

Roman Bogorodskiy

Staff Software Engineer — Systems, Cloud & Virtualization

novel@FreeBSD.org · github.com/novel · novel.nu

SUMMARY

Staff-level software engineer with nearly 20 years of experience building systems, cloud, networking, and infrastructure software.

Strong background in Python, C, Unix-like operating systems, virtualization, and cloud platforms. Long-time FreeBSD developer and committer, with substantial open-source work on libvirt, including development and maintenance of the bhyve hypervisor driver and ZFS storage support.

Experienced in software design, implementation, debugging, technical documentation, and collaboration with distributed engineering teams and customers.

TECHNICAL SKILLS

Languages	Python, C
Operating Systems	FreeBSD, Linux
Virtualization & Systems	libvirt, bhyve, ZFS
Cloud	OpenStack, Amazon EC2, Rackspace, GoGrid, Skytap
Networking	TCP/IP, iptables, iproute2, pf, ipfw
Development	REST APIs, gdb, make, autotools, waf
Additional experience	Java, Spring, PostgreSQL, MySQL

PROFESSIONAL EXPERIENCE

Juniper Networks

June 2021 – Present

Staff Software Engineer

- Developed network analytics and root-cause analysis functionality for intent-based network management systems.
- Worked on causality graph models connecting network faults, observable telemetry symptoms, and resulting service impacts to identify candidate root causes.
- Developed historical analytics replay functionality, reconstructing network state from time-versioned intent graphs and telemetry data to analyze past incidents and service impacts.

Apstra

July 2017 – May 2021

Software Engineer

- Designed, planned, and implemented features for the Apstra Operating System (AOS).
- Diagnosed and resolved software defects and production issues.
- Produced technical documentation for new and existing functionality.

Mirantis

March 2011 – July 2017

Principal Software Engineer · Senior Staff Engineer

- Designed and implemented cloud infrastructure software based on OpenStack, Python, REST APIs, and Linux.
- Implemented bare-metal provisioning functionality for OpenStack.
- Developed fixes and enhancements across multiple OpenStack components.
- Implemented Multipart Upload support for the Apache jclouds Swift driver.
- Worked on-site with customers on engineering projects.
- Created technical articles and training materials.

Grid Dynamics

July 2008 – March 2011

Senior Staff Engineer · Staff Engineer · Junior Software Engineer

- Developed Python services, client applications, and Django-based web applications.
- Built and maintained automated test suites for Python and Java software.
- Developed Java applications using Spring, Tomcat, Maven, and related technologies.
- Deployed and supported applications on Linux and Solaris.
- Integrated software with cloud providers including Amazon EC2, GoGrid, Rackspace, and Skytap.
- Worked directly with customer-side engineers, architects, and managers.
- Worked on Linux networking using iptables and iproute2.

Renet COM Ltd

December 2006 – July 2008

Software Engineer

- Developed backend and infrastructure software in Python and C.
- Built a greylisting mail filter using Python, py-milter, MySQL, and Sendmail.
- Developed components of a billing system integrating Python, XML, C, pf, and ipfw.
- Developed a middleware layer connecting payment terminals with multiple billing systems.
- Built a web interface for a VoIP billing platform.

JSC Fannet Telecom

August 2006 – November 2006

System Administrator

- Administered FreeBSD infrastructure including mail, NAS, web, and DNS servers.
- Worked on FreeBSD kernel and networking code, including ipfw.
- Developed billing-system components using PHP and PL/pgSQL.

OPEN SOURCE

FreeBSD Project

- FreeBSD developer and committer with long-term involvement in the project.
- Primarily contributed to the Ports Collection, with additional source and documentation patches.

libvirt

- Developed and maintained FreeBSD support.
- Developed and maintained the bhyve hypervisor driver.
- Developed and maintained the ZFS storage driver.
- Mentored the Google Summer of Code 2016 project “Improving libvirt support for bhyve.”

Apache Libcloud

- Apache Libcloud committer.

Other Contributions

- Implemented and maintained FreeBSD-specific support for torsmo and later Conky.
- Contributed fixes and features to numerous open-source projects including GnuTLS, PearPC, and mp3blaster.
- Created several open-source projects, including ecru and gg-tools.

PATENTS

- **US 12,445,345** — Replay of analytics for a network management system
- **US 12,255,768** — Network graph model and root cause analysis for a network management system

EDUCATION

Saratov State University

2003–2008

M.S. in Mechanics

Mechanics and Mathematics Department · Numerical Experiment in Mechanics