Xenogenics

New 2023 OW2 member

Xavier R. Guérin, President & CTO
Overview
Xenogenics Research Group

Operating since 2021;

R&D in high-performance computer systems and networks;

Team of 2 PhDs and 2 research engineers;
Interests
Xenogenics Research Group

**Industries:** finance, banking, telecommunications, defense;

**Topics:** systems and networks, programming languages and compilers, distributed/cloud computing, data processing, hardware design;

**Opensource:** https://github.com/xenogenics

- *OpenStreams*: cloud-native streams processing platform;
- *Tulips*: ultra-low latency user-space TCP/IP stack;
- *Bitstring*: bit manipulation library for OCaml;
OpenStreams

https://github.com/xenogenics/openstreams
Overview

OpenStreams

**Opensource** version of **IBM Streams** under Apache v2;

Based-off version **4.3.0.2**, released in **2020**;

**Cloud-native runtime** for **distributed stream-processing** applications;
What?
Cloud-native, Distributed, Streams Computing

**Streams Computing** High volume, small data, control and data flows, real-time processing, auto-scaling;

**Distributed** Application scheduling and deployment, resources management, fault-tolerance, state consistency, monitoring and reporting, data access and persistence;

**Cloud-native** Portability, integration, distribution, management, governance;
Why?

Overhead, Compatibility, Flexibility, and Cost

**Overhead** Building a distributed platform is hard, leveraging *de facto* common platforms like Kubernetes makes sense;

**Compatibility** Using a common platform simplifies integration with other applications or middleware also using it;

**Flexibility** Write once, run anywhere;

**Cost** Manpower dedicated to maintain and develop the platform can be reallocated to develop the business logic;
A Cloud Native Platform for Stateful Streaming

Scott Schneider, Xavier Guerin, Shaohan Hu, Kun-Lung Wu