Hewlett Packard Enterprise

Certified Data Center Professional (CDCP) HK258S

This course is designed to expose participants to the key components of the data center. It will address how to set up and improve key aspects such as power, cooling, security, cabling, safety to ensure a high-availability data center. CDCP training will also address key operations and maintenance aspects.

HPE course number	HK258S
Course length	2 days
Delivery mode	ILT
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Why HPE Education Services?

- IDC MarketScape leader 4 years running for IT education and training*
- Recognized by IDC for leading with global coverage, unmatched technical expertise, and targeted education consulting services*
- Key partnerships with industry leaders OpenStack®, VMware®, Linux®, Microsoft®, ITIL, PMI, CSA, and (ISC)²
- Complete continuum of training delivery options—self-paced eLearning, custom education consulting, traditional classroom, video on-demand instruction, live virtual instructor-led with hands-on lab, dedicated onsite training
- Simplified purchase option with HPE Training Credits

Audience

The primary audience for this course is any IT, facilities or data center professional who works in and around the data center and who has the responsibility to achieve and improve the availability and manageability of the data center.

Prerequisites

There is no specific prerequisite for the CDCP course. However, participants who already have at least one or two years' experience in a data center or facilities environment may be best suited. Those with no experience just yet are most welcome to participate.

Course objectives

After completion of the course, the participant will be able to:

- Choose an optimum site for mission-critical data center based on current and future needs.
- Describe all components that are important for high availability in a data center and how to effectively set up the data center.
- Name and apply the various industry standards.
- Describe the various technologies for UPS, fire suppression, cooling, monitoring systems, cabling standards, etc., and to select and apply them effectively to cost-efficiently enhance the high availability of the data center.
- Review the electrical distribution system to avoid costly downtime.
- Enhance cooling capabilities and efficiency in the data center by using existing and new techniques and technologies for the increased cooling requirements of the future.
- Design a highly reliable and scalable network architecture and learn how to ensure installers apply proper testing techniques.
- Create effective maintenance contracts with equipment suppliers ensuring the best return on investment.
- Set up effective data center monitoring ensuring the right people get the right message.
- Ensure proper security measures, both procedural and technical, are established to safeguard your company's valuable information in the data center.

*Realize Technology Value with Training, IDC Infographic 2037, Sponsored by HPE, January 2016

Detailed course outline

The data center, it's importance and causes for downtime	
Data center standards and best practices	
Data center location, building, and construction	• Selecting appropriate sites and buildings and how to avoid pitfalls • Various components of an effective data center and supporting facilities setup
Raised floor/suspended ceiling	• Uniform, concentrated, and rolling load definitions • Applicable standards • Raised floor guidelines • Signal Reference Grid, grounding of racks • Disability act and regulations • Suspended ceiling usage and requirements
Light	• Standards • Light fixture types and placement • Emergency lighting, Emergency Power Supply (EPS)
Power infrastructure	• Power infrastructure layout from generation to rack level • ATS and STS systems • Redundancy levels and techniques • Three-phase and single-phase usage • Power distribution options within the computer room • Power cabling vs. bus bar trunking • Bonding vs. grounding • Common Mode Noise and isolation transformers • Distribution boards, form factors and IP-protection grades • Power quality guidelines • Real power vs. apparent power • How to size and calculate load in the data center • Generators • Static and dynamic UPS systems, selection criteria, how they operate and energy efficiency option • Battery types, correct selection and testing • Thermo-graphics
Electromagnetic fields	• Electrical fields and magnetic fields definitions and units of measurements • Sources of EMF • Effects of EMF on human health and equipment • (H)EMP • Standards • EMF shielding solutions
Equipment racks	• Rack standards, properties, and selection criteria • Security considerations • Power rail/strip options

Cooling infrastructure	• Temperature and humidity recommendations • Cooling measurement units and conversion rates • Sensible and latent heat definitions • Differences between comfort and precision cooling • Overview of different air conditioner technologies • Raised floor vs. non-raised floor cooling • Placement of air conditioner units and limitations to be observed • Supplemental cooling options • Cold aisle/hot aisle containment
Water supply	• Importance of water supply and application areas • Backup water supply techniques
Designing a scalable network infrastructure	• The importance of a Structured Cabling System • Planning considerations • Copper and fiber cable technology and standards • ANSI/TIA-942 cabling hierarchy and recommendations • Testing and verification • SAN storage cabling • Network redundancy • Building-to-building connectivity • Network monitoring system requirements
Fire suppression	• Standards for fire suppression • Detection systems • Various total flooding re-suppression techniques and systems, their benefits and disadvantages • Handheld extinguishers • Signage and safety • Regulatory requirements and best practices
Data center monitoring	• Data center monitoring requirements • EMS vs. BMS • Water leak detection systems • Notification options and considerations
Operational security and safety practices	• Data center security layers • Physical, infrastructure, and organizational security • Safety measures and essential signage
Labelling	• Choosing a labelling scheme • Recommended labelling practices • Network labelling
Documentation	• How to set up proper documentation • Document management policies and procedures
Cleaning	• Cleaning practices for the data center
MTBF/MTTR	• Standards and definitions • Calculation models • The “real” value
Maintenance contracts/SLA/OLA	
EXAM: certified data center professional	

Examination accredited by EXIN

The exam is a 60-minute closed book exam, with 40 multiple-choice questions. The candidate requires a minimum of 27 correct answers to pass the exam.

Recommended next courses

- In CDCS Certified Data Center Specialist (HK259S), participants will gain advanced knowledge to review designs of existing and/or future data centers. This is a "must have" course for those who are expected to manage or be involved in a data center build or renovation project.
- CDFOM Certified Data Center Facilities Operations Manager (HK763S) addresses the full operational aspect of running a high-available data center.

Learn more at
hpe.com/ww/learndatacenter

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