

Serverless Architecture

with Lynn Langit

Resources

Core Serverless Concepts		
1	Defining serverless applications	"Adrian Cockcroft on the Convergence of Cloud Native Computing and AWS" https://www.linuxfoundation.org/blog/2018/02/adrian-cockcroft-convergence-cloud-native-computing-aws
2	Save money: Serverless census example	"QUT students design a \$500 cloud-based census server four times better than IBM's \$9 million system" https://www.news.com.au/technology/online/qut-students-design-a-500-cloudbased-census-server-four-times-better-than-ibms-9-million-system/news-story/0a4eeabf733cedfce0091ce6f062c60c
3	Categories and base architecture	"Mike Roberts article on serverless architectures" https://martinfowler.com/articles/serverless.html
4	Which use cases are best serverless?	DZone: "4 Use Cases of Serverless Architecture" https://dzone.com/articles/4-use-cases-of-serverless-architecture
5	Reviewing the cost of cloud functions	"Serverless Cost Calculator" http://serverlesscalc.com
6	Risks of serverless patterns	"Quora Discussion: "What Are Some Criticisms and Drawbacks of Serverless Computing?" https://www.quora.com/What-are-some-criticisms-and-drawbacks-of-Serverless-Computing
7	Benefits of serverless patterns	"Genome Engineering Applications: Early Adopters of the Cloud" https://aws.amazon.com/blogs/aws/genome-engineering-applications-early-adopters-of-the-cloud
8	Serverless security patterns	ZDNet: "Top 10 Security Challenges of Serverless Architectures" https://www.zdnet.com/article/the-top-10-risks-for-apps-on-serverless-architectures
Serverless Service Patterns		
1	Serverless services	"The Serverless Sea Change" https://www.infoq.com/articles/serverless-sea-change
2	Storage: Object storage and data lakes	"What Is a Data Lake?" https://aws.amazon.com/big-data/datalakes-and-analytics/what-is-a-data-lake
3	Events: Handling messages and streams	"Event-Driven Serverless Architectures" https://dachou.github.io/2018/10/15/event-driven-serverless.html

4	Are microservices always serverless?	"Serverless Code Patterns" https://serverless.com/blog/serverless-architecture-code-patterns
5	Events and microservice serverless data	"Introduction to Serverless Microservices" https://blog.algorithmia.com/introduction-to-serverless-microservices
6	Common third-party API patterns	"How to Create a REST API with Pre-written Serverless Components" https://serverless.com/blog/how-create-rest-api-serverless-components
7	Compute: Cloud functions	"Lambda Internals: Exploring AWS Lambda" https://hackernoon.com/lambda-internals-exploring-aws-lambda-462f05f74076 "AWS SAR & HERE Geocode Application" https://medium.com/@lynnlangit/aws-sar-here-geocode-application-208ca26e19c3
8	Function layers and SAR	"What's New in AWS Lambda" https://www.infoworld.com/article/3247407/aws-lambda/whats-new-in-aws-lambda-go-and-net-core-support.html
9	Function deployment patterns	"A Production-Grade CI/CD Pipeline for Serverless Applications" https://medium.com/@tarekbecker/a-production-grade-ci-cd-pipeline-for-serverless-applications-888668bcfe04 "Faster Genome Search with X-Ray" https://aws.amazon.com/blogs/publicsector/faster-genome-search-via-aws-x-ray
10	What are serverless containers?	"Knative" https://cloud.google.com/knative "How Firecracker Is Going to Set Modern Infrastructure on Fire" https://thenewstack.io/how-firecracker-is-going-to-set-modern-infrastructure-on-fire
Cloud-Native Serverless		
1	Building cloud-native architectures	"Serverless + Modern Agile: A Match made in Silicon Heaven" https://www.youtube.com/watch?v=mzjhEZLTepM "Cloud Native Computing" https://aws.amazon.com/blogs/opensource/cloud-native-computing
2	Pattern: Incorporating third-party APIs	"HERE Technologies Geocoder API and AWS" https://medium.com/@lynnlangit/here-technologies-geocoder-api-aws-46b5647ce385
3	Pattern: Event notifications	"Serverless Microservices Patterns for AWS" https://www.jeremydaly.com/serverless-microservice-patterns-for-aws

4	Pattern: Handle IoT events	"Architectural Patterns for IoT: Event-Driven Architectures" https://medium.com/@prashunjaveri/architectural-patterns-for-iot-event-driven-architectures-557be35fa626 "AWS Connected Vehicle Architecture" https://docs.aws.amazon.com/solutions/latest/connected-vehicle-solution/architecture.html
5	Pattern: Scalable search	"Genome Engineering: Early Adopters of the Cloud" https://aws.amazon.com/blogs/aws/genome-engineering-applications-early-adopters-of-the-cloud
6	Pattern: ML classification	"Deep Dive on Amazon Rekognition Architectures for Image Analysis" https://www.slideshare.net/AmazonWebServices/mcl318-deep-dive-on-amazon-rekognition-architectures-for-image-analysis-nonotes
7	Pattern: Real-time analysis and ML	"Serverless Analytics and Machine Learning with Google Cloud" https://www.leptonsoftware.com/2018/01/16/serverless-analytics-machine-learning-with-google-cloud
8	Pattern: Data lakes	"Build a Data Lake" https://cloud.google.com/solutions/build-a-data-lake-on-gcp "Data Lake Foundation on AWS" https://aws.amazon.com/quickstart/architecture/data-lake-foundation-with-aws-services
Emergent Serverless		
1	Emergent serverless architectures	"Migrating to Cloud-Native Architectures" https://www.oreilly.com/library/view/migrating-to-cloud-native/9781492047605
2	Pattern: Migrate data warehouse	"Migrating Your Traditional Data Warehouse to a Modern Data Lake" https://www.slideshare.net/AmazonWebServices/migrating-your-traditional-data-warehouse-to-a-modern-data-lake
3	Pattern: Enterprise IoT	"Decision Tree for Azure Compute Services" https://docs.microsoft.com/en-us/azure/architecture/guide/technology-choices/compute-decision-tree
4	Pattern: Genomic analysis	"Scaling Custom Machine Learning on AWS" https://medium.com/@lynnlangit/scaling-custom-machine-learning-on-aws-d9dc7edfbff9
5	Pattern: CI/CD pipeline	"Implement a serverless CI/CD pipeline with AWS" https://dev.to/sagar/implement-a-serverless-cicd-pipeline-with-aws-amazon-web-services-438f
Conclusion		
1	Next Steps	"Serverless Applications Lens" https://d1.awsstatic.com/whitepapers/architecture/AWS-Serverless-Applications-Lens.pdf