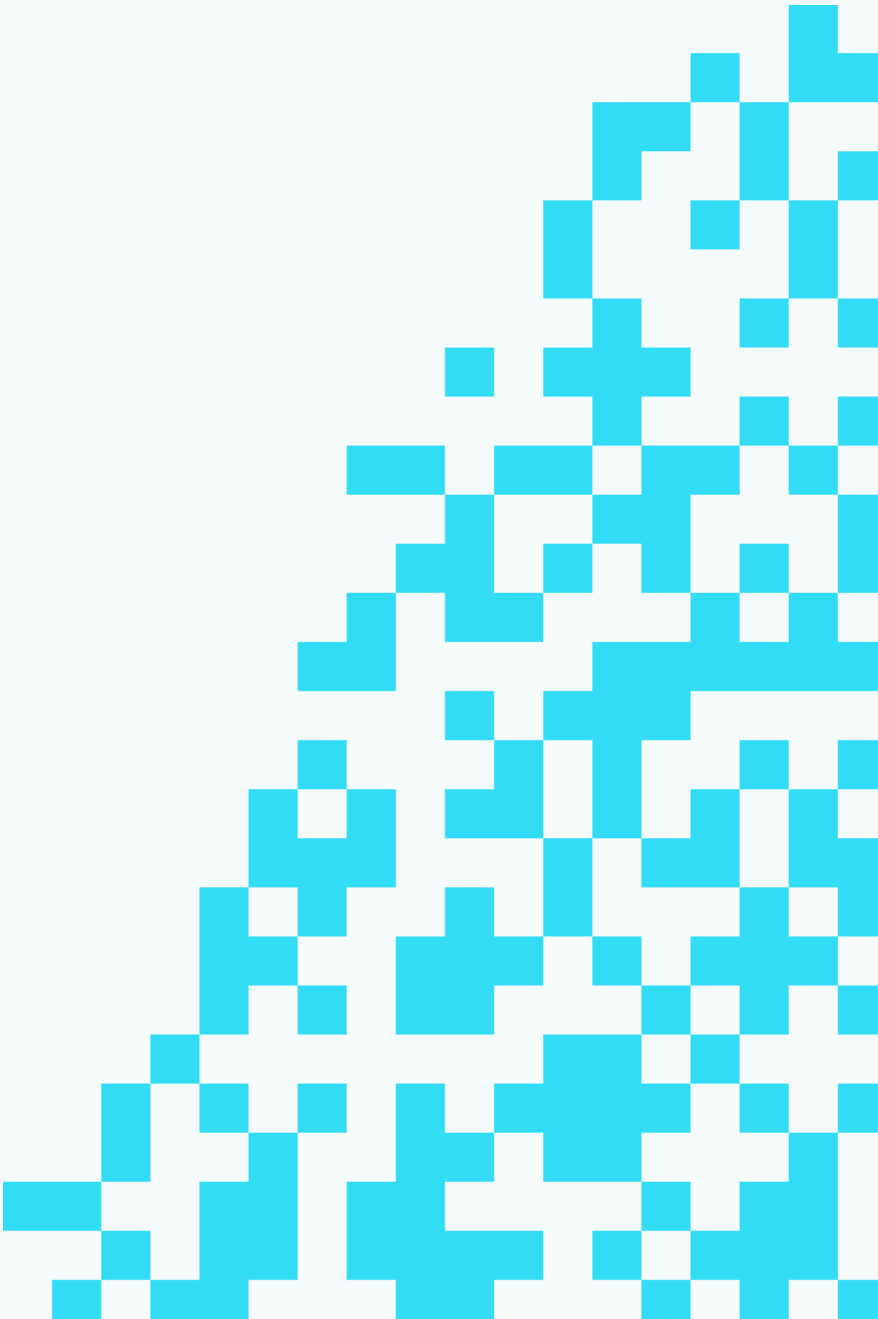
Event Driven Architecture Workshop G-Cloud 14



About OSO

Our mission is to help teams build event driven applications on Apache Kafka, enabling real-time access to your data and introducing meaningful innovations that drive business growth. Our developer-first culture, combined with our cross-industry experience and battle-tested delivery methods allow us to deliver the most impactful solutions through increased efficiency using our expertise in completing similar assignments for other large automotive institutions.

Founded in 2017, we set out to create a consultancy where customers get the benefits of a small specialist team that are dedicated to their success. As a team of engineers with a combined circa 50 years of expertise in Apache Kafka, event driven architecture and distributed platforms in general. Our vision is to enable businesses to greatly benefit from the power of these technologies which is why we have built a team of Subject Matter Experts (SMEs) who are solely focused on Apache Kafka.

Since being formed, we have worked with a number of well-established public sector clients in the UK. Case studies are available on our website at: https://oso.sh/customer-stories/

We are distributed computing experts and pride ourselves on being event driven technology evangelists. We are passionate about enabling businesses to make real time decisions.

Our Confluent Relationship

OSO has been a Confluent consulting partner since 2019. We have developed a series of tools to assist Confluent and Apache Kafka in deploying an immutable infrastructure as quickly and seamlessly as possible in the cloud.

Our strategic partnership with Confluent shares access to subject matter experts and internal knowledge which provides distinct value for any Confluent / Apache Kafka centric customer architecture.

Our Amazon Web Services Relationship

OSO is a Select Tier Consulting partner of the Amazon Web Services (AWS) Partner Network and has several certified Amazon Web Services solution architects, developers, and engineers within the team. This strategic partnership with AWS provides access to AWS internal resources, as well as proof of concept funding, people and knowledge that provide distinct and differentiated value for any AWS centric customer architecture.

Service Definition

We offer a variety of packaged services and bring industry-leading expertise to support Apache Kafka in your organisation. These services include:

- Provide Enterprise SLA backed 24x7 support
- Design and build secure, scalable and highly available Apache Pulsar and Apache Kafka clusters.
- Design platform architecture blueprints.
- Perform cluster health checks.
- Assess operational excellence and design disaster recovery plans.
- Provide emergency support during disaster scenarios.
- Create real-time messaging applications.

To help you understand and harness the power of event driven architectures, we deliver a 2 day workshop to cover your architecture, data model and roadmap for the secure deployment of Kafka. The workshop is not purely a technical exercise, it entails education, training and upskilling and considers the people and process aspects of how Kafka can be consumed at scale throughout the organisation. Following the workshop, outputs will be consolidated and recommendations will be provided, applying insight from experts and senior stakeholders.

A summary of the workshop agendas and outputs are summarised below:

Agenda:

Day 1		
Time	**Topic**	**Output**
09:30 - 10:00	Introduction to Apache Kafka and event-driven architectures.	Education, training and upskilling.
10:00 - 12:00	**Capture current architecture practices, standards:** - Stakeholders and their requirements - FOSS v Commercial v Cloud **Develop strawman architecture of client ecosystem** *(including choreography / orchestration/workflows):* - Technology stack (frameworks, data formats). - Development processes (source repo, build pipelines,	Captured line items, weighted in terms of relevance to activities. Assumptions, priorities and timeframes.

	automation, self-service). - Regulations / compliance / reporting (PCI, GDPR, etc). - Security standards and architecture / implementation (LDAP, OAuth, SSO, Vault etc). - Tooling (alerting / monitoring / logging / orchestration). - DevOps, operations, practices tooling WRT: - Runbooks, No-ops, infra-as-code upgrades, 24x7, uptime, release, processes & support processes. - Infrastructure (cloud provider / DC / regions / OS). - Future direction and timeline.	
12:00 - 12:45	Lunch break	

12:45 - 15:00	**Enumerate Kafka ecosystems pros / cons and features required.**
	
	- Detailed explanation of schema-registry, replication options MM2 v replicator, data-balancing, over-partitioning, retention, transactionality, REST proxy, security options.
	- SWOT Confluent enterprise, community & cloud features.
	- SWOT AWS MSK, Kafka OSS & complementary tools (monitoring, alerting, management).
	- Score SWOT outputs on factors including (L/M/H)
	  - Suitability for dev and/or prod
	  - Cost
	  - Security and encryption
	  - Support (i.e. skills and tooling for self-support vs cloud support etc)
	  - Operations
	  - Current business appetite
	  - Fit strategic direction (i.e. cloud, Central-nervous-system, security, hybrid cloud, multi-cloud).
		Scored and qualified solution (and gaps) for production and pre-prod.
		
		A high level proposal, plan / / steps / timelines with dependency tracking.

15:00 - 15:30	Break	
15:30 - 16:30	**Identify high level requirements:** - Service availability, regions and SLA commitments. - Current production runbooks / deployment pipelines. - Development / testing environment requirements. - CI / CD tooling requirements.	A high level strawman deployment architecture for all none-production and production

	- Key management and certificate requirements. - Data classification and schematic versioning.	environments.
Day 2		
Time	**Topic**	**Output**
09:30 - 10:00	Introduction to Apache Kafka and event-driven architectures.	Education, training and upskilling.
10:00 - 10:30	**Educational session on Kafka in production:** - Key architectural principles to adhere to. - A blueprint of common architectural patterns. - How to scale Kafka in production. - Concepts of Kafka Connect. - KSQL vs Kafka Streams. - Self service tooling and Kafka ecosystem of connectors.	Education, training and upskilling.
10:30 - 11:00	**Education session on DevOps in distributed architecture:** - How to build and deploy high performance, fault tolerant systems. - How to measuring DevOps success with four key metrics: 1) Lead time for changes 2) Deployment frequency 3) Time to restore service 4) Change failure rate - DevOps tooling (automation / monitoring / alerting / reporting / metrics. - DevOps tooling.	Education, training and upskilling.
11:00 - 12:00	**Capture operational infrastructure and processes:** - Monitoring tools and metrics (incl self hosted and others). - Discuss monitoring / alerting options. - How to handle dead-letter queues. - Audit processes. - Logging and log retention policy. - Support and out of hours issue resolution - Patching and vulnerability scanning.	Outputs mapped onto the recommended Kafka ecosystem. Operational tooling implementation plan proposal / steps / timeline.
12:00 - 12:45	Lunch break	

12:45 - 13:15	**Identify and scoping development requirements:** - Development environment, developer onboarding and tooling requirements. - Source control policy and tooling. - CI / CD deployment and pipelines. - Cost analysis on anything new. - Skills matrix of existing development team.	Strawman development architecture and tooling. Recommended operational tooling and implementation plan proposal / steps / timeline.
13:15 - 15:45	**Use case modelling** - Capture the first use-case as a dataflow including key distribution, partition assignment, data flow points, cost of failure, choreography. - Data model and evolution including serialisation format / compatibility / evolution. - Validate requirements (correctness, side effects). - Upgrade paths and strategy. - Future / envisaged use-case states. - Workload characteristics (historic, test, live, etc) with respect to: 1) Throughput. 2) Latency Volume 4) Retention 5) Resilience	Captured and documented findings. A high-level data-flow model. Recommended deployment and implementation plan proposal / steps / timeline for testing and productionisation.
15:45 - 16:00	Break	
16:00 - 17:00	**Initial planning activity dependency mapping and feedback:** - High level statements of work. - Roadmap of dependencies. - Next steps. - Session feedback.	Dependency flow of activities broken down as work package activities

Resourcing and Logistics

As an Emerging Tech Professional Services company, Event Driven Architecture is well within our core skill set. This means OSO can typically initiate a full delivery team within 2-3 weeks, and can often mobilise teams faster.

OSO will select the resources from our team of specialists who sit across all the functional areas including developers, engineers and architects, technical leads, business and performance analysts, testers, and DevOps consultants.

Our consultants in the UK are highly experienced and have a minimum of 10 years in the delivery and maintenance of Cloud services, using agile methods.

We do not outsource any aspects of our projects, our high level of experience gives us the maturity and pragmatism to engage effectively with client team members and stakeholders in a highly collaborative manner.

Security Clearance

We are willing to obtain security clearance for all our people working on specific client engagements, in the event that this is required.

Next Steps

The initial workshop provides a technical overview to review the requirements and provide your team with a walkthrough of the possible solution architecture. We tailor each workshop to the needs of the client. In our experience, 80% of organisations participating in the workshop proceed with the recommended actions.

Have any questions? Require a sample of the workshop outputs? Email us at enquiries@oso.sh or schedule a call today.