



CSE 816 : Software Production Engineering  
Final Project

## **CSE 816 : SPE Final Project Report**

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# 1 Project Description

This section provides an overview of the project's purpose, goals, and scope. It outlines the motivation behind the project and the specific DevOps practices implemented to achieve the desired outcomes.

## 2 System Components

This section describes each component of the system, including:

- Source code repository and version control system: Git and GitHub
- CI/CD pipeline tools: Jenkins and GitHub Hooks
- Containerization : Docker
- Configuration management : Ansible
- Monitoring and logging : Grafana and Prometheus
- Deployment platform : Kubernetes

## 3 System Diagram

This section presents the architecture of the system, showing the interaction between components in the DevOps pipeline.

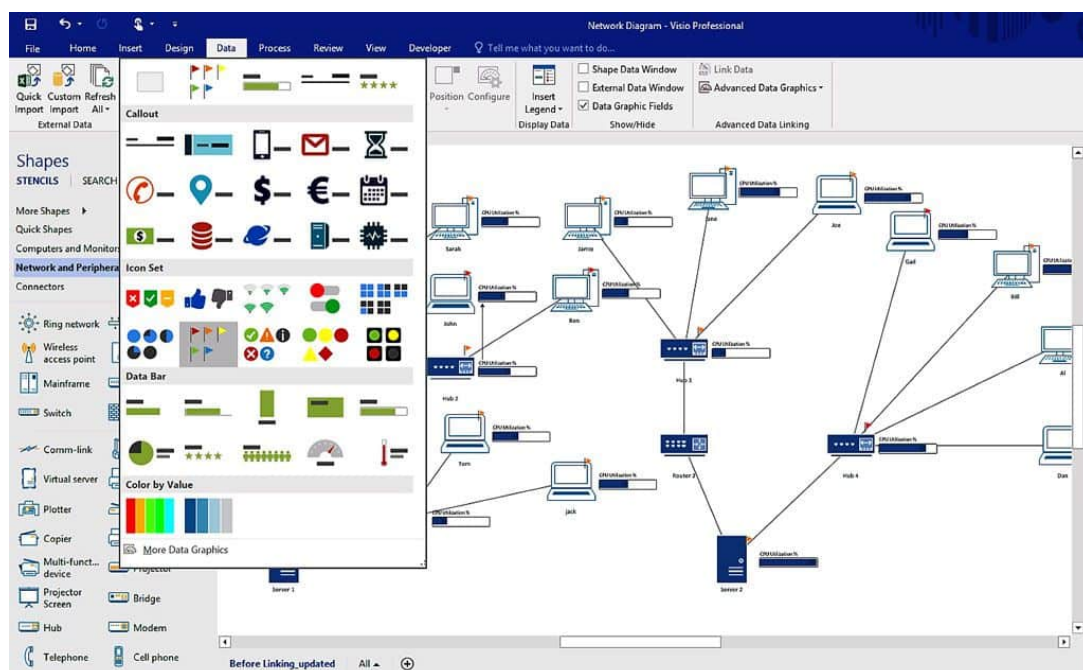


Figure 1: System Architecture Diagram

## 4 Implementation

This section details the steps taken to implement the system. It includes:

- Setting up the repository and initial project structure
- Creating and automating the CI/CD pipeline
- Building and pushing Docker images
- Configuring infrastructure with Ansible
- Deploying the application on the target environment
- Integrating monitoring tools