ICM Project Description

Project Overview

This project focuses on mastering VMware vSphere, a leading virtualization platform used to manage cloud infrastructure and virtualized environments. The project offers hands-on experience with deploying, configuring, managing, and optimizing vSphere components such as ESXi hosts, virtual machines (VMs), networking, and storage. A key component of the project is the deployment of VMware vCenter Server to centrally manage two ESXi hosts, enabling enterprise-level administration and resource orchestration.

Project Objectives

- Understand the core architecture and functionality of VMware vSphere.
- Install and configure VMware ESXi on physical or virtual hardware.
- Deploy and configure VMware vCenter Server to manage multiple ESXi hosts.
- Create and manage virtual machines efficiently.
- Implement basic troubleshooting strategies, VM migration, and backup solutions.
- Demonstrate real-world application deployment and cross-host communication.

Scope of Work

1. Installation & Configuration

- Install and configure two VMware ESXi hosts
- Deploy and configure VMware vCenter Server
- Configure network settings

2. vCenter Integration

- Add ESXi hosts to the vCenter inventory
- Create and organize datacenters
- Centralize management of VMs

3. Virtual Machine Management

- Create, modify, and optimize virtual machines

4. Migration & Backup

- Perform live VM migration between ESXi hosts
- Use snapshots for stateful backups
- Implement basic VM backup strategies using vSphere tools

5. Application Deployment & Testing

- Deploy a RESTful API or web service on a VM running on ESXi Host 1
- From a VM on ESXi Host 2, test the API using tools such as Postman, curl, or browser

- Validate network connectivity and inter-host communication
- Document API responses and test scenarios as part of the lab report