DCPRO DEVELOPMENT

Open Compute Project (OCP) Awareness Course

PRACTITIONER LEVEL COURSE

2 DAY 14

Learn the fundamentals of Open Compute and its transformational and future disruptive impacts on traditional enterprise data centres. Come away with a holistic perspective of Open Compute. (In-house courses available for large organisations.)

Learning Outcomes

- Understand the background of the Open Compute Project (OCP) and why it began
- Identify challenges faced when growing to hyper scale data centres
- Recognise how OCP applies to data center capital expenditure and operational expenditure
- Discuss key elements of OCP including; energy efficiency, simplicity and vanity servers
- Identify how to help prepare for, and ease the migration to OCP
- Apply best practices of transforming data centres from traditional enterprise to OCP

IT DESIGN OPERATIONS NETWORK

5 reasons to choose our courses:

1 Courses aligned to international standards

2 Expert instructors with over 10 years experience

3 Interactive learning experience

4 Blended learning solutions (classroom and online)

5 Specialist career progression tracks for advanced learning

Who should attend?

- IT Manager
- M&E Consultant
- HVAC Engineer
- Data Center Architect
- Facility Manager
- OCP Solutions Provider
- Project Manager
- Data Center Owner/Operator
- Technicians
- Operations Manager
- OFM Suppliers
- OCP Equipment Manufacturers

Professional Development Hrs	7
Exam	1 hour, open book
Pre-requisites	None (although completion of our foundation level 'Data Center Design Awareness' course is recommended)
Suggested Progression	Data Center Specialist Design or Data Center Specialist Operations

Price - £895 | €1,100 | $1,400

Endorsed by The Open Compute Project Foundation

OPEN Compute Project

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Course Content

OPEN Compute Project

OCP Background
- History
- Why it started
- Problems growing to hyper scale data centres
- Energy efficiency
- Simplicity
- Capital expenditure
- Operational expenditure
- Vanity servers
- OCP Foundation
- OCP Projects

OCP Data Centre Technology
- Data centre building architecture
- Data halls space planning and cluster grids
- Electrical
- Mechanical
- Cooling
- Battery cabinets
- Open triplet racks
- Network structured cabling physical topology and cabling support systems
- Centralised Main Distribution Frames

OCP Network Technology
- Open switch
- Wedge & 6-pack
- Ethernet switch speeds interfacings and matrix non blocking leaf and spine topologies
- Software Defined Networks and switch microservers.
- Interoperability testing and types of certifications.

OCP Server Technology
- Servers v.1 and v.2
- Server variants and
- Server functions. e.g. Compute node and Head node
- Open Server rack layouts and changes to EIA rack widths and rack unit heights
- Server interfacing for power and communications
- Fan variants and efficiencies with 60 mm and 80mm diameter fans
- CPU socket variants
- Power supplies for AC and DC inputs
- Mother boards and mezzanine boards for Ethernet
- Airflow management through servers and component orientation optimisation
- Server manufactures and OCP server adaptions for 19inch racks
- Compatibility with open rack versions 1 & 2

OCP Server Technology (cont)
- Standard rack configuration types (Matrix of CPU, Memory, Disk, Services)
    - I WEB
    - II Database
    - IV Hadoop
    - V Haystack
    - VI Feed
    - VII Cold store

OCP Storage Technology
- Open Vault
- Relationships between HDD shelf stacking and Open Rack dimensions
- Storage types
- Manufacturer's OCP submissions. e.g. Seagate Kinetic IP addressable HDD

OCP Hardware Management & Metrics
- Hardware Management
- BMS (Building Management Systems) including IP gateways onto Ethernet wired LAN
- DCIM (Data Centre Information Management) including Facebook & CA partnership solutions.
- Metrics from PUE, WUE to How many user pages per sec can be served.
- SDN (Software Defined Networking)
- Openstack
- Operating systems

OCP disruptive impacts for enterprise data centres – course rolling workshop
- Case studies and team workshops transforming data centres from traditional enterprise to OCP
- Focussing on the lessons that can be learnt now to help prepare for and ease the migration to OCP
- Use of OCP Bridging Racks
- Data halls space planning
- Incorporating broad set of data centre subsystems and how best to integrate them
    - Building and structures
    - Space planning Internal and external
    - ME&P
    - Data halls
    - Racks
    - Network
    - Compute
    - Storage
    - Support structures
    - Cable containment