCP, STP

Sr. Lab Systems Engineer at PGP Corp. September 2007 – June 2010

Summary: Managed all infrastructure and assets in the Engineering and QA labs.

- Managed all engineering infrastructure, backups, monitoring and trending and defined SLAs for the various classes for all of the engineering infrastructure. Handled all purchasing for engineering dept.
- Replaced an aging VMware Lab Manager installation (ESX/ESXi and SAN) providing performance improvements of up to 500%. Decreased build times and increased the number of simultaneous builds that could be run by moving all build infrastructure to ESX and a Fibre Channel SAN.
- Oversaw the successful move of all engineering resources to new HQ building 30% ahead of schedule.

Keywords: Cisco, VMware, EMC, Linux, Fiber Channel, ESX, STP

Sr. UNIX Systems Administrator at Trend Micro Inc. September 2006 – September 2007

Summary: Managed and maintained the network and server infrastructure supporting the Mail Abuse Prevention System (MAPS) / Realtime Blackhole List (RBL).

- Taught a four (4) week training course for Level1 and Level2 internal support, on building, upgrading and supporting FreeBSD systems.
- Oversaw successful move of all Support, Development, and Operations resources to a new HQ building.
- Infrastructure included Cisco routers/switches, FreeBSD machines including DNS, mail scanners, databases, centralized authentication, web services, and revision control.
- Investigated performance bottlenecks in FreeBSD and custom applications, and worked with Development to optimize code and SQL queries.
- Deployed applications and operating system patches and upgrades

Keywords: Cisco, FreeBSD, DNS, DHCP, Kerberos, PostgreSQL, SMTP, STP, BGP, Etherchannel

Systems Administrator at Web Ring Inc. August 2005 – August 2006

Summary: Acted in DevOps capacity doing both light-weight development and system administration.

- Wrote a Perl DBI abstraction layer/API and conversion script to migrate the backend user information store from flat-file to an SQL database.
- Implemented monitoring and configuration management to help track source code changes. Setup and managed all IT infrastructure

Keywords: Linux, Automation, CFEngine, Perl, SQL

Research Lab Manager at Southern Oregon University September 2002 – September 2005

Sumary: Manage all research lab assets and infrastructure.

- Designed, implemented and managed an enterprise level network with IPv6 connectivity via tunnel to the 6bone network so that the networking classes could learn about IPv6 in a pseudo- real-world scenario. Setup infrastructure to handle project management tools, student projects, and faculty research with a focus on security and networking.
- Managed a lab of dual boot Linux and Windows boxes, used for course work and student workstations for network and security modeling.
- Deployed a 22 node Solaris cluster for parallel computation and distributed computing classes.
- Part of a group who presented a HIPAA compliant communications project to Swan Island Networks. I served as systems engineer for the integration portion of the project.

Keywords: Cisco, PIX, Sun Solaris, Linux, OSPF, IPv4, IPv6, STP, Automation, CFEngine, HIPAA

Awards / Certifications / Misc.

2015 **Oregon Notary**
Commission: 944365 Expiration: 2019

2010 **IPv6 Certification – Sage Level**
Hurricane Electric

2008 **PGP Certified Technician**
PGP Corp.

1993 **Eagle Scout**
Troop 27

Please refer to my Linkedin profile for a more complete list of work experiences along with recommendations.