

# DevOps for network engineers

A 5 day **Hands on** training course



## Description

This course is not a soft skills course covering the concepts of DevOps but instead concentrates on the technical side of tools and languages for network DevOps. Hands on sessions follow all major sections. More detailed courses on individual aspects of this course are available.



## Key outcomes

By the end of the course delegates will be able to:

- ✓ Evaluate network automation tools.
- ✓ Automate tasks with ansible.
- ✓ Use git for version control.
- ✓ Use python to manage network devices.
- ✓ Use python libraries for network devices.



## Training approach

This structured course uses Instructor Led Training to provide the best possible learning experience. Small class sizes ensure students benefit from our engaging and interactive style of teaching with delegates encouraged to ask questions throughout the course. Quizzes follow each major section allowing checking of learning. Hands on sessions are used throughout to allow delegates to consolidate their new skills.



## Details

### Who will benefit?

Administrators automating tasks.

### Prerequisites

TCP/IP foundation for engineers.

**Duration:** 5 days

**Customer rating:** ★★★★★

### Generic training



Generic training compliments product specific courses covering the complete picture of all relevant devices including the protocols "on the wire".

*"Friendly environment with expert teaching that teaches the why before the how."*  
G.C. Fasthosts

### Small class sizes



We limit our maximum class size to 8 delegates; often we have less than this. This ensures optimal interactivity between delegates and instructor.

*"Excellent course. The small class size was a great benefit..."*  
M.B. IBM

### Hands On training



The majority of our courses use hands on sessions to reinforce the theory.

*"Not many courses have practice added to it. Normally just the theoretical stuff is covered."*  
J.W. Vodafone

### Our courseware



We write our own courses; courseware does not just consist of slides and our slides are diagrams not bullet point text.

*"Comprehensive materials that made the course easy to follow and will be used as a reference point."*  
V.B. Rockwell Collins

### Customise your course



Please contact us if you would like a course to be customised to meet your specific requirements. Have the course your way.

*"I was very impressed by the combination of practical and theory. Very informative. Friendly approachable environment, lots of hands on."*  
S.R. Qinetiq

# DevOps for network engineers

## Course content

### What is Devops

Programming and automating networks, networks and clouds, AWS, Openstack, SDN, Devops for network operations.

### Getting started with ansible

The language, the engine, the framework. Uses of ansible, orchestration. The architecture, Controlling machines, nodes, Agentless, SSH, modules, JSON protocol. Configuration management, inventories, playbooks, modules, roles. Hands on: Installing ansible, running ad hoc commands.

### Ansible modules for networking

Built in modules, custom modules, return values. Core modules for network operations. `_command` module, `_config` module, `_template` module. Hands on: Using modules.

### Ansible playbooks

Ansible-playbook, users, sudo, YAML, plays, tasks, handlers, modules. Hands on: Running playbooks.

### Ansible Inventories

`/etc/ansible/hosts`, inventory variables, static inventories, dynamic inventories. Hands on: Static and dynamic inventories.

### Programming with Python

Basics, variables, loops, control statements, operators. Hands on: Python programming.

### More Python programming

Functions. Classes and objects, modules, packages. `Ipclass`, `ipnetwork`. Hands on: Python programming with network modules.

### Git

Source Control Management, SCM systems, Version control, Git and Git Hub, branching strategies. Hands on working with Git.

### Programming models and options

Ruby versus Python, chef, puppet, ansible, saltstack, GNS3, VIRL. YANG and NetConf. Hands on: Jinja.

### Python and networking

Telnetlib, pysnmp, ncclient, ciscoconfparse, cisco-ios-cli-automation.

### Paramiko SSH and Netmiko

Integrating Python and network devices using SSH. Netmiko, Netmiko methods. Hands on: Netmiko.

### NAPALM

What is NAPALM, NAPALM, ansible and Cisco IOS. Replace, merge, compare, commit, discard. Hands on: Configuration with NAPALM.

### Creating networking modules

Creating ansible network modules. Yaml, jinja2 and python, pyez and Juniper, netconf. Hands on configuration management with pyez.

