Emerging Technologies

Certified Kubernetes - AKS Professional Program

Curriculum

Program Outline :

Module 1: Fundamentals of Kubernetes & AKS

1. **Introduction to Kubernetes**
    - Core principles and architecture of Kubernetes.
    - Key components and functionalities of Kubernetes.
    - Benefits and challenges of using Kubernetes for container orchestration.
2. **Azure Kubernetes Service (AKS) Overview**
    - Exploring the features and benefits of AKS.
    - Understanding AKS architecture and deployment models.
    - Best practices for managing AKS environments.

Module 2: Advanced Kubernetes Solutions

3. **Designing Kubernetes Solutions**
    - Best practices for designing scalable and reliable Kubernetes solutions.
    - Applying Kubernetes architecture patterns and principles.
    - Selecting the appropriate Kubernetes services for specific use cases.
4. **Kubernetes Security and Compliance**
    - Ensuring security and compliance in Kubernetes environments.
    - Implementing identity and access management with Kubernetes RBAC.

- Understanding data protection, encryption, and compliance requirements.

5. **Optimizing Kubernetes Performance**
    - Techniques for optimizing performance and scalability of Kubernetes solutions.
    - Implementing caching, load balancing, and other performance-enhancing services.
    - Monitoring and managing resource usage to optimize costs.
6. **Kubernetes Deployment and Management**
    - Managing Kubernetes deployments using tools like Helm, Kubectl, and Terraform.
    - Automating deployments and configuration management.
    - Best practices for managing and monitoring Kubernetes resources.

Module 3: Practical Applications

7. **Hands-on Kubernetes Projects**
    - Real-world projects to apply Kubernetes and AKS skills.
    - Designing and implementing containerized solutions for various scenarios.
    - Collaborating with peers and mentors to solve complex challenges.
8. **Kubernetes Integration**
    - Integrating Kubernetes solutions with existing on-premises and cloud systems.
    - Using hybrid cloud solutions to create seamless integrations.
    - Best practices for data migration and synchronization.

Module 4: Exam Preparation

9. **Certification Exam Preparation**
    - Comprehensive preparation for Kubernetes and AKS certification exams.
    - Practice exams and review sessions.
    - Exam tips and strategies for success.
10. **Advanced Kubernetes Techniques**
    - Deepening knowledge and exploring advanced Kubernetes capabilities.

- Implementing advanced networking, security, and data management solutions.

Elective Modules

11. **Data Ethics and Privacy**
    - Ethical considerations, privacy laws, and compliance strategies.
12. **AI for Kubernetes**
    - Implementing AI solutions in Kubernetes environments.
13. **Big Data Solutions with Kubernetes**
    - Managing big data applications in Kubernetes environments.
14. **Kubernetes DevOps Practices**
    - CI/CD pipelines, automation, and containerization with Kubernetes.
15. **Kubernetes Project Management**
    - Leading Kubernetes projects and ensuring successful delivery.
16. **IoT Integration with Kubernetes**
    - Integrating Kubernetes solutions with IoT devices.

Websites:

- https://chools.in/
- https://ramaqchools.com/
- https://www.choolsgroup.com/