

Rodgers Momanyi

Network Engineer | Optical Network Infrastructure | Cybersecurity

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Nairobi



SUMMARY

Strategic **Network Core Systems & Solutions Manager** with 8+ years of experience delivering resilient Internet Service Provider (ISP), enterprise, and cloud networks. I lead a **19-member multidisciplinary team** across Network Engineering, Cybersecurity, Systems, Development, and Data - driving **99.99% service availability**, infrastructure scalability, and secure service delivery.

I blend **deep technical expertise** with **senior leadership, SLA ownership, automation, and vendor management**, overseeing core IP, transmission, OSS/BSS, and cloud-integrated platforms. Certified across Juniper, Huawei, Azure, & Google technologies, I focus on building high-performing teams and future-ready networks that power **SaaS and SECaaS solutions**.

PROJECTS

Internet Service Provider Project | Vilcom Networks Limited - Network Design, Deployment & Maintenance

2020 - Present
Nairobi, Kenya

<https://www.peeringdb.com/org/33486>

Designed, deployed and maintained ISP Core, Backbone, Aggregation and Access Network

- Connected 100,000+ Enterprise and Home Customers across 20+ counties in Kenya using both fibre & wireless technologies
- Deployed 45+ Network nodes including 100G DWDM, 100G Core routers, 40G Aggregation routers & 10G Access Optical Line Terminals (OLTs)
- Optimized 300G traffic with BGP to multiple upstream providers - WIOCC, Seacom, Bayobab, Telkom. Deployed 200G traffic to CDN providers - Google, Netflix, Meta, Akamai, ByteDance. Engineered local traffic redundancy using ISIS for regional sites
- Solutions Design and Deployment of 200+ Public Hotspot sites across 20+ counties

Design, supply, installation and commissioning of GBE and DWDM for KPLC broadband solution | KP1/9A.2/RT/017/ICT/23-24

06/2024 - Present
Nairobi, Kenya

<https://www.kplc.co.ke/>

Delivered Kenya Power's nationwide broadband backbone, deploying DWDM and IP/MPLS to enable smart grid and digital services.

- Architected a future-proof optical/IP/MPLS network across 60+ sites with 99.99% availability, <200µs latency, and deterministic SLAs for SCADA, teleprotection, CCTV, and ERP - providing the foundation for KPLC's smart grid and digital services.
- Deployed Huawei OptiXtrans platforms (E9624 Core, E6616 Backbone, E6608T Aggregation) with 40/80 channels, supporting 10G/100G/200G wavelengths and hard isolation (FlexE) for critical services like SCADA and teleprotection.
- Deployed Huawei NetEngine 8000 series routers (M8 Core, M4 Backbone, M1C Aggregation) forming a hierarchical, SLA-driven network with MPLS L2/L3 VPNs, Segment Routing, and 50ms failover.
- Integrated into a unified NMS (Network Cloud Engine) for end-to-end service visualization, automation, and management.
- Deployed Optical Line Terminals (OLTs) in 7 major towns to provide last-mile fiber connectivity.

Supply, install, configure, deploy and support internet SDWAN services at Kenya Biovax offices (Embakasi and KWFT-Upperhill) | KBI/1FT/2023-2024

11/2024 - 01/2025
Nairobi, Kenya

<https://biovax.go.ke/>

Delivered a high-performance, secure, and scalable SD-WAN infrastructure for Biovax Institute, supporting critical pharmaceutical operations.

- Engineered resilient connectivity: Deployed Fiber-to-the-Building (FTTB) primary links and architected a multi-site SD-WAN/SD-VPN network with BGP routing, automated failover, and dynamic path selection to achieve 100% redundancy.
- Strengthened security and efficiency: Integrated firewalls, implemented IPsec VPN encryption, and established a centralized management platform for real-time monitoring and reduced administrative overhead.
- Built for growth: Installed ADSS fiber-optic cabling and terminal hardware to engineering standards, while designing modular scalability to support future expansion and remote site integration.

Supply, installation and commissioning of active equipment for provision of primary internet and wide area network (WAN) IP MPLS links for Kenya Ports Authority | KPA/016/2023-24/ICT

11/2023 - 02/2024
Mombasa, Kenya

<https://radar.qrator.net/as/328739/connectivity/neighbors/providers>

Designed, deployed and maintained Primary Internet and WAN IP MPLS Links

- Deployed BGP peering for IP Transit across 5 main sites including HQ
- Deployed IP MPLS L2/L3 VPN across 15 branch sites using ISIS as IGP
- Provisioned DNS propagation services for the authority

Provision of internet services at the County Headquarters, Nairobi Satellite Office, Sub Counties, Health Facilities and ICT Centres | CGU/ICT/T/04/2022/2023

05/2023 - 06/2023
Eldoret, Kenya

<https://uasingishu.go.ke/>

Designed, deployed and maintained Internet Services at HQ and branch sites

- Deployed 21 network nodes using fibre and wireless technologies across HQ and branch sites
- Provisioned DIA services across 21 sites
- Worked with customer to deploy OSPF across 21 sites for internal routing
- Provisioned DNS & Email propagation for the county sites

EXPERIENCE

Network Core Systems & Solutions Manager

Nairobi, Kenya

Vilcom Networks Limited

09/2024 - Present

- Strategically led the architecture, security, and operational excellence of core network infrastructure and systems platforms. Directed a high-performing, 19-member multidisciplinary team (Network Engineers, Cybersecurity, Developers, Systems Support, and Data Analysts) to deliver 99.99% service availability for Internet Service Provider (ISP), enterprise, and cloud environments. Executed the end-to-end technology roadmap, driving infrastructure scalability and the successful market launch of SaaS and SECaaS solutions.
- **Strategic Leadership & Organizational Governance - Team Management:** Directed and mentored a cross-functional department of 10 Level 2 Network Engineers, 3 Cybersecurity specialists (SOC & Engineering), 2 Developers, 2 Data Analysts, and 2 IT Systems Support members. **Policy Innovation:** Authored and implemented the *Technical Support Career Progression Policy*, establishing merit-based growth paths and competency matrices that resulted in a 95% staff retention rate. **Capacity Building:** Aligned departmental KPIs with business growth objectives and ensured 100% execution of training and development plans to enhance team technical capabilities.
- **Infrastructure Excellence & Core Network Ownership - Uptime Optimization:** Maintained **99.99% Core Network Uptime** at the Data Center level through proactive architectural design, BGP optimization, and strategic peering with local Content Delivery Networks (CDNs). **Network Engineering:** Provided technical oversight for IP Core, MPLS, Transmission (DWDM/OTN), and FTTx environments; managed critical lifecycle upgrades and capacity planning to support rapid service expansion. **System Innovation:** Introduced automation into operational processes to eliminate manual errors and deployed high-availability solutions using Proxmox and Mikrotik to enhance network flexibility.
- **Operational Impact & Service Delivery - SLA & CSAT Excellence:** Consistently achieved **≥98% team SLA compliance** and maintained high Customer Satisfaction (CSAT) scores of ≥90% through the optimization of support workflows. **Incident Command:** Served as the final escalation authority for major incidents, successfully maintaining a Mean Time to Resolve (MTTR) of **<1 hour for critical core incidents** and <4.8 hours for regional outages. **Project Leadership:** Spearheaded the deployment of large-scale infrastructure projects, including KPLC DWDM/GBE OTN & IP Core and JTL, KENGEN - IP MPLS, achieving a 95% on-time completion rate.
- **Cybersecurity, Systems & Digital Solutions - Security Posture:** Led the SOC team in proactive security monitoring and SIEM deployment; conducted quarterly audits to ensure infrastructure integrity and strict compliance with industry standards. **Product Delivery:** Directed the end-to-end development and delivery of **Software as a Service (SaaS)** and **Security as a Service (SECaaS)** products, including the launch of custom web and mobile applications. **Business Intelligence:** Established a robust data-reporting framework and executive-level dashboards to provide real-time insights into network health, traffic analytics, and security posture.
- **Vendor & Stakeholder Management - Partnership Management:** Orchestrated high-level relationships with global and local carriers (Safaricom, Airtel, Liquid, Seacom, WIOCC, Google CDNs, BCS, Bayobab, netElastic), conducting regular performance reviews and Root Cause Analysis (RCA) sessions to ensure service excellence. **Strategic Advisory:** Served as the primary technical advisor to the CEO and CTO on infrastructure investment, procurement, and the adoption of emerging technologies such as SDN and network virtualization.
- **Data Center Operations Management - Multi-Site Infrastructure & Virtualization:** Orchestrated the physical deployment and lifecycle management of geo-redundant, enterprise-grade server and network infrastructure across **EADC, iColo_MBA1, and Milimani** facilities; engineered resilient high-availability (HA) virtualization clusters utilizing **Proxmox, VMware, and OpenStack**. **Systems Reliability:** Applied **Google-certified IT Support standards** to manage complex hardware configurations and Linux-based server software, achieving zero-downtime during critical maintenance and expansion phases.

Network Implementation & Systems Engineer

Nairobi

Vilcom Networks Limited

12/2020 - 08/2024

- Provided technical leadership to internal core network engineering teams, fostering expertise in IP/Layer 2/Layer 3 networking, LAN/WAN, and wireless architectures
- **Architected & Deployed Core Infrastructure:** Engineered foundational ICT systems (billing, core routing/switching BGP/OSPF/ISIS, optical transmission OTN/NG WDM). Validated L2/L3 test plans in lab environments ensuring 100% deployment success. Optimized OTN infrastructure accelerated capacity efficiency by 15%
- **Designed Secure Hyperscale Networks:** Engineered sovereign-grade optical/IP networks with MPLS L3 VPNs and stateful firewalls for government agencies (ICTA/KPLC). Developed ACL/NAT policies and troubleshooting VRRP/RSTP failures in spine-leaf topologies. Directed cross-functional teams to implement NCSC-aligned security controls
- **Automated Network Lifecycle:** Built Python/Ansible frameworks reducing provisioning time by 65% and manual errors by 25%. Created API-driven BGP optimization tools accelerating deployment cycles by 30%. Streamlined support workflows via DevOps improving incident response by 30%. Leveraged TR069 protocol to automate FTTx ONT service provisioning eliminating 20mins of manual provisioning.
- **Led Global Operations & Partnerships:** Managed 24/7 Service Operations Centre (SOC)-Level 2 Technical team - resolving 150+ monthly Layer 1-3 incidents while maintaining 99.5% SLA. Commissioned 15+ metro PoP sites adhering to power/cooling constraints and global standards. Integrated netElastic BNG/IEA Radius systems through vendor partnerships (Huawei/Juniper/Nokia/Mikrotik/Extreme Networks)
- **Advanced Network Innovation:** Engineered CDN peering arrangements and cloud-integrated WANs using SD-WAN/Azure/GCP load balancers. Optimized IS-IS/BGP convergence slashing distributed system failover time by 40%. Developed capacity planning standards supporting enterprise scalability
- **Drove Service Expansion & Team Development:** Directed SaaS/SECaaS solutions expanding cloud/web service offerings. Mentored 8+ technical staff enhancing DWDM/IP core troubleshooting capabilities

EXPERIENCE

Team Leader National Optical Fibre, FTTx | IT Systems Administration

Nairobi

Geonet Technologies Limited

05/2018 - 11/2020

- Led 24/7 NOC operations: Directed 12 engineers and maintenance teams, resolving 150+ monthly incidents (DWDM failures, TCP/IP congestion) while ensuring network performance, security, and capacity for major clients including Safaricom, ICTA, KPLC, and Huawei across multiple regions.
- Managed fiber optic infrastructure: Oversaw deployments, maintenance, and troubleshooting for FTTx (FTTH, FTTB), SDC, NPS, and SDH connections, while coordinating FTTH customer connections and maintaining SLAs for new services and restorations.
- Optimized network efficiency: Analyzed infrastructure, identified bottlenecks, implemented corrective measures, and managed alerts through ticketing systems to ensure timely resolution and improved service reliability.
- Delivered technical and project leadership: Defined technical requirements, planned and budgeted maintenance projects (including relocations and rehabilitations), and coordinated cross-functional teams to deploy metro fiber networks aligned with scalability and power/space requirements.
- Automated monitoring and reporting: Developed Bash scripts on Unix/Linux systems to automate bandwidth monitoring, enabling real-time performance dashboards and proactive network management.
- Strengthened system reliability and user support by applying core principles from technical support, operating systems, and infrastructure services - resolving hardware/software issues, managing user accounts, and optimizing workstation performance across Linux and Windows environments.
- Applied cybersecurity best practices from IT Security and Networking modules to secure endpoints, configure firewalls, and enforce access controls - enhancing system resilience against threats and supporting compliance with organizational policies.

Network Operations Centre Engineer

Nairobi

Geonet Technologies Limited

04/2017 - 04/2018

- Troubleshooting and incident management: diagnosed DWDM chromatic dispersion and TCP/IP packet loss issues, achieving 99.5% SLA compliance; responded to outages and performance alerts with effective prioritization and escalation.
- Field and fiber support: guided teams across 12 counties in router and switch troubleshooting via Unix CLI, reducing escalations by 30%, while performing preventive and corrective maintenance on fiber optic cables.
- Customer service and alert management: ensured high customer satisfaction by resolving requests through ticketing systems, creating and managing alerts, and documenting corrective measures using Huawei OWS and Geonet ERP.
- Technical and project leadership: contributed to technical requirements planning, updated project designs and documentation, and generated reliable reports to meet client and departmental demands.
- Knowledge transfer and team development: trained new NOC personnel, sharing expertise to strengthen operational capacity and sustain long-term network performance.

Network and server engineering

Kilifi

Kemri Wellcome Trust

07/2016 - 08/2016

- Managed data communication infrastructure, ensuring efficient use of the internet and intranet
- Designed and implemented network configurations
- Set up and maintained Voice over IP (VoIP) using Microsoft Lync (now Skype for Business)
- Administered Windows Server 2008 R2, including perimeter security, Active Directory, and Domain Name System (DNS)

IT Desktop Support

Kilifi

Kemri Wellcome Trust

06/2016 - 07/2016

- Increased ticket resolution rate by 25% by efficiently addressing technical issues in Solarwinds
- Installed and troubleshoot software applications to ensure optimal user experience
- Performed hardware installation, repair, and preventive maintenance to keep computers operational
- Configured and maintained Voice over IP (VoIP) systems using Microsoft Lync (now Skype for Business)
- Provided technical assistance for Macintosh computers
- Explored new technologies and maintained current knowledge in the IT field

IT Service Desk Support

Kilifi

Kemri Wellcome Trust

05/2016 - 06/2016

- Accelerated support resolution time by 5% by efficiently managing 200 service desk inquiries monthly
- Improved data communication efficiency by 20% by optimizing Internet and Intranet usage
- Managed VOIP using MS Lync (Skype for Business)

EDUCATION

Bachelor of Science in Computer Science

Kisii

Kisii University

08/2013 - 12/2017

- Second Class Honours Upper Division

B+

Nairobi

Secondary School

01/2009 - 12/2012

- Moi Forces Academy, Nairobi

Primary School

St. Mary's Mosocho, Kisii

Primary School

01/2000 - 12/2008

TRAINING | COURSES | CERTIFICATIONS

Google Cybersecurity Professional Certificate

Coursera (Dec 2025)

Google Crash Course on Python

Coursera (Aug 2025)

JNCIS-Enterprise Routing & Switching

Juniper Learning(July 2025)

JNCIA-Junos

Juniper Learning(June 2025)

HCIP-Access

Huawei Learning(November 2024 — January 2025)

HCSP-Transmission

Huawei Learning(October 2024 — December 2024)

HCSA-IP Network

Huawei Learning(July 2024 — September 2024)

ACS-0006152 262113 Systems Administrator

Australian Computer Society(August 2024 — October 2024)

Verified International Academic Qualifications

World Education Services(August 2024 — October 2024)

Microsoft Certified: Azure Fundamentals

Microsoft Learning(July 2021)

Microsoft Certified: Power Platform Fundamentals

Microsoft Learning(July 2021)

Effective Customer Service Skills, Corporate Staffing Services

Corporate Staffing Services(April 2021)

Google IT Support Professional Certificate

Coursera (Aug 2025)

Python Network Programming for Network Engineers (Python 3)

Udemy (July 2025)

JNCIS-Service Provider Routing & Switching

Juniper Learning(July 2025)

HCIA-Datacom

Huawei Learning(January 2025 — March 2025)

HCIP-Transmission

Huawei Learning(October 2024 — December 2024)

HCSA-Transmission & Access

Huawei Learning(October 2024 — December 2024)

ACS-0006152 263111 Computer Network and Systems Engineer

Australian Computer Society(August 2024 — October 2024)

ACS-0006152 263212 ICT Support Engineer

Australian Computer Society(August 2024 — October 2024)

Microsoft Certified: Azure Data Fundamentals

Microsoft Learning(June 2021)

Microsoft Certified: Azure AI Fundamentals

Microsoft Learning(July 2021)

CFOS/H FTTx Certified

Fiber optic association(FOA) - FOA Work to Cert(June 2021)

Scrum Fundamentals Certified, Scrum Study

Scrum Study(May 2019)

LANGUAGES

English (Proficient)

Swahili (Proficient)

SKILLS

Active Directory, Azure, Bash, BGP, DHCP, DNS, DWDM, ERP, Ethernet, GPON, Huawei, Intranet, IPv6, ISIS, Juniper, Linux, Unix Shell Scripting, Unix, Mac OS, Microsoft Lync, MikroTik, MPLS, Nagios, NOC, OSPF, Python, QoS, Scrum, SDH, SDWAN, SIP, Skype, SolarWinds, STP, Switches, Ticketing System, VLAN, Voiceover, VOIP, WAN, GCP, HelpDesk, Integrity

FIND ME ONLINE

Linkedin

(
<https://www.linkedin.com/in/rodgers-momanyi-40033866/>
)

INTERESTS

Fitness

Outdoors

Swimming

Technology Enthusiast

Sceneries

AWARDS

VILCOM INNOVATOR AWARD 2025

VILCOM CEO AWARD 2025

GEONET EMPLOYEE OF THE YEAR
AWARD 2019

REFERENCES

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