DATA CENTER OPERATIONS MANAGER

Duration
5 Days (40 Hours)

Mode
Virtual & In-Person

Certifications
3 Certifications

Prerequisites
None

The Data Center Operations Manager (DCOM)® course generates distinguished data center operational managers, planners, operations personnel, service providers, and mentors and enables them to have leading roles in proactive mission-critical data center management, maintenance, and operations.

What You Will Learn

- Advanced data center management principles
- Proactive and preventive data center maintenance
- Analyze data center policies and procedures
- Effective data center operation regimes
- LDay-to-day data center operational management
- HR, vendor, 3rd-party, SLA & OLA management
- Advanced data center efficiency concepts
- Key data center optimization mechanisms

Who Should Take This Course?

- Data Center Professionals
- Data Center Specialists
- Data Center Managers
- Operations and NOC Personnel
- Data Center Supervisors
- Data Center Technicians
- Data Center Strategists
- Data Center Architects

Christopher Neil
Principal Program Manager
Microsoft

Microsoft

Cross knowledge that's gained from this kind of opportunity is invaluable in terms of educating not only the community members but the community at large.

DAY 1

Syllabus

Introduction To Data Centers

- Data Center History
- Data Center Definitions
- The Data Center Beast
- Data Center Downtime & Outage
- Current Data Center Standards
- Future Of Data Center Standards

The Infinity Paradigm

- Application Ecosystem (AE)℠
- Core & Pyramid Models
- The Organization
- The 7 Abstraction Layers
- Application Layer
- Platform Layer
- Compute Layer
- ITI Layer
- SFI Layer
- Site Layer
- Topology Layer
- Application Delivery Model (ADM)
- Application Delivery Infrastructure (ADI)
- Data Center Node (DCN)
- Logical Infrastructure
- Physical Infrastructure

Grading Systems

- Data Center Tiers & Classes
- Data Center Grade Levels
- AER, OER, EER, RER, SER
- Efficacy Score Rating

Data Center Development

- The 12-Phase Data Center Development Process

Site Civil & Architecture

- Data Center Site Selection & Criteria
- Data Center Site Proximity, Hazard & Risks
- Data Center Topology
- Data Center Structure
- Data Center Construction

Data Center Spaces

- Data Center Interior Fit-out
- Data Center Space Relationships
- Data Center Raised Floor System
- Racks & Cabinets
- Computer room requirements
- Data Center Cabling Spaces ER, MDA, HDA, ZDA and EDA
- Data Center Grounding & Bonding
- Data Center Earthing
- Batteries room
- UPS room
- Network Operations Center
- Security rooms
- Staging & Storage rooms
- Data Center Support Areas

Redundancy

- Redundancy Definition
- Redundancy Levels
- Redundancy Examples

Power Systems

- Logical Electrical Flow
- DC, AC, W, AV Rates And Concepts
- Utility Service
- High Voltage Systems
- Switchgear
- Transformers
- Low Voltage Systems
- UninterrBatch Submissionble Power Supply (UPS) Systems
- UPS Configurations
- Battery And Battery Types
- Generators
- Fuel Tanks
- Power Distribution
- ATS, STS
- Power Cabling
- Busbar Trunking System (BTS)
- EPO
- Grounding
- Lightning Protection System

Syllabus

Alternative Power Sources

- Solar Power
- Wind Power
- Fuel Cells
- Renewable Energy Farms

DAY 2

Electro Magnetic Fields

- Electric Fields Explained
- Magnetic Fields Explained
- EMF, EMI Possible Sources
- Mitigation Examples

Mechanical Systems

- Environmental Air
- Cooling Capacity
- Precision Cooling
- Direct Expansion (DX) Systems
- Non-DX Systems
- Cooling Methodologies
- Cold-Aisle / Hot- Aisle
- CRAC/CRAH
- Cooling Topologies
- Open CRAC Systems
- Aisle Containment (Cold & Hot)
- In-Row Cooling
- In-Rack Cooling
- Cooling Towers
- Chillers

Data Center Water Supply

- Water Concepts
- Water Sources
- Water Storage
- Water Treatment

Data Center Fire Protection

- Fire Types And Classes
- Smoke And Heat Detection
- Aspiratory Detection And Sensing
- Sprinkler Systems
- Gas Suppression Systems & Agents (FM200, Novec, Etc.)
- Fire Prevention Technology

Data Center Structured Cabling

- Cabling Layout
- Patching & Termination
- Labeling
- Intelligence

IT Infrastructure

- System
- Storage
- Networks
- Virtualization & Cloud
- External Telecom Connectivity
- High Availability Designs

Telecommunication

- Definition
- Parameters
- Connection Types
- Metro Networks
- High Availability Designs

Data Center Security

- Definition
- Physical Infrastructure Security
- CCTV, Access Control, Security Vestibules, Etc..
- Security Protocols & Procedures
- IT Infrastructure Security

Data Center Efficiency

- Identifying Cost Of Energy
- Power Usage
- PUE, DCIE

DAY 3

Application & Hosting Models

- Application Considerations
- Multi-Tier Application Delivery
- Hosting Models

Monitoring & Management

- General Concepts
- Goals
- Systems

Introduction To Data Centers Operations

- Data Center Operations Overview
- Data Center Operations Definition
- Data Center Operations Activities
- Operational Availability

Compliance

- Data Center Assessment
- Data Center Audit
- Data Center Certification
- Standards, Frameworks, BPs
- The Infinity Paradigm (Review)
- Other Standards, Frameworks & BPs

Data Center Governance

- Governance Definition
- Governance Objectives, Goals & Processes
- Management Objectives, Goals & Processes
- Governance & Menagement Transition Matrix

Data Center Risk Management

- Risk Factors
- Risk Manegement Definition & Objectives
- Quantitative Risk Assessment
- Qualitative Risk Assessment
- Risk Treatment
- Residual Risks
- Risk Assessment Methodologies
- NIST-800-30
- OCTAVE
- CRAMM
- ISO27005
- FRAP
- Spanning Tree
- Failure Mode & Effect Analysis

Business Continuity

- BC Overview
- BC Phases
- Threat Assessment And Risk MAnagement
- Business Impact Analysis, RPO, RTO
- Disaster Recovery & DR Strategies
- Crisis Management
- Testing, Training & Awarness
- Maintenance
- BC Advice

DeWayne Moore
Senior Data Center Architect
Visa

Awesome course. It's caused a paradigm shift in thinking, I really enjoyed the Infinity Model and it opened my eyes to a lot of things. Will definitely come back.

DAY 4

Quality Systems

- Quality Assurance
- Quality Control
- Quality Improvement

Organizational Structure

- Data Center Organizational Structure
- Open Process Framework
- Standard DC Organizational Chart
- Data Center Business Manager
- Data Center Topology Manager
- Data Center Operations Manager
- Data Center Node Operations Manager
- Data Center Node Manager
- Data Center SFI Manager
- Data Center ITI Manager
- Data Center Floor Manager
- Data Center Site Manager
- Data Center NOC Manager
- Data Center S&S Manager

Human Resources

- Principles Of DC HR
- Job Description
- Recruitment
- Benefits & Compensation
- Orientation & Training
- Performance & Evaluation
- Retention Plan
- Dismissal
- Job Rotation
- Skills Redundancy Plan
- Data Center HR Challenges

Data Center Management

- Cost Management
- Asset Management
- Equipment Lifecycle Management
- Buy Or Lease Evaluations
- Warranties
- Vendor Management
- RAS, RFP, RFI, RFT, RFQ, IFB
- Crisis Management

Service Availability

- Service Level Agreement - SLA
- Service Level Report - SLR
- Operational Level Agreement - OLA
- Operational Level Report - OLR

Data Center Efficiency

- PUE, DCIE, SEER, EER, COP, SPF
- PUE Loopholes, PUE V2
- Green Initiatives
- Enhanced Cooling Efficiency
- Increased Power Efficiency
- Virtualization

Day-To-Day Operation

- Data Center Policies & Procedures
- Data Center SOPs
- Data Center Checklists
- Data Center WOs
- Data Center SOWs
- Data Center PTWs
- Data Center Floor Management
- Data Center Inventory Management
- Commissioning & Decommissioning
- Labeling Matrix & Methods
- Business Office Management
- Documentation Management
- Data Center Micro Cleaning
- Data Center Pest Control
- Facilities Management
- Computational Fluid Dynamics
- Real-Time Monitoring
- Thermal Imaging
- Cooling System Maintenance Regime
- Fire Protection Systems Management
- Electrical Systems Maintenance Regime
- Generator Testing
- UPS Management & Testing
- IT Operations Management
- ITSM, ITIL V.3
- Loading Dock
- Shipping & Receiving Area
- Staging Area

DAY 5

Syllabus

Capacity Planning & Management

- Capacity Management Concepts
- Cost-Value-Efficiency Analysis
- ABC
- Capacity Management Activities
- Capacity Management Process
- ETL
- Facility Capacities & Load
- Structural Capacities & Load
- Telecom Capacities & Load
- IT Capacities & Load
- Capacity Benchmarking
- Capacity Trending
- Capacity Modeling
- Capacity Analytics
- Capacity Planning Tools

Monitoring & Management

- M&M Goals
- Monitoring & Management Systems
- Environment Monitoring System (EMS)
- Electrical Power Management System (EPMS)
- Building Management System (BMS)
- Network Management System (NMS)
- Data Center Infrastructure Management (DCIM)
- Business Service Management (BSM)
- M&M Reporting & Analytics
- Support & Help Desk

Maintenance & Repair (M&R)

- General Concepts
- M & R Levels
- Reactive
- Unplanned
- Planned
- Intelligent
- Infinity
- Maintenance Contracts

Safety & Security

- Safety Instructions
- Emergency Planning
- Security Aspects
- Physical Security
- Visitor Access
- IT Security

Examination