Project: METAL SNAKE

Quality Management Plan

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Estimated Completion Date: 24/10/2024

Estimated Project Duration: 17 Weeks

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1. Executive Summary

1.1. Purpose

The purpose of the Quality Management Plan is to define the approach to ensuring that Project: METAL SNAKE meets its quality objectives. This plan outlines how quality standards will be established, monitored, and controlled to ensure that the on-premises cybersecurity lab with web hosting and supporting cloud infrastructure meets stakeholder expectations.

1.2. Overview

The quality management approach for Project: METAL SNAKE includes detailed quality planning, assurance, and control processes. Quality metrics will be tracked throughout the project, and regular reviews will be conducted to assess performance against quality objectives. The ultimate goal is to deliver a secure, reliable, and high-performing infrastructure.

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2. Cost Management Approach

2.1. Quality Standards

The following quality standards will be adhered to throughout Project: METAL SNAKE.

- Compliance with industry best practices for cybersecurity, including regular security audits.
- Adherence to performance standards, ensuring that network and server performance meets operational requirements.
- Usability and accessibility standards for system interfaces and documentation.
- Regulatory compliance with data protection laws (e.g. Australian Privacy Act, GDPR for client websites).

2.2. Quality Goals

Quality goals for Project: METAL SNAKE include:

- Achieving 99.9% uptime for critical business services hosted on the on-premises infrastructure.
- Ensuring that all deliverables, including network components and documentation, are defect-free.
- Meeting or exceeding security benchmarks, including successful penetration tests and vulnerability scans.
- Ensuring high user satisfaction with system usability and performance.

2.3. Acceptance Criteria

The following acceptance criteria must be met for project deliverables to be accepted:

All system components (e.g. Raspberry Pi devices, firewall, servers) must be fully operational, with no critical defects.

Network performance must meet a minimum throughput of 100 Mbps for business-critical services.

Security tests must confirm that the infrastructure is protected against known vulnerabilities.

All documentation must be clear, comprehensive, and published on GitHub for replication by others.

3. Quality Management Approach

3.1. Quality Planning

Quality planning for Project: METAL SNAKE involves identifying quality standards based on cybersecurity best practices, performance benchmarks, and stakeholder requirements. These standards will be integrated into the project plan, with specific tasks assigned to ensure compliance. Key metrics will be established to measure quality, and these will be tracked throughout the project.

3.2. Quality Assurance (QA)

Quality assurance activities will focus on ensuring that processes are in place to deliver quality outcomes. These activities include:

- **Process Audits:** Regular audits of project processes to ensure that quality standards are being followed.
- **Peer Reviews:** Reviews of project deliverables (e.g. network configurations, documentation) by team members to identify potential quality issues.
- **Security Audits:** Regular security audits to ensure that the infrastructure complies with cybersecurity standards and best practices.

3.3. Quality Control (QC)

Quality control activities will focus on monitoring and measuring specific project outputs to ensure they meet quality standards. These activities include:

- **Testing:** Functional, performance, and security testing of the networks, servers, and cloud-based services.
- **Inspections:** Inspections of physical hardware installations to verify that they are completed to specification.
- **Defect Tracking:** Logging and tracking any defect identified during testing or inspections, and ensuring timely resolution.

4. Roles and Responsibilities

The organization is a one-person business (with an intern), so the same person will be the Project Manager, QA and QC lead, and most of the project team. Responsibilities are planned separately in case the organizational structure changes in the future.

4.1. Project Manager

The Project Manager is responsible for overall quality management, including ensuring that quality planning, assurance, and control activities are conducted throughout the project lifecycle and that all deliverables meet the required quality standards. The Project Manager will also coordinate with the project team and stakeholders to ensure that quality objectives are met.

4.2. Quality Assurance Lead

The QA Lead is responsible for overseeing all quality assurance activities, including process audits, quality reviews, facilitating peer reviews, and ensuring that quality standards are followed throughout the project. The QA Lead will work closely with the project team to ensure that quality is built into the project from the beginning.

4.3. Quality Control Lead

The QC Lead is responsible for implementing quality control activities, including testing, inspections, and defect tracking. The QC Lead will ensure that deliverables are monitored for quality and that any defects are addressed properly.

4.4. Project Team

The project team is responsible for adhering to quality standards and participating in quality assurance and control activities. They will report any quality issues to the QA and QC leads and contribute to continuous improvement of the quality processes.

4.5. Stakeholders

Stakeholders will review and approve the Quality Management Plan, provide input on quality objectives, and participate in quality reviews as necessary.

5. Quality Metrics

5.1. Key Quality Metrics

The following key quality metrics will be tracked throughout Project: METAL SNAKE:

Performance Metrics: Network throughput (minimum 100 Mbps), server response time (maximum 500 milliseconds), and uptime (99.9% for critical services).

Defect Metrics: Number of defects identified during testing, severity of defects, and defect resolution time.

Compliance Metrics: Adherence to regulatory standards, security requirements, and industry best practices.

Security metrics: Results of security audits, penetration tests, and vulnerability scans.

Customer Satisfaction Metrics: Stakeholder feedback on usability, performance, documentation quality, and user satisfaction ratings.]

5.2. Quality Baselines

The following quality baselines will be used to measure performance:

- **Performance Baseline:** Network throughput of 100Mbps and server response time of 500 milliseconds.
- **Security Baseline:** No critical vulnerabilities identified during security testing.
- **Documentation Baseline:** Clear and comprehensive documentation published on GitHub.

6. Quality Tools and Techniques

6.1. Quality Assurance Tools

The following tools and techniques will be used for quality assurance:

- **Checklists:** Process checklists for ensuring that quality standards are followed throughout each project phase.
- **Audits:** Regular audits of project processes to ensure compliance with quality standards. This includes security and performance audits.
- **Peer Reviews:** Team members will conduct peer reviews of hardware, configurations, code, and documentation to identify potential quality issues early.

6.2. Quality Control Tools

The following tools and techniques will be used for quality control:

- **Testing Tools:** Automated and manual testing tools for functional, performance, and security testing of the networks and servers.
- **Defect Tracking Tools:** Tools for logging and tracking defects, such as Jira, Bugzilla, or custom tracking systems, to ensure that all issues are addressed promptly.
- **Inspections:** Regular inspections of physical hardware installations to verify they meet specifications and quality standards.

7. Quality Reviews and Reporting

7.1. Quality Reviews

Quality reviews will be conducted at key project milestones to assess whether the project is meeting its quality objectives. These reviews will involve evaluating quality metrics, identifying any quality issues, and making necessary adjustments to the project plan to address them.

7.2. Quality Reporting

Quality performance will be reported to stakeholders through regular status reports. These reports will include updates on key quality metrics, any identified defects or issues, and the status of ongoing quality assurance and control activities.

7.3. Continuous Improvement

Continuous improvement will be a core focus of quality management for Project: METAL SNAKE. After each project phase, quality performance will be reviewed, and lessons learned will be documented. These lessons will be used to improve quality processes and ensure that the project delivers high-quality results.

8. Approval and Sign-Off

The following stakeholders have reviewed and approved the Quality Management Plan for Project: METAL SNAKE:

Project Manager:

Brendan Gasparin

X _____

(Signature)

X _____

(Date)

Premises Owner:

[redacted]

X _____

(Signature)

X _____

(Date)

Premise Owner:

[redacted]

X _____

(Signature)

X _____

(Date)