TECHNICAL REPORT

System Architecture Analysis: Cloud-Native Platform

Report No.: TR-2025-001

Prepared by:
Engineering Team

November 2025

Classification: Internal
Project Code: CN-2025-Q4

Contents

Chapter 1

Executive Summary

This technical report describes the architecture and implementation of our cloud-native platform.

Key Findings:

- Achieved 99.9% uptime across all services
- Reduced latency by 45% through optimization
- Successfully scaled to handle 10M requests/day

Chapter 2

Introduction

2.1 Background

Our organization needed a scalable, reliable platform to support growing user demand.

2.2 Objectives

The primary objectives are:

1. Design highly available microservices architecture
2. Implement automated deployment pipeline
3. Ensure security and compliance standards

Chapter 3

System Architecture

3.1 Overview

The system consists of multiple microservices deployed on Kubernetes, with Redis caching and PostgreSQL databases.

Chapter 4

Implementation

4.1 Technology Stack

- Backend: Node.js, Python
- Frontend: React, Next.js
- Infrastructure: AWS, Kubernetes
- Monitoring: Prometheus, Grafana

Chapter 5

Results

5.1 Performance Metrics

Table 5.1: System Performance

Metric	**Target**	**Actual**
Uptime	99.9%	99.95%
Latency	¡100ms	65ms
Throughput	10M/day	12M/day

Chapter 6

Conclusion

6.1 Summary

This report presented our cloud-native architecture which successfully met all performance and reliability targets.

Bibliography

[1] Kubernetes Documentation. (2025). *kubernetes.io*