Haruna Adoga

Glasgow, UK.

IaC | Networks | HPC Systems | Cloud | R&D

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About

Haruna Adoga has over a decade of experience in systems and network engineering, focusing on Cloud and Linux HPC systems automation including compute and storage. He also has experience in IT project design, implementation and management. He has experience and training as a researcher in computing science, with research endeavours in systems, high-performance computing, and virtual network management. He is an active member of the British Computer Society (BCS) and the Institution of Engineering and Technology (IET) UK.

Work Experience

HPC Systems Engineer
August 2023 – Present

University of Sussex, UK

- Automated the deployment of HPC services using Infrastructure as Code - Ansible, terraform, CI/CD with GitHub Actions
- Carried out the design and installation of compute (VMs and bare metal), storage (NFS and Lustre) and networking (high-speed Ethernet) solutions for HPC
- Managing public and private Cloud infrastructure for high-performance computing
- Collaborating with industry experts and researchers in delivering tailored HPC solutions
- Working with third-party vendors (Dell, Nvidia, Juniper) to design, procure and implement HPC solutions
- Providing design and technical support in troubleshooting problems with HPC clusters and Linux systems
- Carrying out upgrades, migration and applying security patches on Linux/Unix systems, compute, storage and networking
- Proficiency in HPC job schedulers - SLurm, Altair Grid Engine
- Managed the GridPP distributed Computing infrastructure, including new service deployments and upgrades
- Led the network and IP address design, networking of physical equipment (servers and switches) for OpenStack Private Cloud HPC infrastructure, including Lustre and Ceph storage
- Managing an HPC facility comprising 1400 CPU cores distributed across 81 compute nodes connected via 100Gb/s omnipath fabric.
- Automated the design and configuration of CERN GridPP computing middleware using Ansible and Terraform for GridPP external HPC jobs
- Hands-on Datacentre experience including cabling, server and high-speed 200G Ethernet network deployment for HPC - QSFP56 cabling using fibre optics
- Implemented a three-tier network infrastructure for power management, provisioning and data transfer in a private cloud environment. Hands-on experience with HPC management and monitoring tools: Prometheus, SNMP, perfSONAR network performance

Computing Lab Support
Feb 2021 – August 2023

University of Glasgow, UK

- Providing technical support in troubleshooting problems with HPC clusters and Linux systems
- Carrying out upgrades and applying security patches on Linux/Unix systems
- Performing Linux/UNIX system administration and design, including storage and web server hosting with Nginx
- Practical and theoretical teaching of Information Technology course for MSc – Web development with Python (Django framework)
- Working as a marking assistant to help with grading undergraduate and postgraduate students' assessments

Networks & Systems Engineer
November 2016 – Present

Freelance

- Troubleshooting network devices, e.g., Cisco Routers/Switches and computer hardware
- Proficient in using the Linux command prompt
- Networks, Linux and Windows server administration

- Designing and managing Cisco networks for LAN & WAN connectivity
- Performing Cloud infrastructure monitoring and configuration

Systems Engineer - Instructor   May 2012 – January 2020
Federal University of Lafia
- Leading troubleshooting efforts on Linux, Mac and Windows servers
- Delivering lectures in computer programming using Python and Java
- Automating systems engineering tasks with Ansible, Bash Scripting and Python
- Presenting theoretical and practical lectures on networks, distributed systems, Cloud computing and system administration
- Assisting with routine systems maintenance by managing updates and patches
- Teaching undergraduate and postgraduate students courses in networking, AI, distributed systems and programming

Technical Support Specialist   April 2011 – May 2012
Airtel Telecommunications
- Actively processing technical service requests from Airtel subscribers
- Served as a tier 1 skilled service desk personnel in incident management
- Carried out hierarchical escalation to tier 2 support engineers for resolution
- Proffered solutions to subscribers to resolve service disruptions, based on SLA

Education

PhD Computing Science - University of Glasgow, UK   Jan 2020 to May 2024

MSc. Computing Science - University of Hertfordshire, UK   July 2014 to Jan 2016

Beng, E & E Engineering - University of Maiduguri, Nigeria   April 2004 to Dec 2009

Skills Summary and Certifications

Industry Certifications : RHCSA, AWS Cloud Practitioner, ITIL v3, Cisco CCNA, CCNP, RHCE (in-view)
Networking and Systems : LAN, HPC, WAN, VPC, NFV, InfiniBand, BGP, Switching, RedHat, SLURM, Ubuntu, Routing, IPv6
Development Tools/Languages: Python, Bash Scripting, Git, Django
Applications/Libraries: Wireshark, VMWare, KVM, NetworkX, Numpy, Matplotlib, Scapy, NMAP
Infrastructure: Kubernetes, Datacentre networking, Linux Servers, OpenStack Cloud, AWS Cloud, Google Cloud, Containers
IaC/Automation : Ansible, Terraform, DevOps, CI/CD
Project Management and Collaboration: Trello, Jira, Slack, Confluence, ITILv3
Storage: CEPH, Network File System (NFS), Lustre, CERN VM File System (CVMFS)

Selected Projects

OpenStack Cloud HPC | *Compute, Networks, Storage, High-performance*   Nov 2023 - present
  * Design and deployment of OpenStack Private Cloud - Infrastructure as Code
  * Linux Operating Systems upgrades and migration
  * KVM server virtualization and network performance measurements
  * Datacentre network design for HPC
  * Software-defined networking for Openstack Cloud computing
  * Lustre and Ceph Storage for HPC

Testbed design and evaluation of NFV Platforms | *SDN, NFV, UNIX, OpenFlow, Docker*   June 2022
  * Carried out the performance evaluation of commonly used virtual network functions in ISP environments

* Real testbed design on commodity servers (UNIX) for hosting network functionalities
  * KVM server virtualization

Hybrid Network Functions Deployment on Commodity Servers | *Routing, Firewall, IDS*   2020 - 2021
  * Virtualization, Switching, stateful and stateless firewall deployments
  * Optimisation of virtual network functions placement at the edge

Network and Server Penetration Testing | *Unix, Windows, Server Security*   November 2016
  * Designed pen-test infrastructure in a multi-OS environment
  * Carried out a complete pentest lifecycle on a LAN with Linux & Windows Servers

Service and Volunteering

YouTube Creator   2014 – Present

Hands-on tech tutorials

  * I present hands-on videos on various aspects of Information Technology, emphasising Linux Server Administration, Windows, Networks and Automation. – <u>View YouTube Channel</u>