Jérôme Vizcaino

Senior Software Engineer

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Online resume

Experience

Datadog — *Senior Software Engineer* — *Paris, April 2020 - Present*

Support and improve existing stack

- Stabilize legacy events **intake pipeline** and **indexing backend**, composed of a **Kafka** consumer written in **Go**, and a large **Elasticsearch** cluster (300+ nodes, ~50k docs/sec indexing rate, ~1k/sec query rate): identify product constraints, develop a **custom controller** to manage indices and settings, with extra tooling to operate the clusters (Go, Python).
- Improve **scalability** and reduced **maintenance cost** of internal Alerting results historical storage (**Elasticsearch**, **object storage** backend, +80k docs/sec, AWS, GCP and Azure support)
- Reduce **on-call fatigue** for Alerting folks, by redefining **platform SLI** granularity and **onboarding** 8 product teams to the new model.

Develop product features

- Lower onboarding time for new Alerting products, **merging 13 data models** into a **single generic and extensible** model (Protobuf, 10 apps from 3 teams).
- Increase **resiliency** of Alerting product to lag in the data intake pipelines: **redesign scheduling engine** to support new model (Go, code refactoring, TDD).

Mentoring

- Provide code contributions and reviews **best practices** (software design, effective PR reviews), **pair programming**.
- Onboard Senior software engineer to Go language.

Datadog — *Core Interviewer* — *Paris, January 2018 - Present*

- Run **coding and design interviews** (1-2 per week).
- Mentoring: contributed to learning material, taking part in **shadow and feedback process** for new interviewers.

Datadog — *Site Reliability Engineer* — *Paris, April 2017 - April 2020*

Improve reliability

- Contribute to **infrastructure-as-code** improvements, further embracing **Terraform** for **AWS** resources and Packer for machine images. Develop a **custom templating tool**, to circumvent Terraform 0.10 limitations (used by ~200 devs, written in Python).
- Run **game-days** with devs: identify error patterns before they occur in production (**chaos engineering**).

Enable Kubernetes migration for teams

- Develop a **custom Kubernetes controller** for statically sharded deployments (**Go**, using *controller-runtime*). Used by 14 applications, from 8 different teams. Biggest sharded deployment supporting 500 shards.
- Help developers migrate their applications: Helm charts authoring, deployment strategies, ...

Ministère de la Défense — *Senior Software Engineer* — *Paris, January 2010 - April 2017*

Support DSP engineers in writing C++ multithreaded applications

- **Design, develop, document and support** a **C++ framework** for **multithreaded**, **realtime data processing** applications (C++, CMake, Doxygen).
- Dynamic flow-based programming: processing pipeline is represented by a graph of blocks connected together.
- Core engine leveraging **asynchronous, event-based** programming (Qt event-loop), as well as a block scheduler using a **thread-per-core** model.

Develop signal collector and processing solution

- End-to-end solution for radio signal digitization, dispatching and processing running 4 Debian boxes.
- Solution included custom PCIe board handling, responsible for digitizing signal and broadcasting samples using multicast UDP groups (4 Gb/s total), **resource management** and **data processing** using the in-house C++ framework described below, as well as a realtime monitoring interface created with AngularJS.

Education

ESIEE Paris — *2004*
Master's degree in computer science

AWS Day — *2015*
AWS introduction and best-practices

3COM network switches — *2008*
Network protocols and switches configuration

Linux Kernel Drivers — *2007*
Linux kernel driver development

Cryptography and security — *2005*
Cryptographic theory and security application

Skills

Languages

- Go
- Python
- C++

Env/tools

- Linux (Debian, Ubuntu)
- AWS, GCP
- Kubernetes, Docker, Helm
- Terraform
- Git, Github

Foreign languages

English
Full professional proficiency
CEFR: C2

Spanish
Elementary proficiency

Misc.

Daily reading

- LWN
- Phoronix
- Martin Fowler
- High Scalability
- Blogs: Golang News, Kubernetes Weekly, Rust

Personal projects

- Electrical current telemetry at home: Go program decoding frames read from consumer unit, storing them in InfluxDB. User interface showing graphs with Grafana.
- Home services deployed in a small Nomad cluster, with Traefik for routing, HTTPS certs renewal.

Security clearance
Secret Défense (Top Secret)

Licenses
Car, motorcycle, boat

Hobbies

- Drummer (15 years, multiple bands)
- Canyoneering association leader (5 years)
- Rock climbing (15 years)

Renew developer environment (~100 users)

- Deploy infrastructure core services on bare-metal with CoreOS, Kubernetes + Docker (PowerDNS, DHCP, Ceph, Openstack, MariaDB/Galera, RabbitMQ, Puppet, Foreman).
- Run end-user services using Openstack KVM virtual machines, managed by Puppet.
- Install and configure developer workstations running Debian, using Foreman and Puppet.

Manage Debian repositories and streamline package building

- Enable ~50 developers building Debian packages in a reproducible way (NodeJS micro-services, Python Celery, RabbitMQ).
- Open internal Debian repositories management to devs and ops teams, using a CLI supported by a REST service written in Python3, featuring safe package import with dependencies resolution.

MINISTÈRE DE LA DÉFENSE *Software Engineer*

Paris, January 2004 - January 2010

Develop software support for custom hardware

- Develop, run and operate a realtime data processing service targeting custom hardware (~300 node cluster, Debian, C++, Qt4 event loop).
- Develop IDE for crypto-mathematicians developing and debugging algorithms targeting an in-house RISC processor, by interfacing with processor software emulator (C++ library, Qt4 UI).
- Add support for custom PCI board in Linux 2.6 (char driver, userspace library, C).
- Automate unattended Debian systems installation, and extend it to provide hardware testing before deployment.