

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

<https://arxiv.org/abs/2006.00064>

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

