MEC Architecture and Operations

5G_716x | Expert-Led Live | 5G Core | Expert
Course Duration: 1 day

Multi-Access Edge Computing (MEC) pushes cloud computing capabilities closer to the user across multiple access network domains. This course provides an overview of MEC framework, underlying technology and its use cases. The course starts with the definition of MEC, its characteristics, benefits, and business drivers. The MEC architecture defined by ETSI is illustrated. Technology enablers for MEC such as the cloud infrastructure, NFV, SDN, CUPS, Microservices, and 5G core are discussed. MEC location strategies are summarized. The course concludes with a discussion on challenges faced by MEC.

Intended Audience

A high-level technical overview to personnel involved in product management, planning, design, engineering, and operation.

Objectives

After completing this course, the student will be able to:

- Define Multi-Access Edge Computing (MEC)
- List the key use cases and benefits of MEC
- Illustrate the ETSI reference architecture for MEC
- Identify key technology enablers for MEC
- Describe how MEC interacts with the rest of the 5G network

Course Prerequisites

Welcome to Multi-Access Edge Computing (MEC)

Outline

1. Edge Computing and Enablers
1.1 Defining MEC
1.2 Business drivers
1.3 Key enablers of MEC
1.4 Cloud infrastructure
1.5 CUPS Architecture in 4G LTE
1.6 Virtualizing Core
1.7 Software-Defined Networking (SDN)

2. Network Architecture for MEC
2.1 4G EPC and 5G Core Networks
2.2 Service Based Architecture (SBA) in 5GC
2.3 Role of NSSF and NEF
2.4 MEC standardization (e.g., ETSI and 3GPP)
2.5 ETSI reference architecture
2.6 Mobile Edge Host (platform, infrastructure, applications)
2.7 MEC management (host-level, system level)
2.8 Mobile Edge Services
2.9 Example MEC APIs

3. MEC Enablers in 5G
3.1 5G NR features for lower latency
3.2 5G RAN features for lower latency
3.3 Virtualizing RAN
3.4 Selective Routing for MEC
3.5 MEC in 5G (CAPIF, LADN, PDU Session)
3.6 Cloud native Microservices
3.7 Orchestration

4. Deployment and Use Cases
4.1 MEC server location strategies
4.2 Authentication and Security
4.3 Example flow of MEC Operation
4.4 Sample Use Cases
4.5 Challenges and key considerations

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