

Multi-Access Edge Computing (MEC)

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What We'll Discuss Today



- > What and Why of Edge Computing
- ➤ 5G & Multi Access Edge Computing (MEC)
- > Top Use Cases
- ➤ Challenges
- ➤ Architecture & patterns



What Is Edge Computing





Edge Computing (vs Cloud Computing)

Two competing trends.

better economies-of-scale and resource sharing efficiency

EDGE decentralized many small sites (scale-out) location matters

better bandwidth, latency, resiliency, data sovereignty





centralized few large sites (scale-up) location doesn't matter







5G & Multi-Access Edge Computing (MEC)



Multi-Access Edge Computing with 5G





"Centralize where you can, distribute where you must."

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Top Use Cases



Who Is Doing Edge Computing?





Challenges



The Complexities of Edge Computing



Scale

Need to manage up to hundreds of thousands nodes and clusters remotely



Interoperability

Ensure support for a heterogenous hardware and software environments



Security

Ensure consistent, fast and robust security measures



Consistency

Provide a consistent approach for developer and IT operations teams





Edge Patterns



First, Asking the Right Questions

Where are my end customers located?

Is my platform edge-ready?

Do we have the necessary skills?

What are my use cases?

What are my service goals towards my end customers ?

Do we need to build everything ourselves?



Open Hybrid Cloud Strategy

Any workload, any footprint, **any location**



Why Containers Make Sense At Edge





Update at scale



New applications using AI/ML technology or that offer deeper customer engagements such as AR/VR are containerized

Containerized applications are portable so that they can be deployed and lifecycle managed consistently across an architecture

New management models (like gitOps) allow developers to frequently update applications at remote sites as if they were in a local data center

Can be deployed to any device and require a smaller resource footprint for physically smaller edge environments





Summary

- Edge computing is moving the compute closer to end user
- ► 5G, with capabilities like URLLC, eMBB & mMTC, is well suited to realize Edge use cases
- Edge Computing is a natural choice for low latency and bandwidth aware use cases
- Edge is already happening but still a new technology and hence come with some challenges as compared to traditional way of centralized data centers
- The architecture would be use case specific. But should be cloud-native having uniform manageability at scale







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