Secure Internal Network Design

**Prepared for** : Catwork Technology Ltd

**By**: MONICA IKEKE

**Executive Summary**

This project aims to design and implement a secure, scalable, and resilient internal network architecture for Catwork Technology Ltd, a mid-sized technology firm specializing in software development and data services. The goal is to protect assets, ensure regulatory compliance, and support operational efficiency.

**Key Project Goals**

* Prevent data breaches and unauthorized access
* Support staff productivity with segmented and secure access
* Implement robust monitoring and response systems

**Network Needs Assessment**

**User Groups**: Developers, HR, Finance, Admin, IT **Key Assets**: Source code, payroll data, customer info **Compliance Areas**: GDPR, PCI-DSS (if payments processed)

**Segmented Network Architecture**

**VLAN Segment Purpose Security Highlights**

|  |
| --- |
|  |

Dev VLAN Code repositories & tools ACLs,IDS/IPS

HR VLAN Personnel systems MFA, DLP, encryption

Finance VLAN Accounting systems Endpoint protection, SIEM

Admin VLAN Terminals, printers Role-base access control

Server VLAN Email & file servers Hardened OS, patching

**Core Security Infrastructure**

* **Firewall**: Next-gen deep packet inspection
* **VPN**: Secure remote access (IPsec/SSL)
* **IDS/IPS**: Snort or Suricata
* **SIEM**: IBM QRadar for threat detection
* **RBAC & MFA**: Enforced across sensitive segments

**Implementation Phases**

 Infrastructure audit

 VLAN testing and deployment

 Security tools configuration

 Policy rollout and staff training

 Live monitoring and continuous improvement

**Incident Response & Monitoring**

 Real-time alerts via SIEM

 Steps: Triage → Contain → Eradicate → Recover

 Reporting: SOC log reviews and quarterly reports

**Metrics for Success**

 Threat reduction post-SIEM activation

 Access control audit scores

 Incident response timing

 Staff training completion

**Documentation & Deliverables**

 Network diagram tailored to Catwork Technology Ltd

 VLAN configuration scripts

 Cyber policies (access control, password hygiene)

 SOC reports and log samples