

Kalilou Diaby

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Infrastructure and Backend Engineer

A badass Infrastructure Engineer in both Amazon Web Services(AWS) and Google Cloud Platform(GCP). I love hacking the code and also enjoy the commonalities and contrasts of each programming language and platform and the same goes to cloud providers such as AWS and GCP. In my spare time, I love programming, play with hardware and hack on side projects.

Software and Technology

PROGRAMING SKILLS	Python(2.7, 3.3), Go, C, C++, Java, Ruby, Bash, PL/SQL, Jinja2, CSS, SASS, HTML5, nodejs and Javascript
CLOUD PROVIDERS	Amazon Web Services (AWS) and Google Cloud Platform (GCP)
VIRTUALIZATION	vmware - vSphere platform, VirtualBox
RELATIONAL DATABASES	PostgreSQL, MySQL, MariaDB, SQLite, Google Datastore
NOSQL DATABASES	Redis, CouchDB and MongoDB
LINUX DISTRIBUTIONS	Centos, Ubuntu and Fedora
SERVER CONFIGURATION	Chef, Ansible, Puppet and Salt
HASHICORP	Vagrant, Packer and Terraform
TESTING	Cucumber(Ruby), Lettuce(Python), Selenium, Nosetests, Capybara.
OTHERS	Spinnaker, Docker, LXC, Letsencrypt, easy-rsa, Github, Jira, Stash, Confluence, Amanda Network Backup, Pyramid, Flask.
EA	TOGAF and Zachman Framework EA stands for Enterprise Architecture

Professional Experience

CURRENT DECEMBER 2015	Senior Software Engineer (DevOps and Backend Engineer) Tripwell/Schibsted Sverige - Stockholm - Sweden I've been focused on both the Tripwell platform migration to AWS and hacking most of the backend components. * At first prior to the migration, an investigation has been done which resulted into calculating the total cost of AWS resources by using AWS SIMPLE MONTHLY CALCULATOR. * In order to make sure our servers are provisioned, CHEF has been chosen as the Server Configuration Management, the different cookbooks, roles, data bag and environments have been written. And chef kitchen has been used to write extensive tests in order to make sure the cookbooks passe all the tests before running any convergence (provisioning the servers). * Setup cloudformation by using troposphere which generates the actual template file in json format, cloudformation is used in order to keep our infrastructure as code. All our resources are created and updated by cloudformation e.g VPC, Route table, ec2 instances, autoscaling group, Route53, s3 and so on for all our environments * Setup the production environment first in AWS and after stage, test and build environment have been moved as well into AWS. * Setup the autoscaling group for the build servers. * Setup letsencrypt to automatically renew SSL certificates for the ELBs in both stage and test environments. * Setup elasticache redis replication group. * Setup AWS Lambda function to stop QA resources at night and restart them in the morning, this reduced slightly the monthly cost. * Setup VPN for QA and production environments access and also setup vpn for QA and production VPC inter-connection. * Setup couchdb master-slave replication as well as implemented an auto-correct function in nodejs for fixing the replication which gets triggered based on the cloudwatch alarm. Setup Haproxy as loadbalancer which send write and read requests to the master and only read requests to the slave. * Setup stage, test and build environment in vmware Vsphere prior to the move to AWS. * Setup continuous Integration and delivery process (Jenkins), also setup the Jenkins ec2-plugin which quickly spins up new ec2 instance for build whenever there is a jenkins job in the queue and all build machines are busy. * Setup Jenkins Pipeline for the release process by using the Jenkins Pipeline plugin. * Improved the local dev environment by creating an virtualbox base image containing all needed software installed which become much faster to setup for new employees coming in. * Setup local pypi server for python packages and converted some of the package into the wheel format. * Setup local rpm repo server (PULP) for rpm packages which gets synced with the public rpm repos. * Improved the fabric script for the Dev team resulting into a much simpler release procedure. INFRA BUZZWORDS Chef, Ansible, Puppet, Fabric, GitHub, Jira, Stash, Haproxy, Nginx, letsencrypt, Jenkins, Vagrant, Packer, Terraform, AWS services, cloudformation and Amanda Network Backup. DEV BUZZWORDS And at the same time I am also hacking on most of the backend components since hacking the code is Awesooooome. Python, Celery, Postgres, Redis, CouchDB, Python Pyramid Framework, SQLAlchemy, Solr, Sonar, Ngnix, nodejs and requireJS.
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SEPTEMBER 2013 DECEMBER 2015	Software Engineer (Backend Developer) Tripwell/Schibsted Sverige - Stockholm - Sweden <p>I was hacking on most of the backend components. As a backend developer some of my responsibilities were:</p> <ul style="list-style-type: none"> * Design, develop and deploy backend components by focusing on high availability, low latency and scalability. * Wrote reusable, testable, and efficient code. * Managed individual project priorities, deadlines and deliverables. * Database design and implementation - PostgreSQL, Redis and Couchdb. * Implementing new features. * Worked extensively in our asynchronous task queue/job queue based on distributed message passing(Celery) by refactoring the entire email and sms notifications functions. * Took part in the on-call rotation. * Wrote extensive unittests by the TDD concept as well as integration tests using lettuce, cucumber, capybara and selenium.
DEV BUZZWORDS	Python, Celery, Postgres, Redis, CouchDB, Python Pyramid Framework, SQLAlchemy, Solr, Sonar, Ngnix, nodejs and requireJS.
MARCH 2013 SEPTEMBER 2013	Software Engineer (Backend Developer) SCM Venture/Schibsted Sverige - Stockholm - Sweden <p>I was hacking on most of the backend components. As a backend developer some of my responsibilities were:</p> <ul style="list-style-type: none"> * Design, develop and deploy backend components by focusing on high availability, low latency and scalability. * Wrote reusable, testable, and efficient code. * Managed individual project priorities, deadlines and deliverables. * Database design and implementation - PostgreSQL, Redis and Couchdb. * Implementing new features. * Worked extensively in our asynchronous task queue/job queue based on distributed message passing(Celery) by refactoring the entire email and sms notifications functions. * Took part in the on-call rotation. * Wrote extensive unittests by the TDD concept as well as integration tests using lettuce, cucumber, capybara and selenium.
DEV BUZZWORDS	Python, Celery, Postgres, Redis, CouchDB, Python Pyramid Framework, SQLAlchemy, Solr, Sonar, Ngnix, nodejs and requireJS.
JULY 2012 NOVEMBER 2012	Co-Founder and Software Engineer (Tech lead) EduTech (Handelhögskolan) - Stockholm - Sweden <p>As the tech leader, I was in charge of the Backend Development side using Google App Engine (Service as a Platform), The system architecture design, the database design which was designed based on Google Datastore supporting NoSQL for scalability purposes.</p>
DEV BUZZWORDS	Java, JSP, Google app engine, Google datastore, Android.
AUGUST 2010 SEPTEMBER 2010	Société des Telecommunication du Mali - Bamako - Mali Analyst on the constrains of Asynchronous Digital Subscriber Line (ADSL) <p>I was responsible for analysing the ADSL Network and Protocol Architecture as well as analysing the implementation and installation problems</p>
BUZZWORDS	Point-to-Point Protocol over ATM (PPPoA), Point-to-Point Protocol over Ethernet (PPPoE), TCP/IP, OSI model and so on.

Projects

COUCHDB BACKUP	Written in python to backup couchdb in s3.
BUZZWORDS	python, boto3, redis and AWS.
SOURCE	https://github.com/kalilou/couchdbBackupS3
PSEUDO COMPILER	This project is related to designing and building a compiler using the voice synthesizer and voice recognition which will allow anyone to take advantage of a new way of programming. The idea started with the obsession of helping people with disabilities, blind people or people with sight issues.
BUZZWORDS	Lexical Analyzer, Scanner, Syntax Analyzer, Semantic Analyzer, Intermediate Code Generator, Intermediate Code Optimizer, GTK+ for user-friendly UI, Lex and Bison(parser), C language.
SOURCE	https://github.com/kalilou/PseudoCompiler
CINEMA MINI ERP	Design and development of mini ERP for Cinema management.
BUZZWORDS	GTK+ for user-friendly UI, C language.
SOURCE	https://github.com/kalilou/CinemaERP
LIBRARY MINI ERP	Design and development of mini ERP for Library management.
BUZZWORDS	Oracle forms, Oracle reporting, Oracle Database, PL/SQL, Merise (modeling tool).

Education

2012 – 2014	Stockholm University (Sweden) Master's Degree, Information Systems Management
2011 – 2012	Stockholm University (Sweden) Master exchange student - Software Engineering Conducted my master thesis research at Stockholm University department of Computer and Systems Sciences alongside with the Swedish Armed Force collaboration whose goal is to design a framework assessing the impact of Cloud Computing having on Enterprise Architecture process. TOGAF Version 9, Architecture Development Methodology(ADM), ADM Guidelines and Techniques, Architecture Content Framework, The Enterprise Continuum, TOGAF Reference Models, The Architecture Capability Framework, Cloud computing, Essential Characteristics, Service Models, Deployment Models.
2011 – 2012	ENSIAS Rabat - Morocco Major Software Engineering at ENSIAS which stands for Ecole Nationale Supérieure d'Informatique et d'Analyse des Systèmes
2007 – 2009	Faculté des Sciences et Techniques de Fès - (Morocco) Major Mathematics, physics and Computer Sciences
2004 – 2007	Lycée Technique de Bamako - (Mali) Major Mathematics, physics and Civil Engineering

Awards

2015	I've won the Schibsted Hackathon from which I've received an awesome Raspberry pi
2012	The Swedish Institute Scholarship for my master in Information System Management at Stockholm University
2011	Malian Education Minister Scholarship for my exchange study in Stockholm University
2007	Malian and Moroccan government Scholarship for my university studies in Morocco

Social Activity

2010 - 2011	Club advisor responsibilities for Student Engineer and Alumni Engineer Malian studying and working in Morocco. I supervised the Design of Malian Scholarship management System to the Malian Embassy
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Meetup Groups

Groups	<ul style="list-style-type: none">* Sthlm Spotify Tech Group* DevOps Stockholm* Docker Stockholm* Stockholm Python User Group* Stockholm Erlang Meetup* Stockholm Hadoop User Group* Django Stokcholm Meetup GroupAnd so on
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Languages

English	Fluent
French	Bilingual (Teacher of French helping student at Tadem at Stockholm University)
Swedish	Fluent

Events

Startup	Entrepreneurship Event held at Amsterdam. Responsibilities: Business Plan establishment, Android/iOS developer and Web-Developer (PHP) for the prototype delivery
PMC	Competition in Programming Moroccan Challenge (PMC) in C/ Java language
Pycon	Pycon Sweden