Network automation

Where to invest your time in learning new skills

LEKKER WEER NLNOG 2017-06-16

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- Background in networking
- Responsible for promoting automation



As of this week: B.Sc.

assignment: Automation for the network team

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What's on the menu?

- Why should I learn automation?
- Where should I start?



We are using the network...

2005

2013



We're halfway to connecting everyone

7.3bn people, 5.4bn over 14 years old, 4.7bn mobile phones, 2.5bn smartphones



Global population and mobile penetration, June 2015

... more and more



2016 Ericsson Mobility Report

Changes are dangerous



Dimension Data - Network Barometer Report 2016

DevOps breaks the "C3"

- <u>Core Chronic Conflict:</u>
 - Respond quickly to business needs
 - Provide stable & predictable infra

"If a human operator needs to touch your system during normal operations, you have a bug."

Carla Geisser, Google

"Engineers built robots, robots manage networks." Geir Høgberg, **Facebook**

Table 3: Percentage of work that is done manually, by performance group.

All percentages significantly different among High, Medium, and Low IT performers, except where otherwise noted.

	High performers	Medium performers	Low performers	
Configuration management	28%	47%ª	46%°	
Testing	35%	51% ^b	49% ^b	~
Deployments	26%	47%	43%	
Change approval processes	48%	67%	59%	
^{a, b} Not significantly different				
2017 State of DevOps Report (Puppet Labs	s)			
			Jan 1, 2011	Jan 1, 2014 Jan 1, 2017

Google trends for "DevOps", interest over time

What about my job?



What about my job? (2)





NetDevOps Survey 2016 MY VIEW ON THE DATA

The NetDevOps Survey

- Over 300 responses
- Worldwide
- Enterprises, ISPs, Datacenters, etc.

- Network-to-Code
 - http://networktocode.com/community
- Raw data available:
 - http://bit.ly/netdevops-survey-results



What tools does everyone use?



What tools does everyone use? (2)

100% 90% 80% 70% 60% 50% 40% 30% 20% 10% 0% Python Shell scripts Ruby Golang Other Javascript C/C++

Programming languages

A lot A little

What tasks are we automating?



Tools for managing configs





Wrapping up

Your network <u>will</u> be automated
If you don't do it, somebody else will

- Learn to built robots
 - or become an elevator attendant

