

# Novgorodov Igor

Born 12 November 1985

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## Family

Married, 1 child

## Main skills

Experienced software developer and engineer.

Some of my code is available on [GitHub](#)

Other examples can be provided on request.

My technical publications (Russian): [Habrahabr](#)

Open-source contribution:

- Minor Linux kernel patches (like [this](#)) and bug reports
- My own libraries ([go-aux](#), [go-amqp-wrapper](#))
- Significantly reworked forks of some libraries ([go-radius](#), [go-dhcp](#))
- Pull requests to some of the software that I'm using (like [sniproxy](#), [go-smpp](#), [accel-ppp](#), [gosnmp](#), [govalidator](#))
- Bug reports and/or patches for many other open-source software (Squid, Suricata etc)

Development tools:

- Golang, Perl, PHP, Lua, C, Python, Java, BASH and others
  - Experience in developing highly loaded systems
  - Experience in low-level network programming: have developed protocol parsing libraries (DHCP, RADIUS, SMPP)
  - Profiling and further optimizing software for performance
- Expert usage of many DBMS and message brokers like:
  - MySQL, Aerospike, Cassandra, Redis, Couchbase
  - RabbitMQ, Mosquitto
- SQL: Complete database architecture
- HTML, JS, CSS (Vue.js)

OS:

- Linux (RHEL/CentOS, Debian, Gentoo)
- FreeBSD
- Windows Server

#### Open-source ecosystem:

- Mail: Postfix, Dovecot
- Configuration management: Ansible, SaltStack, Chef
- DNS: BIND, Unbound, NSD, PowerDNS
- HTTP: Apache, nginx, HAProxy, sniproxy
- Monitoring: Zabbix, Cacti
- SQL: MySQL, PostgreSQL
- NoSQL: Aerospike, Cassandra, Redis, Couchbase
- Networking: OpenVPN, IPSEC (Strongswan), Quagga/BIRD
- vSphere: Deep expertise in deployment and configuration
  - vCenter, Update Manager, HA, S/DRS, Fault tolerance, dvSwitch
  - Backup: Veeam B&R, VMWare Data Protection

#### SAN:

- FC, iSCSI
- Building fault-tolerant SAN storages based on Linux, SCST (FC, iSCSI), DRBD, Pacemaker

#### WAN/LAN:

- Designing and building fault-tolerant networks
- Cisco routers, switches and ASA firewalls

#### My past projects:

- ISP Billing Core (netflow collector and parser) (C, MySQL)
- Automation: ticket/helpdesk, user management, one-click file sharing for intranet users (PHP, MySQL)

## Employment history

### **Senior software engineer**

Zurich, Switzerland

**Tamedia Espace AG** [www.tutti.ch](http://www.tutti.ch)

November 2017 - now

I'm a member of a team that is developing a backend for a major Swiss online marketplace. Main instruments are Golang and PostgreSQL.

### **Head of development team, System architect**

Moscow, Russia

**CJSC "MaximaTelecom"** [www.maximatelecom.ru](http://www.maximatelecom.ru)

December 2016 - November 2017

Me and my team has developed from the ground up and evolved the following projects:

- RADIUS server: sophisticated request logic; highly performant; multi-level request caches; online configuration reload and many other features
- DHCP server: dynamic subnet generation based on templates; pool loading from MySQL & configuration files; persisting leases in Aerospike
- Communication Service (SMPP, Instant Messaging): Highly performant modular messaging system that manages sending/receiving messages through various protocols

and performing bulk message sending. One of its main goals is to power Moscow Subway emergency messaging broadcast

- Network Monitoring System: client-server software to monitor continuously the wireless/wired link between vehicles and datacentre
- Many other micro-services and modules

We were using the modern software stack: Golang, Aerospike, Cassandra, RabbitMQ, InfluxDB, Grafana, MySQL, ELK and many others.

### **Senior system engineer**

Moscow, Russia

**CJSC "MaximaTelecom"** [www.maximatelecom.ru](http://www.maximatelecom.ru)

December 2015 – November 2016

My main goal was to keep the IT infrastructure supporting the largest underground Wi-Fi network in Moscow subway up & running. I was leading a team of two engineers.

Some numbers:

- 800 trains (6k train cars)
- 6 million clients a day, 300k wireless users simultaneously
- 1.5k WLC controllers and routers, 6k APs and switches
- 6k femtocells
- 22+ Gbit/s traffic
- RADIUS: 1000+ requests per second
- DHCP: 2k+ leases per second, 5k+ subnets

Other notable projects:

- Wi-Fi access in buses/trams/trolleys – over 8k vehicles (Moscow City Transport)
- Stadiums, mass entertainment zones, exhibitions
- Airports (SVO, VKO)
- Trains (Moscow regional electric trains)

I was responsible for the following IT infrastructure:

- VMWare vSphere clusters (20+ hosts)
- Linux/FreeBSD/Windows servers (400+, mostly virtual)
- Monitoring (PRTG, Zabbix, Grafana/InfluxDB)
- Highly loaded services including:
  - RADIUS, DHCP, DNS (Unbound, 20k+ reqs/sec)
  - HTTP and application servers (nginx, unicorn, elixir, tomcat, ...)
  - Databases (MySQL, Cassandra, Aerospike)
- SAN infrastructure (FC/iSCSI)
- Many other minor systems

### **Senior system engineer**

Moscow, Russia

**CJSC "KR Properties"** [www.kr-pro.ru](http://www.kr-pro.ru)

November 2008 – November 2015

I was responsible for the health and development of the company's IT infrastructure:

- IT department's infrastructure management

- OS: Linux, Windows Server 2003-2008R2, VMWare vSphere
- Network devices: Cisco (ASA firewalls, ISR routers, Catalyst switches, MDS FC switches)
- VoIP: Asterisk, Avaya
- Supporting geographically dispersed VPN network based on DMVPN, OpenVPN, IPSEC, OSPF/EIGRP
- Migration from physical servers to vSphere private cloud
- vSphere upgrade lifecycle from 4.0 to 6.0
- Implementation of VDI infrastructure (Horizon View, Zero-clients, nVidia GRID)
- Migration from iSCSI to FC SAN infrastructure
- Custom HA SAN storages (Linux, DRBD/LSI Syncro, SCST, Pacemaker, iSCSI/FC)
- Migration of VoIP from Avaya to Asterisk
- Mail system with Linux frontend (HAProxy, ClamAV, Postfix, OpenDMARC, OpenDKIM) and Exchange backend
- Proxy servers with transparent Kerberos AD authentication (Squid, SSL bumping)
- BIND DNS Server (DNSSEC)
- Backup software (Veeam, Bacula, custom scripts)
- Monitoring software (Zabbix with SMS alerts, Cacti, Monit)
- Software development
  - Intranet helpdesk system (PHP/Perl/MySQL/LDAP/Memcached)
  - User lifecycle management (PHP/Perl/MySQL/Powershell)
  - Mail archiving system for the need of security department (Perl, MySQL, Postfix)
  - AD/OpenLDAP synchronization scripts

### **System engineer**

Moscow, Russia

**LLC "NewCom Port"** [www.ncport.ru](http://www.ncport.ru)

February 2007 – October 2008

My responsibility:

- Supporting server infrastructure of the small (10 racks) datacenter
- Administration of Linux servers (billing, mail, www, monitoring etc)
- Writing applications on Perl/PHP/MySQL stack (monitoring, configuration backup)
- Implementation of highly-available cluster for the mail service (heartbeat, DRBD, Postfix, Dovecot, MySQL)
- Writing new Netflow billing core on C (multithreaded, using hash tables)
- Creating various web-based apps (mail system management, hosting, ups monitoring)
- Creating a simple universal backup system that suited company's needs (unix, windows, networking device's configuration)

### **Software developer and engineer**

Moscow, Russia

**LLC "Bisel"**

November 2004 – January 2007

I was developing an in-house CRM (PHP + MySQL) and was responsible for system administration of a small network (Linux and Windows servers)

## Education

2001-2004 National Research Nuclear University 'MEPhI', Moscow (Incomplete)

1996-2001 Mathematical Lyceum