

Pierre Besson

Full-Stack and Dev-Ops Software engineer

Software Engineering Skills

Development

Back-end development	Java, Spring, Spring Boot, Spring Cloud, JUnit, Mockito, Node.JS
Front-end development	JavaScript/Typescript, Angular, React, JQuery, Bootstrap, HTML, CSS, Webpack, Jest
Data persistence	SQL (MySQL, PostgreSQL), JDBC, Hibernate, Spring Data, Cassandra
Tooling	Maven, Gradle, NPM, IntelliJ, JHipster
Distributed systems	REST, SOAP, Websocket, GRPC, Kafka

Operations

Containers	Docker, Kubernetes, Istio
System administration	Linux, Bash, SystemD, Terraform, Ansible
Cloud	AWS, GCP, Digital Ocean
CI/CD	Jenkins, Gitlab CI, Github Action
Monitoring	Prometheus, Alertmanager, ELK, Loki, Grafana
Security	Hashicorp Vault, Cloud IAM, LetsEncrypt, Yubico

Blockchain

Protocols	Polkadot / Substrate, Ethereum	Libraries	Polkadot.js, Ethers.js, Web3j
Clients	Polkadot, Substrate-based blockchains, Ethereum, OpenEthereum, Hyperledger Besu		

Professional Experience

Independent Software Consultant

Nov 2020 - Present **DevOps Engineer**, *Parity Technologies*, Remote, Blockchain operations.

Day to day tasks :

- Operate and monitor public and test nodes of the Polkadot and Kusama blockchains as well as parachains (eg. Statemint)
- Operate and monitor private Ethereum nodes in fully managed networks
- Deploy and monitor internal software and tools and CI/CD automation leveraging technologies such as Kubernetes, Terraform and Hashicorp Vault
- Develop custom tooling and strategies for the successful operations of blockchain nodes

Significant contributions :

- Lead the Testnet team responsible for operating Parity's public-facing (Westend, Rococo) as well as internal Polkadot test networks
- Designed a Kubernetes based deployment of Polkadot testnets in order to scale it to 1000 validators
- Overhauled the AWS infrastructure of a private Ethereum network operated on behalf of the United Nations World Food Programme (Building Blocks project)
- Successfully migrated a production Ethereum blockchain to new infrastructure
- Implemented a blockchain disaster recovery process
- Migrated blockchain nodes from VM-based to Kubernetes-based deployments

March 2021 - **DevOps Engineer**, *Ternoa*, Remote, Blockchain operations.

July 2021 **Day to day tasks :**

- Design and operate the cloud infrastructure for the launch of the Ternoa blockchain (Substrate-based)
- Develop an Infrastructure as Code Continuous Delivery pipeline to update and scale the blockchain nodes

Significant contributions :

- Implemented a promotion process, to confidently validate and deploy Substrate blockchain client and runtime upgrades from staging to production environments

Liquidshare

June 2019 - **Site Reliability Engineer**, *Liquidshare*, Paris, Blockchain-based platform operations.

October 2020 **Day to day tasks :**

- Manage the Liquidshare platform running on cloud providers (AWS, GCP) using Terraform including cloud managed networks (VPC), container orchestrator (Kubernetes), service mesh (Istio), database (PostgreSQL), message queue (Kafka).
- Manage the CI/CD infrastructure : Gitlab, Jenkins, Nexus, Build runners
- Develop custom tooling for continuous deployment using Kotlin, Go and Python
- Maintain the individual deployment pipelines for over 20 java based microservices and several UIs deployed in Kubernetes over 4 environments (dev, qa, uat and prod).
- Manage the operations of a blockchain cluster based on Hyperledger Besu.
- Implement security best practices including secret management (Vault), encryption at rest and in transit, vulnerability scanning, policies enforcement and firewalls.
- Handle production incidents.

Significant contributions :

- Developed a CI/CD pipeline for solidity smart contracts deployments and upgrade (node.js, openzeppelin, Gitlab CI)
- Developed a fully automated hotfix process utilizing webhooks and deployment pipelines to help developers go from a JIRA ticket to the safe deploy of a hotfix code patch in production.
- Deployed a production Hashicorp Vault cluster to GCP following best practices and implemented a secure set of Vault policies suitable for Liquidshare use of the tool (secret management, transit encryption).
- Deployed a monitoring infrastructure using Prometheus, Alertmanager and Grafana to monitor blockchain nodes.

Consulting work for Ippon Technologies

May 2018 - **Full-stack developer**, *Renault Digital*, Microservice architecture and AWS.

May 2019 Development of a car configurator platform (back-end + front-end) for use on the car maker main website for the following brands: Renault, Dacia and Alpine.

- Development of Spring Boot back-end microservices to expose a simple car configuration API from the aggregation of various internal APIs
- Development of a React front-end using our APIs and integrated with the AEM (Adobe Experience Manager) CMS.
- Development of AWS Lambda functions to carry out batch processing workloads

- July 2017 - **Full-stack developer**, *Tessi Document Services*, JHipster microservice architecture.
- May 2018 Development, deployment and supervision on a case management solution built around the Tessi EDM (Elelectronic Document Management) in the context of paper mail digitization for a major French insurance company (tens of thousands mails digitized and handled every day on our platform).
- Back-end and front-end User Stories development
 - Integration with the proprietary Tessi Datacontent EDM engine (based on Cassandra) and JBPM for workflow management
 - Configuration management with Ansible and continuous deployments in production with no service interruption
 - Exploitation of the open source "JHipster Console" (ELK Stack + Zipkin) monitoring solution which I developed and allowed us to achieve observability (logs, metrics and traces) of our microservice architecture.
- Sept. 2016 - **Full-stack developer**, *Paris Turf*, Microservice architecture on Kubernetes.
- June 2017 Development of a horceracing totalisator for an online betting website.
- Development of Spring Boot based microservices communicating with each other using REST
 - Development of an AngularJS front-end for the operational back-office
 - Contribution to setting up Continuous Integration with Jenkins
 - Deployment of the microservice stack as Docker containers on Kubernetes
 - Handling of production incidents
- Internship & Student projects**
- Jan. 2016 - **Software Engineering**, *Ippon Technologies*, JHipster R&D Internship.
- July 2016
- Contributions to the JHipster project, an open source code generation tool to create Spring Boot + AngularJS application
 - Participated in the design and implementation of microservices patterns in JHipster using Spring Cloud, Netflix OSS, Docker and creation of a monitoring solution based on the ELK stack.
 - Initial development of the DataMC console using JHipster: an administration console to drive the Big Data managed service offering by Ippon
 - Integration of the application with a container orchestration platform based on Docker Swarm and Consul
- Jan. 2015 - **ISO 9001 Certified project for CHU de Rouen**, *INSA de Rouen*, Rouen, Normandy,
- Dec. 2015 JHipster & DataMC.
- Creation of a RESTFUL API and a Responsive front-end to modernize the main French medical documents search engine (doccismef.chu-rouen.fr)
 - University project assigned to a group of 7 students representing 25h of work per week for 2 semesters
- June 2015 - **Software development internship**, *Bancom IT Co. Ltd*, Shenyang, China.
- August 2015
- Participation to the development of a CRM platform for use by universities in Liaoning Province (North-East China)
 - Developed my ability to adapt to a different culture and work environment (a Chinese SME)

Education

- 2016 **Engineer Degree**, *Information Systems Architecture*, INSA de Rouen, Normandy.
- 2013 **Integrated Preparatory Cycle**, *Science and Technology for the Engineer*, INSA de Rouen, Normandy.
- 2010 **Scientific Baccalaureate**, *Lycée Auguste Renoir*, Asnières-sur-Seine.