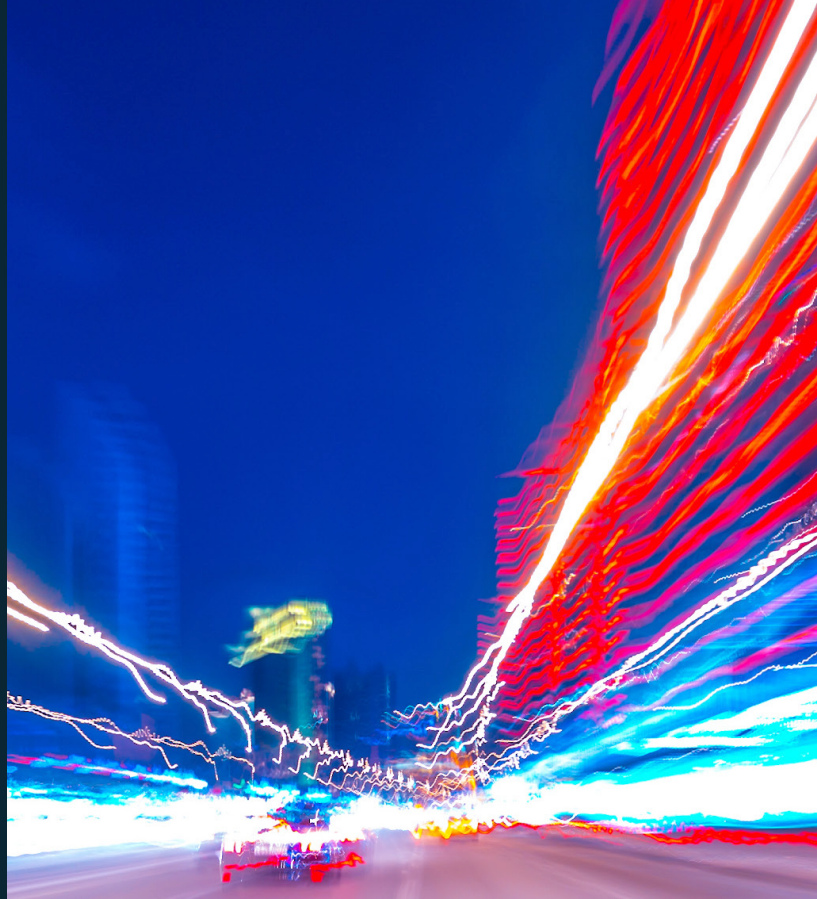




Instructor's knowledge was excellent.
Great real-world experience.



Watch our course intro video.



CUPS

Course Description

With service providers seeking to rationalize the core network for both 4G and 5G operation, CUPS (Control and User Plane Separation of EPC Nodes) is a key transition technology which sees logical separation of key EPC nodes such as the S-GW, P-GW and TDF. This course explores the key concepts behind CUPS, include the main architectural changes that CUPS introduces. PFCP (Packet Forwarding Control Protocol) is also examined, with key messages for node and session management explored. Finally, the impact of CUPS on key EPC procedures will be discussed.

This course has no prerequisites.

1/2 day
(LiveOnsite,
LiveOnline)

3 hours
learning
(OnlineAnytime)

3

CPD Learning
Credits



Level: 2
(Intermediate)

This course will contain the following sections:

1. CUPS

Topic areas covered include:

- CUPS Concepts:
 - Deployment Flexibility.
 - Independently Scalable.
 - Complimenting Virtualization:
 - CUPS and 5GC Interworking.
- CUPS Architecture:
 - P-GW-C, P-GW-U, S-GW-C, S-GW-U, TDF-C, TDF-U.
 - Sxa, Sxb, Sxc.
 - S-GW Functionality.
 - P-GW Functionality.
 - TDF Functionality.
 - EPC Migration to CUPS:
 - CUPS Deployment Approach.
 - Advantages, Risks and Challenges.
- Focus on PFCP:
 - PFCP Message Set:
 - PFCP Protocol Stack.
 - PFCP Associations.
 - PFCP Message Examples (Node Management):
 - PFCP Association Establishment.
 - Provisioning.
 - Heartbeat.
 - PFCP Message Examples (Session Management):
 - PFCP Session Establishment.
 - PFCP Session Modification.
 - PFCP Session Deletion.
- EPC Procedures and CUPS:
 - EPS Attach and PDN Connectivity Establishment.
 - Network Initiated Dedicated Bearer Establishment.



**Watch a Sample
Video Online**

1 1/2 day
(LiveOnsite,
LiveOnline)

3 hours
learning
(OnlineAnytime)

3

**CPD Learning
Credits**



**LiveOnsite, LiveOnline,
OnlineAnytime**



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