Certified Data Centre Professional (CDCP)

COURSE DESCRIPTION

With few exceptions, enterprises today rely on IT for the delivery of business-critical services - often directly to the end consumer. It is therefore vital that the mission-critical data centre is designed, maintained and operated with high-availability and efficiency in mind. However, most data centres do not meet the full availability, capacity, safety or efficiency requirements that are often demanded. The ever-changing technologies places even greater pressure on data centre managers along with the faster pace at which these changes are required.

The CDCP® course is a 2-day course. It designed to expose participants to the key components of the data centre. It will address how to setup and improve key aspects such as power, cooling, security, cabling, safety, etc, to ensure a high-available data centre.

WHO SHOULD ATTEND?

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

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 centre or facilities environment may be best suited. Participants with no prior experience are also welcome to attend.

ROADMAP

- CDCP – Certified Data Centre Professional
- CDCS – Certified Data Centre Specialist
- CDCE – Certified Data Centre Expert

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COURSE BENEFITS

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

- Choose an optimum site for mission-critical data centre based on current and future needs
- Describe all components that are important for high-availability in a data centre and how to effectively setup the data centre
- 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 centre.
- Review the electrical distribution system to avoid costly downtime
- Enhance cooling capabilities and efficiency in the data centre 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
- Setup effective data centre monitoring ensuring the right people get the right message
- Ensure proper security measures, both procedural and technical, are established to safeguard the organisation's valuable information in the data centre
- Select equipment racks and components suitable for ICT equipment and its cooling requirements
- Select the correct light levels for the various areas of the data centre.
- Select appropriate fire safety/protection controls to detect and suppress potential fire.

COURSE SYLLABUS

The Data Centre, it's Importance and Causes for Downtime

Data Centre Standards and Best Practices

Data Centre Location, Building and Construction

- Selecting appropriate sites and buildings and how to avoid pitfalls
- Various components of an effective data centre and supporting facilities setup

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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 versus bus bar trunking
- Bonding versus grounding
- Common Mode Noise and isolation transformers
- Distribution boards, form factors and IP-protection grades
- Power quality guidelines
- Real power versus apparent power
- How to size and calculate load in the data centre
- Generators
- Static and dynamic UPS systems, selection criteria, how they operate and energy efficiency option
- Battery types, correct selection and testing
- Thermo-graphics
- Renewable Energy Factor (REF)

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Electro Magnetic 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 versus non-raised floor cooling
- Placement of air conditioner units and limitations to be observed
- Supplemental cooling options
- Cold aisle/hot aisle containment
- Liquid immersion cooling
- Cooling concepts: Seasonal Thermal Energy Storage (STER)

Water Supply

- Importance of water supply and application areas
- Backup water supply techniques

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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
- Network redundancy
- Building-to-building connectivity
- Network monitoring system requirements

Fire Safety/Protection

- Standards for fire suppression
- Detection systems
- Various total flooding fire suppression techniques and systems, their benefits and disadvantages
- Handheld extinguishers
- Signage and safety
- Regulatory requirements and best practices

Physical Security and Safety

- Physical security considerations
- Physical safety considerations

Auxiliary Systems

- Data centre monitoring requirements
- EMS, BMS and DCIM
- Water leak detection systems
- Alarm notification

EXAM: Certified Data Centre Professional

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DELIVERY STRUCTURE AND METHODS

The CDCP® course is lectured by an EPI Certified Instructor using a combination of lectures and question-and-answer sessions to discuss participants' specific needs and challenges experienced in their own data centre environments. Participants are able to tap into the extensive experience of the trainer, enabling them to validate and improve their own environments and adding business value. The CDCP® course is available in the following delivery methods:

- ILT – Instructor Led Training
- VILT – Virtual ILT
- TOD – Training On Demand

EXAMINATION

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.

CERTIFICATION

Candidates who successfully pass the exam will receive the official 'Certified Data Centre Professional' certificate. The certification is valid for three years after which the candidate needs to re-certify.

GLOBAL ACCREDITATION & RECOGNITION

The CDCP® course is accredited by EXIN, which is a global, independent and not-for-profit accreditation and examination institute. EXIN's mission is to improve the quality of the IT and data centre sectors, the proficiency of IT and data centre professionals and the IT users, by means of accreditation of course material as well as independent examination and certification.

BICSI recognises CDCP® – Certified Data Centre Professional training for BICSI Continuing Education Credits (CECs). CDCP® certificate holder will gain 13 CECs for all BICSI credentials.

RECOMMENDED NEXT COURSE

To further extend their skills, participants are recommended to take the CDFOM® and CDCS® courses. CDFOM® addresses the full data centre operations management. CDCS® addresses advance design/build knowledge.

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COURSE SCHEDULE

The courses are available in over 60 countries. The classes are available on public schedule as well as private group training. Contact CoverTel for scheduling and team enquiries.

EPI DATA CENTRE TRAINING FRAMEWORK©

The EPI Data Centre Training Framework© provides a structured course curriculum for individuals working in and around data centre facilities and data centre operational management. It addresses the various disciplines required to design and manage a high-availability, efficient data centre. EPI's data centre course curriculum is not only the first in the world, it is also by far the largest in the industry. Many companies have specified these courses as prerequisites for their staff working in and around the data centre and use them as part of their career planning initiatives. Recognised globally, these certifications add value to both companies and individuals.

Foundation

- DCFC – Data Centre Foundation Certificate

Design / Build

- CDCP – Certified Data Centre Professional
- CDCS – Certified Data Centre Specialist
- CDCE – Certified Data Centre Expert
- CNCDP – Certified Network Cabling Design Professional

Maintenance / Operations

- CDFOS – Certified Data Centre Facilities Operations Specialist
- CDFOM – Certified Data Centre Facilities Operations Manager
- CDESS – Certified Data Centre Environmental Sustainability Specialist

Risk

- CDRP – Certified Data Centre Risk Professional
- CDMS – Certified Data Centre Migration Specialist

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Standards/Compliance

- CTLA – Certified TIA-942 Lead Auditor
- CTIA – Certified TIA-942 Internal Auditor
- CTDC – Certified TIA-942 Design Consultant
- CDCP or other approved courses*

ABOUT EPI

EPI is a data centre specialist company of European origin operating world-wide in over 60 countries through direct operations and a large partner network. EPI offers an extensive range of data centre services on auditing, certification and training. EPI's focus is on mission-critical, high-availability environments. Established in 1987, EPI has developed an international reputation for delivering high quality technical expertise, with flexible and innovative services, techniques and methodologies.

All EPI services are aimed at helping customers to:

- Increase **Availability** of their mission-critical infrastructure
- Improve **Efficiency**, **Effectiveness** and **Manageability**
- **Minimise risk** of business interruption

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