Vincent Dagonneau, Senior Linux Engineer

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Linux enthusiast working at the intersection of Development, Security and System Administration. Over the years I acquired deep knowledge both in low-level development and Linux kernel internals. I have a proven track record in working well with others both as a leader, as a tech mentor and as an individual contributor.

WORK EXPERIENCE

French Embassy in the US **Sep. 2021 – Present**
Deputy Head of Regional IT *Washington, DC, USA*

- Lead a team of 10 IT specialists across France's 11 consulates and 3 embassies in North America
- Mission: Administrating & securing the diplomatic network (firewall, security and network devices, servers)
- Played technical leader role for the area to deliver on team's reliability commitments
- Established rigorous processes to ensure service resilience and continuously improving quality
- Developed talent and grew my team into a high-performing healthy organization

Hardware & Software Security Lab @ ANSSI (French National Cybersecurity Agency) **Sep. 2018 – Sep. 2021**
Linux Security Expert *Paris, France*

- In-house expert on security of orchestration platforms (Kubernetes, LXD, docker)
- Mission: Remain at the bleeding edge of France's cybersecurity expertise and contribute to setting France's national cybersecurity standards
- Lead expert/technical reviewer of multiple of the agency's guides, see official guide contributions
- Expertise on Linux low-level containerization primitives (namespaces, cgroups, seccomp, eBPF)
- Provided code-review and brainstorming on the Landlock project, especially in the early phases when it was based on unprivileged eBPF (https://lwn.net/Articles/859908/). Very similar to the later work by Google's KRSI.
- Research into bringing unprivileged sandboxing (unveil/pledge) to Linux with project SCEP
- Research into using eBPF for security monitoring. In particular, detecting patterns of Meltdown/Spectre exploitation. Daemon written in go.

Operations Directorate @ ANSSI (French National Cybersecurity Agency) **Mar. 2016 – Sep. 2018**
Lead DevOps Engineer *Paris, France*

- Mission: Provide, secure and maintain the infrastructure for France's cybersecurity agency
- Troubleshooting of large (PB+) Ceph clusters going all the way down to the kernel (using ftrace, BPF).
- Administration and configuration of Airflow to feed a data pipeline.
- Managed the observability through custom deployments of Prometheus + Grafana.
- Design of system hardening (Linux kernel configuration, LXC containers, etc, ...) for production systems
- Design+implementation of a network diode software in Rust for Gbps transfers over physical one-way links

French Foreign Ministry **Apr. 2012 – Mar. 2016**
DevOps Engineer *Paris, France*

- Mission: Secure and maintain France's diplomatic communication network
- Lead DevOps engineer for the French 'cable' system: ~100 servers on a VMWare private cloud
- Designed and implemented several architectural changes allowing a 20% increase in overall performance

EDAP-TMS **Sep. 2010 - Apr. 2012**
Systems Administrator *Lyon, France*

- Mission: Maintain the Information System of a NASDAQ-listed high-tech medical company

EDUCATION

Université Claude Bernard Lyon 1 **Sep. 2007 - Sep. 2011**
BSc. Computer Science - Systems Administration and Development *Lyon, France*

PROJECTS

Kernel development: SCEP – C @ https://github.com/ANSSI-FR/scep
Linux security module to restrict processes according to implicit relationships. Based on prior art from Linux-VServer.

System development: Lidi – Rust @ https://github.com/ANSSI-FR/lidi
Software network diode to manage fast (1Gbps) transfers over a one-way link.

System development: microvmgen @ https://github.com/vdagonneau/microvmgen
Project to generate a disk image for a minimal system based on the Linux hardened kernel, systemd and minimal busybox utilities. Under the hood, it uses buildroot and locks itself down using secure boot auto-enrollment.

OPEN SOURCE CONTRIBUTIONS

Linux Kernel
LKML: Adding stdint.h to the nolibc test subproject

systemd
PR#20255: adding Secure Boot auto-enrollment to systemd-boot
Spoke at Linux Plumbers Conference 2022: on youtube

Rust, Nix crate
PR#1016: adding inotify bindings

OFFICIAL GUIDES

These guides represent France's official stance and are used as the standard for government and critical infrastructure procurement.

I was the main writer for several chapters in each and main reviewer for the rest.

- Security recommendations for docker containers deployment (in French)
- Security recommendations for GNU Linux systems (in English)
- Security recommendations for SSH (upcoming, should be released in the next few months)

SKILLS

Linux Kernel; systemd; git; ElasticSearch; Splunk; GitLab;
C; Go; Rust; Python; Bash;
OpenBSD; Debian; Red Hat; Ubuntu; Proxmox; PfSense;
LXD; Docker; Podman; Kubernetes; Apache Airflow; Grafana; Prometheus
KVM; NFS; CFS;
Ansible; Chef; Puppet;
LDAP; Kerberos; DNS; DHCP; IPv4; IPv6; Wireguard; IPsec; VPN;