



Kursus
3 dage
Nr. 90019 P

DKK 16.999
ekskl. moms

Dato
21-08-2024
02-10-2024
04-12-2024

Sted
Virtuelt kursus
Virtuelt kursus
Virtuelt kursus

Certified Data Centre Specialist (CDCS®)

CDCS® (Certified Data Center Specialist) er det videregående kursus til datacenter professionelle inden for Design/Build. På kurset får du udvidet dine kompetencer indenfor tekniske beregninger på forskellige centrale opgaver i et datacenter, og du bliver en endnu mere værdifuld sparringspartner for leverandører og kan verificere tilbud fra leverandører er korrekte og lever op til kravene. Undervisningen foregår på engelsk og afsluttes med en eksamen.



Kom et niveau højere op

Med få undtagelser er alle virksomheder i dag afhængige af IT for levering af forretningskritiske services – ofte direkte til slutbrugeren. Det er derfor vigtigt, at det missionskritiske datacenter, designes, vedligeholdes og drives med høj tilgængelighed og effektivitet for øje. Virkeligheden er dog, at de fleste datacentre ikke opfylder de fulde krav til tilgængelighed, kapacitet, sikkerhed eller effektivitet, der ofte stilles.

Kurset er udviklet til at få dig op på et niveau, hvor du kan fungere som egnet sparringspartner for leverandører. Du vil være i stand til at validere tilbud fra leverandører for korrekthed, virkning og effektivitet.

CDCS® er en uundværlig certificering for professionelle datacenteradministratorer og -medarbejdere. CDCS® er et krav for personer, der ønsker at blive CDCE® (Certified Data Centre Expert).

CDCS er det andet kursus inden for EPI Design and Build kursusforløbene under EPI Data Centre Training Framework.

Deltagerprofil

Den primære målgruppe til dette kursus er en IT-, driftsleder eller Facilities Manager, der arbejder i og omkring datacentret (repræsenterer både slutkunder og/eller tjenesteudbydere/facilitatorer) og har ansvar for at opnå og forbedre datacentrets høje tilgængelighed og håndterbarhed, såsom: Datacenterledere, Drift/Gulv/Facilitetsledere, datacenter teknikere, netværks-/systemteknikere, sælgere og datacenter konsulenter.

Forudsætninger

Du skal have en gyldig [CDCP® certificering](#) for at kunne deltage på dette kursus, og vi anbefaler at du har et til to års erfaring i et datacenter.

Udbytte

- Understand the design life cycle of data centres and the stages involved
- Discuss the data centre requirements to ensure that these requirements are met
- Understand the various building considerations from bullet proofing, raised floor and how to read a Single Line Electrical Diagram
- Choose the correct UPS and parallel configuration
- Understand how to calculate battery banks, validate offered configurations to ensure they meet requirements
- Understand what distance to keep to avoid EMF issues for human safety and equipment disturbances
- Understand the fundamental cooling setup, CFM, Delta-T and other important factors
- Understand contamination factors and limitations

Det får du på arrangementet

- Certificering/eksamen
- Erfaren underviser
- Fuld forplejning
- Gratis parkering
- Materiale på engelsk
- Undervisning på engelsk
- Certificeret underviser
- Certificeret træningsorganisation

Indhold

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, the fact is most data centres do not meet the full availability, capacity, safety, or efficiency requirements that are often demanded.

The Certified Data Centre Specialist is a three-day course designed to bring participants to the level of a suitable sparring partner with suppliers. They will be able to verify offers provided by vendors for correctness, effectiveness, and efficiency. CDCS® is a must-have certification for professional data centre managers and personnel. CDCS® is a pre-requisite for individuals wishing to achieve the elite CDCE® (Certified Data Centre Expert) status.

Data Centre Design/Life Cycle Overview

- Overview of the phases of a data centre life cycle
- Planning, re-alignment and continuous improvement

Standards and Rating Level Definitions

- Rating level history
- Standards and guidelines compared (TIA-942, ISO 22237, EN 50600, UTI)
- Rating level definitions
- Redundancy options (N+1), 2N, 2(N+1)
- Concurrent Maintainability/Compartmentalisation



- Example configurations
- Substation and feed requirements
- Maintenance options
- Operational processes guidelines/standards
- Skill development

Building Considerations

- Building location considerations
- Floor and hanging loads requirements
- Fire rating for walls and glass
- Blast protection
- Bullet proofing
- Forced entry protection

Advanced Raised Floor & Suspended Ceiling

- Raised floor installation guidelines
- Techniques to install a proper and leveled raised access floor
- Common mistakes
- Choosing the right tiles and their locations
- Seismic-mitigating floor constructions
- Choosing the correct suspended ceiling

Advanced Power

- Power infrastructure layout
 - Formulas which you should know for the data centre
 - Single Line Electrical diagrams; how to read to ensure key components are present for protection
 - Over current protection devices (MCB/MCCB/VCB/ACB/Fuses) definitions and what to use where
 - Earth Leakage devices (RCB/RCD/ELCB/GFCI/ALCI/RCBO), definitions and what to use where
 - Sizing of protective components
 - Lightning strikes and surge protection devices (TVSS/SPD), how they operate, where to use and how to install
 - Power cabling and cable run considerations
 - PDU/DB setup and minimum requirements
- Generators
 - Generator types: Standby/Prime/Continuous
 - Component make up and functions
 - Fuel storage and calculation
 - Paralleling of gen-sets
 - Generator room/area requirements
- UPS Systems
 - Required specifications for UPS systems
 - How to read data sheets and select the correct UPS
 - Requirements for parallel configurations and avoid pitfalls such as single point of failures
 - How parallel installation should be done, classic mistakes made by installers and how to avoid these
- Harmonic Filters
 - Active/Passive filters and their application
- Battery Banks
 - Battery bank terminology
 - Designing battery banks, how to calculate, and double check the battery bank to be installed
 - Battery charging pitfalls and ensuring the right charger is being installed and used
 - Using parallel battery banks; how to properly install them, limitations and risks when using batteries in parallel
 - How to test batteries correctly and make decisions on cell/block or string replacement
 - Battery casing choices; ABS, V0, V1, V2
 - Alternative energy storage; flywheel, re-usable cell, compressed air UPS, etc.

Advanced Electro Magnetic Fields



- Sources of EMF
- Difference between single, three phase and bus-bar EMF
- Options available to measure EMF and how to interpret the results from single-axes and composite measurements
- Guidance on safe distance for equipment and humans
- Calculation of EMF attenuation factor for shielding material permeability and saturation factors

Advanced Cooling

- Important definitions; dry-bulb, wet-bulb, dew-point, RH, sensible and latent heat
- Psychrometric chart and ASHRAE recommendations
- Environmental class definitions and thermal specifications
- Temperature/humidity measurements guideline
- Heat dissipation methods
- Altitude impact on temperature intake to ICT equipment
- Floor plan setup for effective cooling
- Differences in tile surface and supporting structure and the air-flow performance impact
- Rack door construction and the flow performance impact
- Equipment Delta-T and its impact
- Optimising airflow
- Thermal units conversions
- Calculations for air volume displacement (CFM/CMH)
- Cooling capacity calculations
- Air-conditioning selection
- De- / humidifying options
- Air conditioning efficiency
- SHR impact on cost saving
- Efficiency indicator
- New cooling principle and techniques (Submerged, VSD/VRF/ECF/water- and air side economisers)
- Redundancy guidelines for air-conditioners avoiding classic misconceptions and mistakes for meeting ANSI/TIA-942 compliant designs
- Installation requirements
- Connections to fire panel and EPO
- Commissioning of air conditioners
- Set points and calibration
- CFD (Computational Fluid Dynamics)

Advanced Fire Protection

- The fire triangle and elements to stop a fire
- Detection systems in detail (VESDA, VIEW, smoke sensors)
- Considerations for installation of sensors
- Proper testing of smoke sensors
- Water based systems i.e. deluge, wet-pipe, dry-pipe, pre-action and why most of them don't work and how to detect this
- Details on Inert and Halocarbon systems and how to select the correct system for your data centre
- How to calculate the gas content ensuring the appropriate level is installed to suppress the fire including safety considerations
- Other requirements for gas systems such as release times, hold times, pipe install requirements and other important factors
- Requirements for the fire detection panel
- Installation verification, methods, what to check and how
- New advanced fire suppression technologies

Design and Install Scalable Networking Cabling System

- ANSI/TIA942 cabling structure topology
 - Copper and fibre cabling



- ToR, EoR Design
- Intelligent patching systems
- Installation best practice such as routing, bending radius, separation from power, containment fill ratio, fiber link loss calculator, bonding and grounding requirement
- Standard for telecommunications labeling and administration

Environmental Specifications and Contamination Control

- Acoustic noise effects, regulations, specifications and limits
- Data centre contaminations and classifications
- Measurements, standards and limits
- Preventive measures and avoidance

Data Centre Efficiency

- Business drivers to go Green
- Sustainability versus high-availability
- Green standards and guidelines
- Power Usage Effectiveness (PUE), values, classes, considerations and improvements
- Open Compute Project (OCP)
- Saving on cooling infrastructure
- Savings on light infrastructure

Virtuelt kursus

Du kan vælge at deltage på dette kursus virtuelt med en live underviser sammen med kursister fra hele verden via din egen computer. Eksamen kan tages som en online eksamen senest 7 dage efter kursets afholdelse. Du vil modtage en eksamensvoucher.

Online kursus TOD

Dette kursus kan også tages som Training On Demand som er EPI's online version af kurset. Kontakt os for flere informationer.

Certificering

- Spørgsmål: 60 spørgsmål
- Tid: 1½ time
- Format: closed book og multiple choice baseret

Der kræves en score på 45/60 for at bestå.

Efter beståelse af denne eksamen vil du modtage det internationalt godkendte og anerkendtes "Certified Data Centre Specialist" certificering (CDCS®). Eksamen er inkluderet i prisen.

CDCS®-certificeringen er internationalt anerkendt af EXIN.

CDCS®-certificeringen er gyldig i 3 år, herefter skal den re-certificeres.





UNDERVISER

Simon

Simon er fransk og tysk statsborger og en veteran i internetbranchen. Han har mere end 20 års erfaring i at arbejde med internetudbydere, leverandører, datacentre og leverandører af hardware og software i rollen som ledelseskonsulent i en række organisationer. Simon er Certified EPI Instructor i CDCP, CDCS og CDFOM. Han har afholdt kurser i Europa, Sydafrika og Etiopien for EPI, og han har altid modtaget god feedback fra kursusedtagerne.

Har du faglige spørgsmål så kontakt



Malene Kjærsgaard
+45 72202523
mch@teknologisk.dk