INTRODUCTION TO SERVERLESS ARCHITECTURE

Simplify your development and operations

[Suresh and 12/06/2024]

INTRODUCTION TO SERVERLESS ARCHITECTURE

- Don’t think Serverless means no servers
- Definition: Building and running applications without managing servers called as Serverless.
- Cloud providers handle the infrastructure.
  - Example :- - AWS Lambda, Azure Functions, Google Cloud Functions.
- Developers can Focus on writing code
  - Developers doesn’t need to care about

    1) Writing code for a server

    2) Creating a server

    3) Maintaining a server

    4) Deploying the server

SERVER-BASED ARCHITECTURE VS SERVERLESS ARCHITECTURE

Aspect	Traditional Architecture	Serverless Architecture
Infrastructure Management	Managed by the organization	Managed by the cloud provider
Scalability	Manual scaling, often over-provisioned	Automatic, event-driven scaling
Cost	Fixed costs, potential underutilization	Pay-as-you-go, cost-efficient
Deployment	Time-consuming setup, requires DevOps	Fast deployment, focuses on code

BENEFITS OF SERVERLESS ARCHITECTURE

- Simplified Operations
  - The cloud provider is responsible for OS and middleware updates and security patches.
- Cost Efficiency
  - Costs are based on actual usage. You pay for the compute time your code consumes and the resources it uses, with no charges for idle time.
- Automatic Scalability
  - Serverless architectures automatically scale up or down based on demand. There is no need to manually add or remove servers.
- Faster Development
  - Developers can deploy code quickly without worrying about underlying infrastructure.

COST COMPARISION

AWS Lambda

Pricing Model: Pay-per-request and duration.

Free Tier: 1 million requests and 400,000 GB-seconds of compute time per month.

Request Pricing: $0.20 per 1 million requests beyond the free tier.

Duration Pricing: $0.00001667 per GB-second beyond the free tier

Azure Functions

Pricing Model: Pay-per-request and duration.

Free Tier: 1 million requests and 400,000 GB-seconds of execution time per month.

Request Pricing: $0.20 per 1 million executions beyond the free tier.

Duration Pricing: $0.000016 per GB-second beyond the free tier

Google Cloud Functions

Pricing Model: Pay-per-request and duration.

Free Tier: 2 million invocations, 400,000 GB-seconds of compute time, and 200,000 GHz-seconds of CPU time per month.

Request Pricing: $0.40 per 1 million invocations beyond the free tier.

Duration Pricing: $0.0000025 per GB-second beyond the free tier

CONCLUSION

- Serverless architecture simplifies development.
- Focus on business logic, not infrastructure.
- Automatic scaling and cost efficiency.