



Daniel Nechtan

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EDUCATION

HARVARD UNIVERSITY

2022 | Cambridge, MA

CS50X/P Computer Science

OPEN UNIVERSITY

2011 - 2022 | Milton Keynes, UK

MU123 Disc. Mathematics, 2022

S104 Exploring Science, 2012

W200 Understanding Law, 2011

FIFE COLLEGE

1997 - 2000 | Kirkcaldy, Fife

HNC Computer Science

SQA Multi-User Operating Systems

SQA Using IT in Business

SQA Programming Pascal

BALWEARIE HIGH SCHOOL

1996 - 2000 | Kirkcaldy, Fife

SG Computing, English, Mathematics,
Modern Studies, Technological Studies,
Music, German, Physics.

INDEPENDENT STUDY

Enterprise Computing Linux, Java &
Jakarta EE, Oracle Database, PL/SQL,
Solaris Containers / Zones, WebLogic
Server.

Administration RHEL, Oracle Solaris,
OpenBSD, OpenVMS, nsd & BIND,
PostgreSQL, JBoss / WildFly, Apache
HTTPd & TomEE, Nginx.

Security Reverse Engineering, x86+Arm
Assembly language, Malware analysis,
cybersecurity standards including
ISO/IEC 27001 and ISO/IEC 27032.

LANGUAGES

English // CEFR C2+ (Native)

German // CEFR B1

Romanian // CEFR B1

EXPERIENCE

SELF-EMPLOYED | FREELANCE SYSTEM ADMINISTRATOR AND ENGINEER

2008 -

- **DevOps:** Red Hat Enterprise Linux, Oracle Solaris, OpenBSD, nginx, Virtualisation (KVM, VMWare ESXi) and Container platforms (Docker, Kubernetes), Ansible, Vagrant.
- **Database Administration:** SQL, PL/SQL, PostgreSQL, MySQL/MariaDB, Oracle Database.
- **Programming:** ANSI C, Perl, Elixir, Bash/Korn Shell, awk, Python

CRYOGENIX | INFRASTRUCTURE ENGINEER

April 2004 - Oct 2008

- Development and deployment of VPNs for private clients
- Utilised OpenVPN, BGP, Kerberos, RADIUS and AFS
- Created secure and anonymous platforms
- Other technologies employed included: C/C++, J2EE, VMware ESX, OpenBSD, tinc, Quagga, PostgreSQL, Oracle DB, and Tomcat

FIRE COMMUNICATIONS, INC | SERVER ADMINISTRATOR

June 2003 - Oct 2004

- Administration of FreeBSD systems and User-support for a small ISP
- RADIUS, Kerberos, and LDAP
- Shell scripting, security auditing

SCOTHOSTS LTD | TECHNICAL ANALYST

March 2001 - Sep 2002

- Migrated the groupware system manually from Microsoft Exchange 5 to 6.
- Built a number of dynamic websites using ASP.Net and Microsoft SQL Server.
- Technologies used included Windows NT 4, Windows 2000, Red Hat Linux 5/6, Perl, ASP, IIS4/5, Active Directory, and MS Exchange.

VOLUNTARY PROJECTS AND INTERESTS

PERSONAL | A SHORT SUMMARY

Throughout my life, I've dedicated myself to the pursuit of knowledge, accumulating a wealth of experience in computer science and electronic engineering; it feels more of a vocation than merely a profession.

NECHTAN.IO | A SMALL REPOSITORY

My personal website where I keep some articles, tutorials, and contact details.

OPEN RESEARCH INSTITUTE | FORMERLY CYBERARMY

Coordinating and managing the free educational platform and computer science & cybersecurity research institute that was formerly called CyberArmy.

ANONET | DECENTRALISED NETWORK

Leveraging BGP and other internetworking protocols, technologies we created a decentralised, pseudoanonymous intranet within the internet based chiefly on IPv4.



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RECENT SIGNIFICANT PROJECTS AND CONTRACTS

PRIVATE INTELLIGENCE AGENCY | SECURE VIRTUALISATION INFRASTRUCTURE

I successfully executed a twelve-month project where the client sought a robust solution on a specialized platform. Leveraging Oracle SPARC Enterprise hardware, I built a secure cloud-like infrastructure using the SPARC Hypervisor (LDOM, Logical Domain Manager) and OpenBSD operating system (selected for its proactive security and exploit mitigation capabilities).

In alignment with the Unix philosophy, and without reliance on third-party software beyond the base, I engineered a system that is both straightforward to maintain and scalable by administrators with fundamental skills. Furthermore, I ensured the system's adaptability and future integrations (such as web-based self-service functionality for users and developers) with APIs.

To facilitate efficient monitoring, I developed bespoke Korn shell and Perl scripts, utilising RRDtool and OpenBSD's httpd. The configuration of each virtual machine was streamlined through interactive scripts that prompted users for resource allocation specifications. Subsequently, configurations were automatically added to the router (PF), and the operating system was configured using autotinstall based on provided values, adhering to a template. Comprehensive documentation was provided to enable another developer to implement an API seamlessly.

Security was a paramount consideration throughout the project. The client's requirements necessitated robust measures against potential cyber attacks and minimising the attack surface, given the highly sensitive nature of the infrastructure's location and access to resources therein. In response, I implemented onion networking (over Tor) and SSH tunnels with key-based authentication after thorough hardening of the systems. This approach not only proved suitable but also prevented any leaks into the internet from outbound-routed VMs over Tor.

Upon successful implementation, testing, and client approval, I dedicated the remaining project duration to meticulous system documentation and providing comprehensive support and training for the administrators tasked with ongoing maintenance.

- **Key technologies:** OpenBSD, SPARC Hypervisor (LDOM), Korn shell, Tor, PF (Packet Filter), OpenSSH, RRDtool, relayd, httpd, dhcpd, Perl, awk.

STATIC NETWORKS, LLC | VMWARE AND CONTAINER INFRASTRUCTURE

I collaborated remotely with intermittent visits to the AMS9 Digital Reality Data Centre in Amsterdam, undertaking the installation and configuration of a VMware vSphere cluster (ESXi, vCenter) utilising Dell PowerEdge Hardware, Dell PERC H710P, and Fibre Channel storage arrays to support the client's European operations. Additionally, I successfully implemented a Red Hat OpenShift cluster atop this virtual infrastructure.

- **Key technologies:** VMware vSphere (ESXi, vCenter), vSAN, VLAN, Fibre Channel, SAN, iDRAC, Red Hat Enterprise Linux / CoreOS, OpenShift, Puppet, Ansible.

FINANCE / DIGITAL CURRENCY | SQL DATABASE DEVELOPMENT AND ADMINISTRATION

I spearheaded the design, development, and administration of the database and back-end software for a non-blockchain-based anonymous digital currency and banking system. Aligning with the client's preference for open-source solutions, I employed PostgreSQL ORDBMS, Perl, and C++ on CentOS Linux to meet project objectives.

Leveraging PL/pgSQL on PostgreSQL, I was able to ensure the atomicity, consistency, isolation, and durability (ACID) of transactions, protecting their critical role in upholding the banking system's integrity.

Additionally, I took charge of configuring database replication and implementing robust backup strategies in a production environment, further enhancing the system's reliability and resilience.

- **Key technologies:** PostgreSQL, PL/pgSQL, SQL, Perl, C++, CentOS (Enterprise Linux).