BLACKBIRD FOR TRAINING

Data Center Build and Design

11 – 15 July 2027
Cairo (Egypt)



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Introduction

Welcome to the Comprehensive Data Center Design and Management Course! Data centers form the backbone of modern IT infrastructure, ensuring seamless data storage, processing, and management for organizations across the globe. This course is meticulously crafted to equip participants with a robust understanding of data center design and build concepts, data center operations, and best practices for data center management. By combining theoretical insights with practical applications, you will learn how to create efficient, reliable, and sustainable data centers that meet the demands of a fast-paced technological landscape.

Course Objectives

By the end of this course, participants will be able to:

- Understand Core Concepts: Grasp the fundamental principles of data center design and build.
- Learn Best Practices: Apply industry-leading techniques for data center management to optimize operations and reliability.
- Explore Emerging Technologies: Stay ahead with the latest advancements in data center technology and innovations.
- Acquire Design Skills: Master the art of creating scalable, future-proof, and sustainable data center solutions.
- Develop Maintenance Strategies: Implement effective data center maintenance plans to ensure operational continuity.
- Focus on Sustainability: Build energy-efficient green data centers to promote environmental sustainability.

Course Outlines

Day 1: Introduction to Data Centers



- History and Evolution of Data Centers:
  - Explore how data centers have transformed over time into indispensable components of IT infrastructure.
  - Learn the different types of data centers, including enterprise, colocation, and hyperscale models.
- What is a Data Center:
  - Define the role and importance of data centers in modern business environments.
- Data Center Standards and Compliance:
  - Study industry standards such as TIA-942 and Uptime Institute guidelines for data center certification and compliance.
- Introduction to Data Center Design Concepts:
  - Understand the architecture and layout required for efficient data center building.

Day 2: Data Center Infrastructure

- Power Systems and Electrical Design:
  - Explore power system designs that ensure uninterrupted data center operations.
- Cooling and Environmental Controls:
  - Learn strategies for maintaining optimal environmental conditions for data center equipment.
- Networking and Connectivity:
  - Design scalable and reliable network solutions to support high-capacity data flows.
- Data Storage Solutions:
  - Understand how to optimize storage architectures for performance and cost-efficiency.
- Security and Access Control:
  - Examine methods for ensuring data center security through advanced access control systems.

Day 3: Data Center Design Principles

- Space Planning and Layout:
  - Learn how to design layouts that maximize efficiency and utilization of resources.
- Redundancy and Resiliency:
  - Understand models like N+1, 2N, and 2N+1 to ensure data center reliability during failures.
- Energy Efficiency in Data Centers:
  - Implement sustainable practices to enhance data center efficiency.
- Risk Management and Disaster Recovery:
  - Design recovery plans to safeguard critical data in the event of disasters.

Day 4: Construction and Implementation



- Project Management for Data Center Builds:
  - Learn how to plan and execute a successful data center build.
- Vendor Selection and Contract Management:
  - Strategies for managing relationships with contractors and suppliers.
- Construction Milestones:
  - Identify critical phases in data center building projects.
- Testing and Commissioning:
  - Conduct testing procedures to ensure the readiness and reliability of data center infrastructure.

Day 5: Operations and Maintenance

- Daily Operations and Monitoring:
  - Gain insights into managing daily tasks and monitoring systems for optimal performance.
- Data Center Maintenance Best Practices:
  - Learn preventive maintenance techniques to reduce downtime.
- Incident Management:
  - Develop troubleshooting skills to resolve operational issues swiftly.
- Capacity Planning and Upgrades:
  - Plan for future expansion and upgrades to meet growing demands.
- Documentation and Compliance:
  - Maintain proper records to meet legal and industry compliance standards.

Why Attend this Course? Wins & Losses!

- Acquire advanced skills in data center design and operational management.
- Build expertise in creating sustainable, scalable, and efficient data center solutions.
- Gain practical knowledge of industry standards and certifications like TIA-942.

Conclusion

This course is a gateway to mastering the art and science of data center design and management. Whether you're planning a data center build, optimizing operations, or exploring innovations in data center technology, this program provides the expertise you need to excel. By the end of this training, you'll be equipped with actionable knowledge to design, construct, and maintain high-performing, sustainable data centers that align with global standards.

Join us to lead the way in transforming the global data center industry and achieving operational excellence!

