

Rancher Manager 2.8 for Rancher Prime Operations (RAN201v2.8)

Course Duration: 24 Hours

Course code: RAN201v2.8

1. Course Overview

This three-day course focuses on the operational management of Kubernetes environments using Rancher Manager 2.8 (Rancher Prime). It equips learners with the skills required to manage, monitor, secure, and troubleshoot Kubernetes clusters in day-to-day enterprise operations. The course emphasizes hands-on experience in workload management, cluster monitoring, access control, and maintaining high availability across multi-cluster environments.

2. What you'll learn?

By the end of the course, you will be able to:

- Operate and manage Kubernetes clusters using Rancher Manager 2.8
- Monitor cluster health and application performance
- Manage workloads, namespaces, and resources
- Implement security policies and role-based access control (RBAC)
- Perform cluster maintenance and upgrades
- Troubleshoot common Kubernetes and Rancher issues
- Manage multi-cluster and multi-cloud environments
- Automate routine operational tasks

3. Target Audience

- Kubernetes administrators
- DevOps and platform engineers
- Cloud and infrastructure engineers
- IT operations professionals managing container platforms

4. Pre-Requisites

Before taking this course, you should have:

- Basic understanding of Kubernetes concepts
- Familiarity with containers and Docker
- Knowledge of Linux system administration
- Basic networking knowledge

5. Course content

Module 1: Course Introduction

- Introduction and course logistics
- Overview of Rancher Prime operations
- Course objectives and lab setup

Module 2: Rancher and Kubernetes Operations Overview

- Overview of Kubernetes architecture
- Rancher Manager operational capabilities
- Cluster lifecycle overview
- Operational use cases in enterprises

Module 3: Cluster Access and Management

- Accessing clusters through Rancher UI and CLI
- Managing cluster configurations
- Node monitoring and maintenance
- Namespace and resource organization

Module 4: Workload Operations

- Managing deployments, pods, and services
- Scaling and updating workloads
- Rolling updates and rollbacks
- Managing stateful applications

Module 5: Networking and Service Management

- Service types and networking basics
- Ingress management and routing
- DNS and service discovery
- Troubleshooting network issues

Module 6: Storage Operations

- Persistent storage concepts
- Managing persistent volumes and claims
- Storage classes and dynamic provisioning
- Handling storage-related issues

Module 7: Monitoring and Logging

- Monitoring clusters with Rancher tools
- Integrating Prometheus and Grafana
- Centralized logging solutions
- Alerts and performance tracking

Module 8: Security and Access Control

- Role-Based Access Control (RBAC)
- Authentication and authorization
- Managing secrets and configurations
- Securing workloads and clusters

Module 9: Cluster Maintenance and Upgrades

- Performing cluster upgrades
- Node maintenance and draining
- Backup and restore procedures
- Ensuring high availability

Module 10: Multi-Cluster Management

- Managing multiple clusters with Rancher
- Cluster grouping and governance
- Multi-cloud operations
- Policy enforcement across clusters

Module 11: Automation and Operational Efficiency

- Automating routine tasks
- Scheduling operations
- Integration with CI/CD pipelines
- Introduction to GitOps

Module 12: Troubleshooting and Issue Resolution

- Diagnosing cluster issues
- Debugging workloads and services
- Analyzing logs and metrics
- Resolving connectivity and performance issues

Module 13: Performance Optimization

- Resource optimization strategies
- Scaling clusters and workloads
- Identifying bottlenecks
- Best practices for performance tuning

Module 14: Compliance and Governance

- Implementing governance policies
- Security and compliance standards
- Audit and reporting
- Managing enterprise policies

Module 15: Capstone Lab and Real-World Scenarios

- Managing a production Kubernetes environment
- Monitoring and securing clusters
- Troubleshooting real-world issues
- Final project and assessment

