Day - 1	Day - 2
•	•
o Definition of microservice	o Loosely coupled systems
o Microservices benefits	o Asynchronous operations
o Microservice challenges	o Messaging patterns (oneway, streaming, req/resp, pub/sub, broadcast, anycast, multicast, etc.)
o Microservices contrasted with other architectural patterns Principles and Practices	o Brokered and Brokerless fabrics
o LAB: Conceptualizing and Tooling a Microservice Solution	o Amazon SQS Apache Kafka Message serialization
•	o LAB: IDLs and Serialization
o Interfaces and Contracts Cohesion and Bounded Context	•
o The value of IDL (cases examining OpenAPI, gRPC/ProtoBuf and Thrift)	o Local and distributed transactions
o Service decomposition and recomposition	o Eventual consistency
o Breaking down monoliths LAB: Creating a REST API	o Event sourcing
•	o State logs and ordering
o Why packaging is so important in microservice systems	o Immutability and Idempotence
o Evolution of application runtime environments Isolation	o LAB: Messaging and Event Sourcing
o constraints Introduction to Docker Images	•
o metadata and distribution	o Benefits of stateless systems
o Amazon EC2 Container Registry	o The challenges of state
o LAB: Container packaging with Docker	o Cloud native state management, patterns and practices
	o Monolithic and distributed state managers
	o Polyglot persistence
	o LAB: Resilient Clustered Persistence Engines

Day - 3

- - Introduction to Orchestration
  - Scheduling Load balancing and scaling
  - Service discovery schemes
  - Orchestration cases: Kubernetes, Mesos/Marathon, Swarm, ECS
  - LAB: Orchestrating microservices

- - Serverless computing overview
  - Functions as a Service (FaaS)
  - Containers as a Service (CaaS)
  - Integrating functions with services
  - Serverless solutions and state
  - Serverless Standards
  - LAB: Functions as a Service

- - The role of gateways
  - Revisiting bounded context
  - Ingres integration schemes
  - Access control, circuit breaking, rate limiting
  - Proxy, aggregate and translation operations
  - Service mesh solutions
  - LAB: API gateways