# Guido Serra

System Administrator, Performance Engineer

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## Profile

Passionate Linux hacker. Proactive professional capable to impact widely in the organization. European freesoftware activist: co-founder of two non-profit organizations.

Initially grown as website designer, I developed a wide background on the system administration and software development area (embedded systems and web services).

Winner of the security competition "iCTF 2005" with the team "Tower of Hanoi" of the italian university "Politecnico di Milano", where I spent most of my life between 2001 and 2007, balancing myself between the professional activity and my studies in Computer Science and Software Engineering.

Italian/EU citizen.

English proficiently used as working language. German spoken, certified A2C

## Experience

**Sr. Software Engineer, Rocket Internet GmbH; Berlin - 2012-current**
Chief Troubleshooter in charge of the tackling issues affecting production sites across the globe. Rocket Internet is a Startup/Ventures incubator and sites reliability of its creatures is the top priority.

Recent challenges involved coding in C, C++, PHP, Python, Ruby, SQL.

Activities performed included capacity testing, SQL profiling & tuning, Java Virtual Machine's profiling & tuning, data mining, network packet debugging.

Currently developing on PHP Zend Framework 2, MySQL and MongoDB

**Head Site Reliability, Release Management, txtr GmbH; Berlin - 2011-2012**
Manager responsible for the overall site reliability, including: metadata content ingestion from ONIX streams, AdobeDRM servers and the business logic on Glassfish / Oracle

Introduced JMX based instrumented metrics within an overall non-functional requirements strategy. Conducted performance tests, against the backends, also via remote point of presence across the globe. Aimed for the introduction of CDN

technologies end the reorganization of the loading patterns of the html exposed by the Django frontends, to improve the end-user experience when accessing the online store.

Designed and implemented a Ruby/BDD automated testing solution.

Conducted Java heap stack, networking, and general infrastructure root cause analysis.

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**Senior System Administrator, ProfitBricks GmbH; Berlin - 2011-2011**
Operations's deputy team lead, responsible for a KVM based cloud computing service

Nagios, Puppet, Debian LiveCD, GlusterFS, Python, Bcfg2, FAI, tftpd/bootp, Bacula.

**Senior System Administrator, Nokia Services; Berlin - 2010-2011**
Team member of Operations and R&D Support for OVI Maps > http://maps.nokia.com

Acting as a DEVOP, analyzing all the build pipeline of all the components of the product to address inconsistencies and miscommunications. Implementing continuous integration environments, based on Puppet and Centos Linux on HP Proliant servers.

Currently assigned to the teams responsible for delivering the core components of the maps and the device R&D team for products related to emerging markets like India & China.

Initially involved in the strategic project to integrate Yahoo and OVI Maps, for testing and capacity planning of the infrastructure on multiple datacenters.

Introducing, after having repackaged a complete ruby stack under Centos, Cucumber-Nagios for building automation quality control, and later production service monitoring.

**Quality Assurance Architect, Vodafone Group; Düsseldorf - 2008-2010**
Company referral as technical expert of the load generator "grinder".

In May 2010 I released an internal toolkit for quality assurance that I initially designed and implemented which was then further developed by my team coworkers. http://http-qat.sf.net . Mainly focused initially on the SOA Services load generation testing, the HTTP Quality Assurance Toolkit became a standard tool in all the functional and non-functional testing activities. It was used to stress the Vodafone 360 backend infrastructure based on REST API calls. Tools like jMeter and tSung were not mature enough for the complexity of our load scenarios and the strict timelines we had to meet.

Free Software Foundation Europe
fellowship member

Further developments I'd like to follow are the usage of tSung with Cucumber and Hadoop with JFreeChart for data analysis and reporting.

Maintainer of all the team's allocated hardware (Solaris enhanced with OpenSolaris packages, GNU/Debian) in the datacenters, for load testing, monitoring and reporting.

Designed and implemented a low cost satellite solution for monitoring the 3G/GSM services infrastructure. Based on Nagios, HTTP-QAT and MySQL+ODBC

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**Solution Architect, (Freelance); Milan - 2001-2008**
Designed, implemented and operated custom solutions upon the needs of various companies.

Released patches for projects like:

- GOsa[2], I extended the LDAP schemas to include the SSL CSR's in SPKAC and PKCS#10 formats, and I initially provided some italian localizations.

- Seagull, I extended the Pear PHP libraries to support file based database SQLite

- GNU/TLA, I fixed a bug related to the FTP authentication mechanism

The more interesting projects I've led were:

- Stendhal, a complete library digitalization of an ancient collection of books belonging to the "Fondo Stendhaliano/Bucci" of "Biblioteca Sormani, Milano". Within the project "DigitaMi" by the telco Telecom Italia - http://www.digitami.it/stendhal
  I used MySQL with workarounds to support fulltext indexing & retrieval of words with characters like Æ/æ; OWASP libraries for input sanitization; DjVU as image plugin.
- Tempus, a resource/appointment booking tool that became with the time a crazy integration with Firebird database (as Interbase released the code), with a GSM modem (was year 2001!) to send SMS appointment notifications, and full integration with the Openoffice MistiqueXML templating engine. That was literally, "I'll substitute you with a shell script" project. We offloaded must of the work initially done with a Windows UI, to a cron job, taking a list of user ids from a plaintext file on a samba share, extracting the data in an XML format suitable for the XPATH based Openoffice templates and outputting them through the office network printers.

- Pandora, a complete small mid-sized office solution. It was an LDAP integration on GNU/Linux Debian of the following products on a fully redundant heartbeat/DRBD infrastructure: OpenLDAP/PAM/NSS/Samba, Postfix/ClamAV/Spamassassin/Cyrus, Opengroupware/PostgreSQL, Asterisk/Hylafax, split between intranet and DMZ. Plus OpenWRT on Linksys WRT54GL as OpenVPN concentrators and firewalls.

**QA/R&D Engineer, MG Engineering; Milan - 2002-2006**
Coordinated a team of developers to create automated UI end user certification tests.

Involved in the EUCIP certification definition board in quality of "opensource expert".

Developed and operated iptables embedded firewall solutions based on the LEAF project.

**QA Engineer, UBI Banca; Bergamo - 2005-2005**
Code review in support of the migration of PL/SQL code from Solaris to Red Hat Linux.

**Security Analyst, H3G Italy / Hutchison Whampoa Ltd.; Milan - 2004-2004**
Security incident management & operational procedures.

**LAB Assistant, Politecnico di Milano - 2002-2002**
Unix C socket programming course.

## Education

Politecnico di Milano - BS in Computer Science and Software Engineering
(accomplished most of the exams related to my professional field like Data Structures & Algorithms, Software Engineering, Computer Architectures and Discrete Mathematics)

Supported all the IT Administration activities in integration of the Sun Solaris workstations and the other Windows / Linux installations in the microarchitecture laboratory. This experience led to project Pandora, and to a thesis project of a friend, who dedicated the prologue to me.

During the time spent in laboratory I got as well the possibility to experiment with some VHDL code and FPGA boards... which led to my initial project of stage on embedded systems with Alessandro Rubini

After my first interview with Google in 2007, I decided to try to certify my project management skills and I attended a course in preparation for the Project Management Professional certification. I acquired methodologies and communication skills that allowed me to successfully deliver in a large organization like Vodafone Group and Nokia.

## Computer Science Skills

I'm an advanced GNU/Linux administrator, and bug hunter. Particularly proficient with functional debugging and capacity root cause analysis. Partecipated in the first go live of projects like "Vodafone 360" and "Yahoo / Nokia location based services" integration.

I'm capable of patching a linux kernel and rebuild either a whole distro from scratch either RPM and DEB packages. I've been playing with a lot of embedded distributions as well. Like OpenEmbedded, LEAF, and OpenWRT.

Very good practical knowledge about cryptography, configuration of network services with TLS/SSL support and the PGP/GPG tools. I designed and implemented solutions based on freesoftware for:

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- Configuration management systems (puppet)

- Groupware & Directory Services (Samba, OpenLDAP, OpenGroupware, Gosa$^2$)

- Virtualization (KVM, ESX)

- VoIP & Fax over VoIP (Asterisk, Hylafax)

- GSM over the air data trasmission (pppd & usb/pcmcia kernel drivers for datacards)

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- Testing (Grinder, HP Quality Center, Nagios, Cucumber, SoapUI, Clearcase)

- Firewalls, traffic shapers, VPNs (iptables / netfilter, openvpn, ipsec)

- Advanced Mail Servers (postfix, cyrus-imaps, courier-imapd, amavis, clamav, spamassassin, squirrelmail, Zimbra, Kolab)

- File Servers (dav, samba, nfs)

- Dynamic Web Servers (apache, apache2, proftpd, PHP, MySQL, PostgresSQL, Tomcat, JBoss, Django, Seagull)

Good knowledge of the Microsoft Windows Operating Systems family and particularly on the Linux / Windows interoperability issues (samba, openldap / active directoy, etc... ).

Good knowledge of the Apple OsX and the old Os 8/9 operating systems, and their interoperability with Linux servers over AppleTalk protocol.

Good knowledge of the Microsoft Office and OpenOffice packages and their integration with external data sources. I've been creating simulations of the UIs of both of them to have completely automated testing procedure for end users knowledge certifications.

Good knowledge of procedural, functional and object oriented programming, with experience in the following languages:

- C, C++, perl, python, php, bash, sed, awk, Java

- XML (XPath, XQuery, XSLT), HTML, Javascript

- SQL (MySQL, PostgreSQL, Oracle, Firebird/Interbase, MS Access)

## Referals

The following people are the menthors who have helped me grow as a professional during my career period as a freelancer. They transmitted me their passion and commitment to this job.

- Alessandro Rubini : co-author of the book "Linux Device Drivers", O'Reilly

- Giovanni Franza & Marina Cabrini : authors of "UNIX Flash", Apogeo

- Marco Cavallini : author of http://embedded.it , http://koansoftware.com

- Marco Santambrogio : MIT Research Affiliate, at CSAIL, working on the definition of self-aware computing systems, from the physical architecture to the OS

- Federico Feroldi & Luca Bonmassar: founders of the start-up http://coderloop.com

  "[...] I can so recommend Guido as a person with great background and deep wisdom of IT solutions. He shows all the time a strong determination to fulfill his goals, while being honest to others. [...]" *October 11, 2010*

  Luca Bonmassar, *Lead Software Engineer, Vodafone*

                                        further more on de.linkedin.com/in/guidoserra

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## Interests

Conferences like HACKIT, FOSDEM, FOWA'10, BerlinBuzzWords, DevOpsDays

+DEFCON, DebConf (hopefully this year, 2011)

I love staying in touch and interact with people. I've been working as a waiter and I've been for long time an alpine trekking instructor. Currently I work interacting onsite with R&D teams in different offices in Berlin.

I'm a trekker, skipper, snowboarder, blogger and a globetrotter.