



# Infoshare : Network eAcademy

Network Automation

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Training by the GÉANT project:

<https://wiki.geant.org/display/NETDEV/Network+Automation+Training>

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# Agenda

- The Network Automation Metro Map...
  - ...and how to interpret it
- The streams of learning
  - Bonus! Upcoming learning units!

## The Network eAcademy – the pillars of Training

- Network Automation
- Quantum Technologies
- Optical Time & Frequency Networks
- Data Analysis
- SoBigData Academy collaboration

**CAPTIONS**

# Network Automation eAcademy



## Legend

● Unit / ■ Document / ext. link

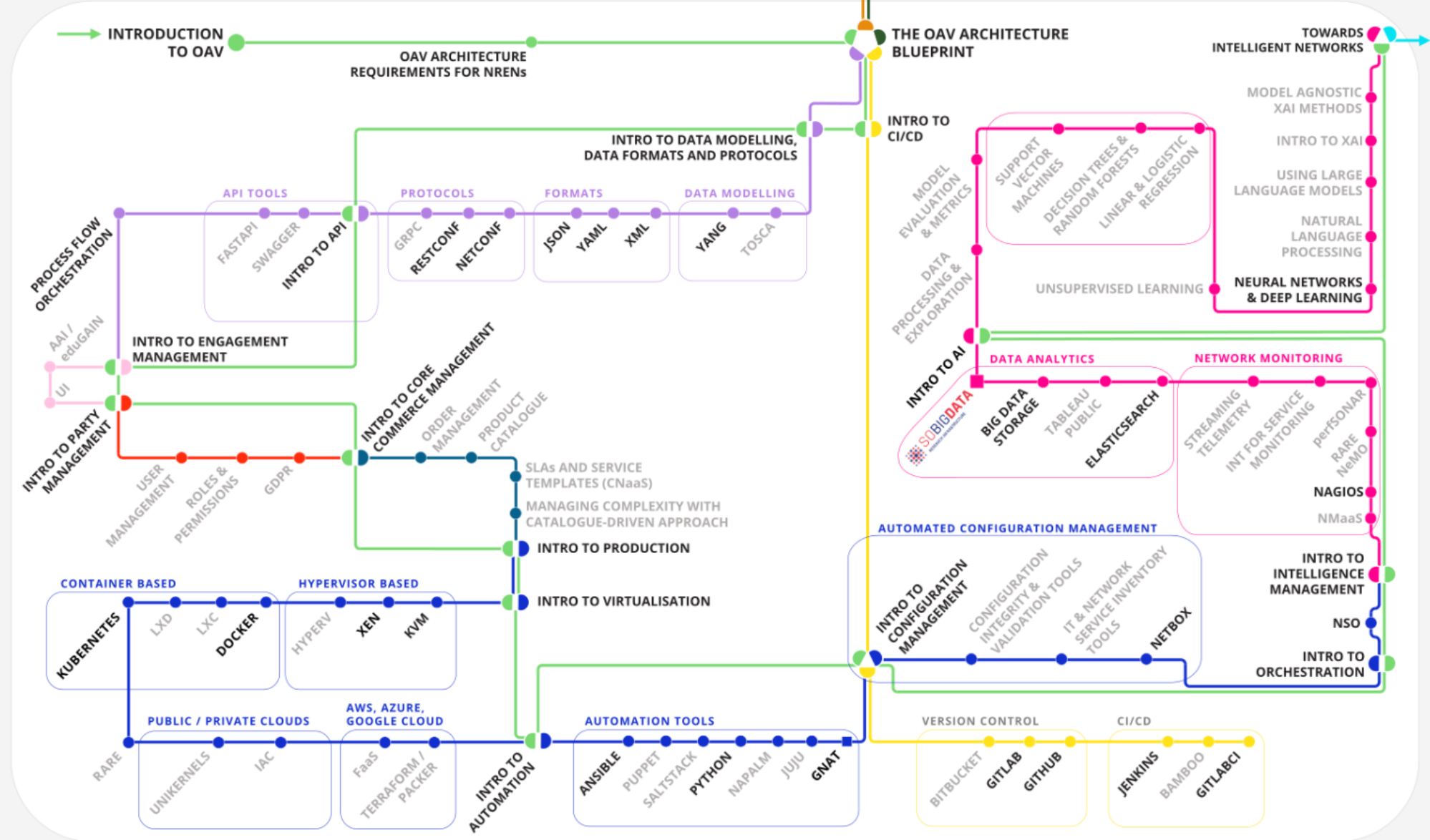
● Released / ● Not released

● Exchange point

You can jump back and forth between this station and all exchange points at any time

## Tracks

Functional Blocks in the TM Forum OPEN DIGITAL ARCHITECTURE (ODA)





People

Organisations

Things



### Engagement management

(communication channels)

(Front end, secure API)

### Party management

(customers/partners)

WHO / WHY

### Decoupling and integration

### Core commerce management

(Order, catalogue, product, SLA, problem handling)

Commercial view

WHAT

### Decoupling and integration

### Production

(CFS, RFS, orchestration operational domain management)

Technical view

HOW

### Intelligence management

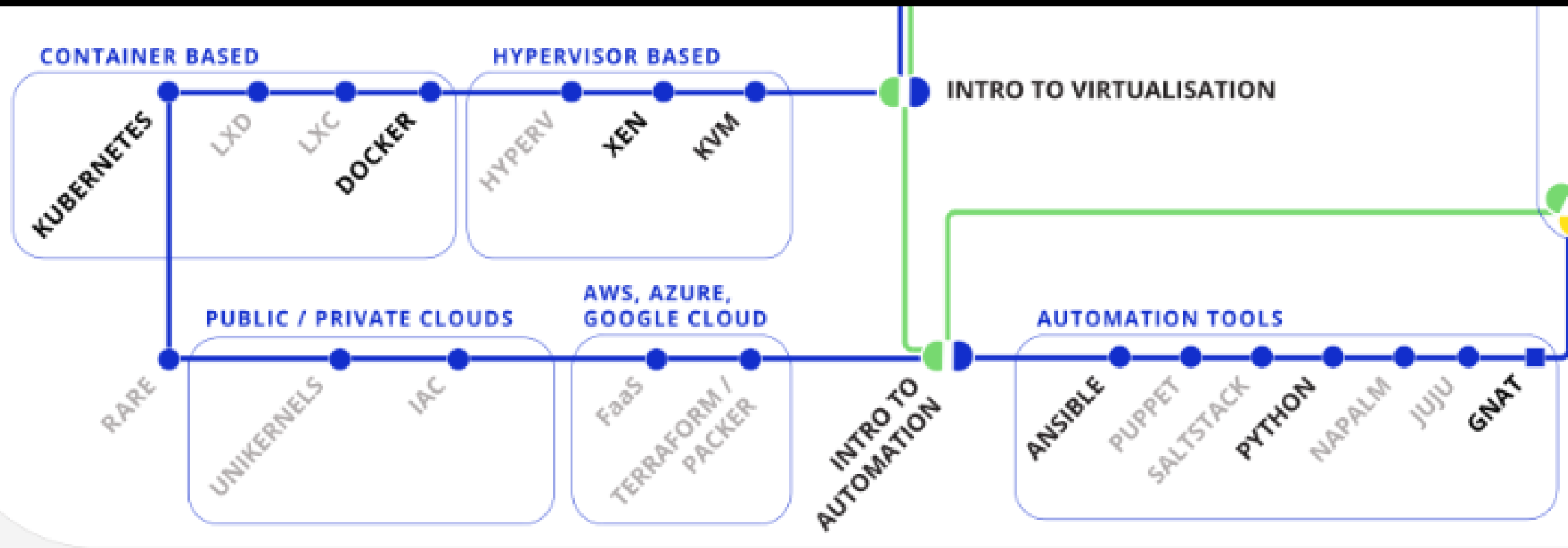
(analytics, operational reality)

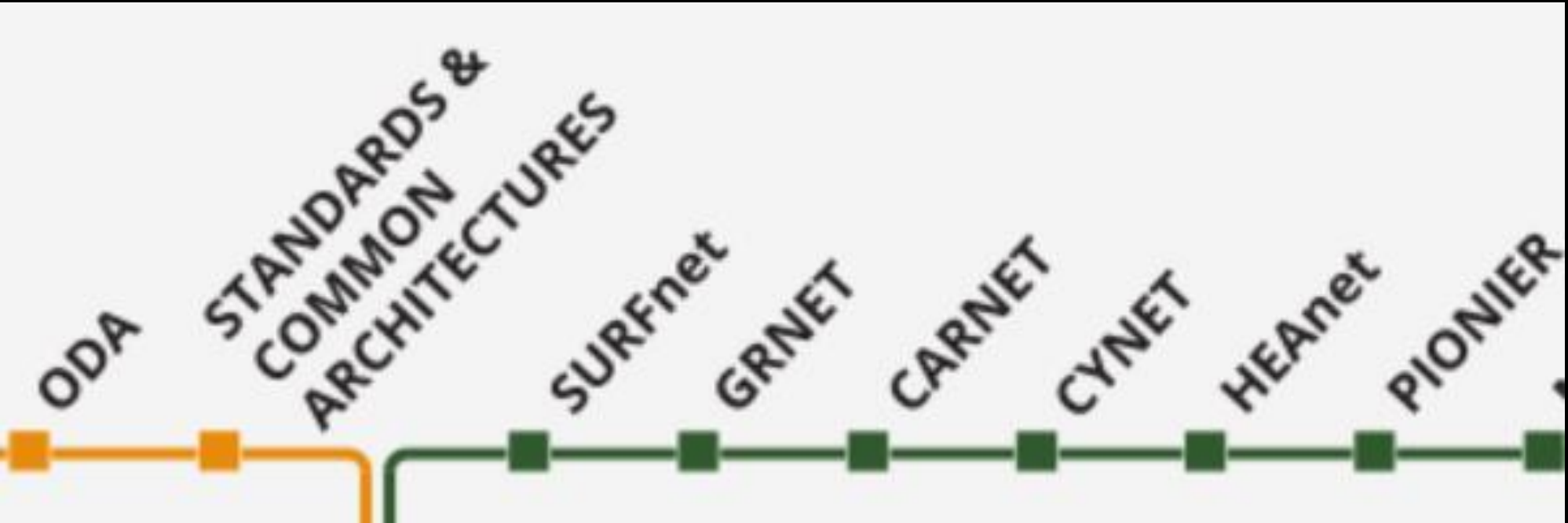
(closed control loop, autonomies)

Decoupling and integration

Decoupling and integration







# How to make a Learning Unit

**1**

**Talk to us!**

Lots of grey on the  
Metro Map...

...new topics welcome  
too!

**2**

**Infoshare  
May 12th**

How to Make a  
Learning Unit

**3**

**Standards**

Templates  
&  
Recommendations

**4**

**OBS  
video**

If that's what you use



# Hypervisor-based virtualisation: KVM

Course

Settings

Participants

Grades

Reports

More ▾

Overview

Main Goals

Part 1: Introduction to KVM

Part 2: KVM Installation and Basic Co...

Part 3: Building and Installing VMs in ...

Useful Links

Quiz

Feedback Form & Completion Certifi...

Welcome to the Hypervisor-based virtualisation: KVM learning unit.



**COURSE DATE:**

From August 2024



**DURATION:**

50 minutes



**COMMITMENT:**

120 minutes



**REQUIREMENT:**

None



**COURSE TYPE:**

Self-paced



**CREDENTIAL:**

Certificate of Completion



Hypervisor-based virtualisation: KVM - Part 1: Introduction to KVM

Share



# Hypervisor-based virtualisation: KVM

Part 1: Introduction to KVM

Bojana Koteska, Ss. Cyril and Methodius University in Skopje  
OAV Training Development Team



OAV training by the GÉANT project:

<https://wiki.geant.org/display/NETDEV/OAV+Training+Portal>

[network-eacademy@lists.geant.org](mailto:network-eacademy@lists.geant.org)

Watch on YouTube

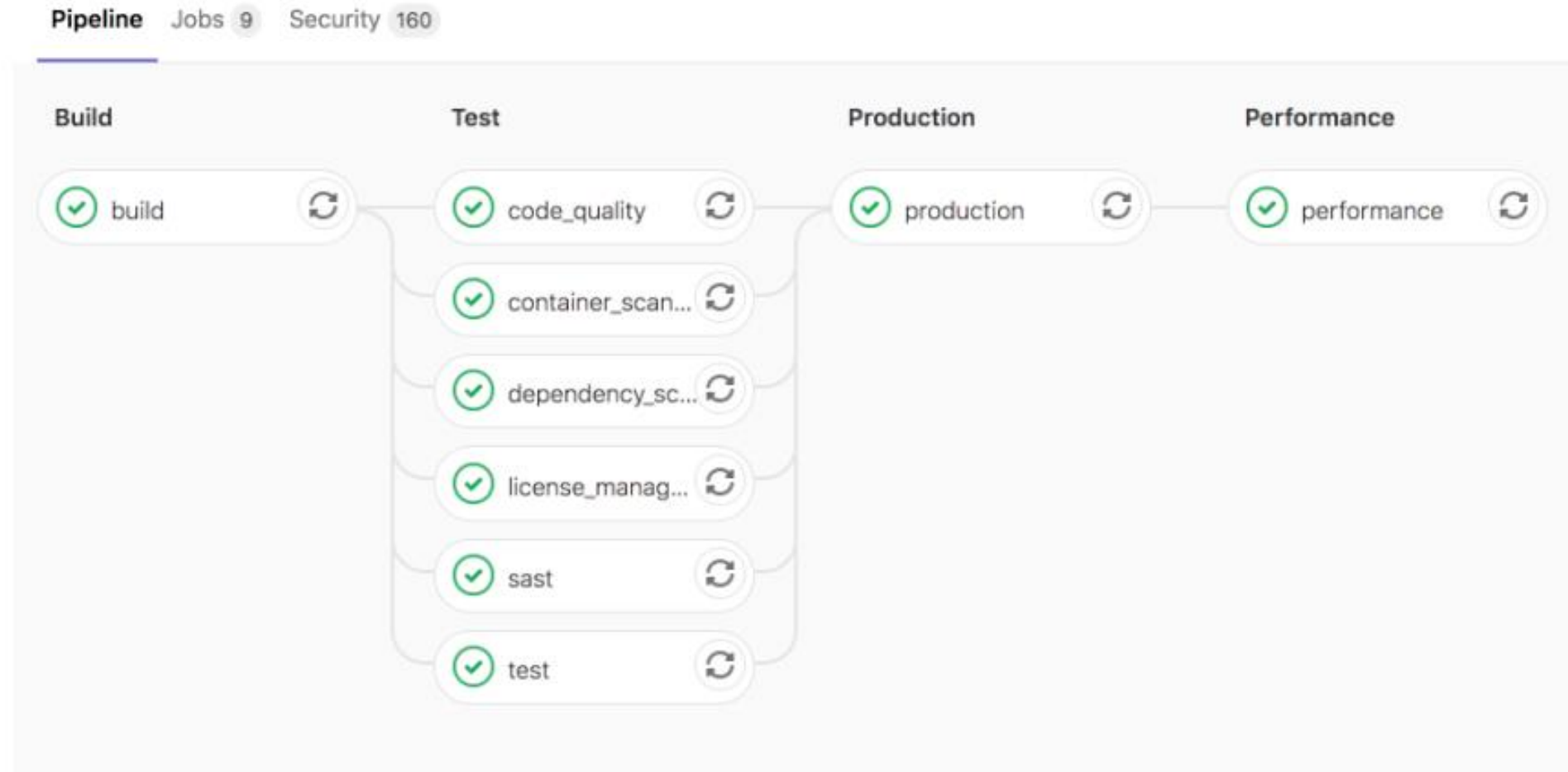
GNS-1



Part I: Introduction to KVM - handout PDF document

# Auto DevOps

Many times, the complexity of software delivery may be challenging. GitLab introduced Auto DevOps feature to face these difficulties and make the experience of CI/CD smoother. Actually, Auto DevOps, when enabled, automatically builds, tests and deploys the application based on a predefined Continuous integration and Delivery configuration. An example of the predefined pipeline is presented below:



EXPLORER

- ▼ NAGIOS
  - ▼ objects
    - ⚙️ commands.cfg
    - ⚙️ contacts.cfg
    - ⚙️ localhost.cfg
    - ⚙️ printer.cfg
    - ⚙️ switch.cfg
    - ⚙️ templates.cfg
    - ⚙️ timeperiods.cfg
    - ⚙️ windows.cfg
  - ▼ private
    - ⚙️ resource.cfg
  - ⚙️ cgi.cfg
  - ⚙️ nagios.cfg
  - ☰ passwd

```

objects > ⚙️ templates.cfg
67  define host {
83  }
84
85
86
87  # Windows host definition template
88  # This is NOT a real host, just a template!
89
90  define host {
91
92      name                windows-server                ; The name of this host template
93      use                  generic-host                ; Inherit default values from the generic-h
94      check_period         24x7                        ; By default, Windows servers are monitored
95      check_interval       5                          ; Actively check the server every 5 minutes
96      retry_interval       1                          ; Schedule host check retries at 1 minute i
97      max_check_attempts   10                         ; Check each server 10 times (max)
98      check_command        check-host-alive           ; Default command to check if servers are "
99      notification_period  24x7                       ; Send notification out at any time - day o
100     notification_interval 30                        ; Resend notifications every 30 minutes
101     notification_options  d,r                       ; Only send notifications for specific host
102     contact_groups        admins                    ; Notifications get sent to the admins by d
103     hostgroups            windows-servers           ; Host groups that Windows servers should b
104     register              0                        ; DON'T REGISTER THIS - ITS JUST A TEMPLATE
105  }
106
107
108
109  # We define a generic printer template that can
110  # be used for most printers we monitor
111

```

MORE VIDEOS

OUTLINE

Running pre-flight check on configuration data...

Checking objects...

Checked 8 services.

Checked 1 hosts.

Checked 1 host groups.

Checked 0 service groups.

Checked 1 contacts.

Checked 1 contact groups.

Checked 24 commands.

Checked 5 time periods.

Checked 0 host escalations.

Checked 0 service escalations.

Checking for circular paths...

Checked 1 hosts

Checked 0 service dependencies

Checked 0 host dependencies

Checked 5 timeperiods

Checking global event handlers...

Checking obsessive compulsive processor commands...

Checking misc settings...

Total Warnings: 0

Total Errors: 0

[MORE VIDEOS](#)

Things look okay - No serious problems were detected during the pre-flight check



# The Streams of Learning™

# General Introduction

Introduction  
to  
OAV

OAV  
Architecture  
Requirements  
for NRENs

The  
OAV  
Architecture  
Blueprint

Towards  
Intelligent  
Networks

**Introduction to...**

- Data Modelling
- APIs
- Party Management
- Core commerce Management
- Production
- Virtualisation
- Automation
- Configuration Management
- Orchestration
- Intelligence Management
- AI

# CAPTIONS



# Agile, DevOps, CI/CD

Gitlab

Github

Jenkins

GitlabCI

**Coming soon!**

Bitbucket      Bamboo

# CAPTIONS

# Agile, DevOps, CI/CD

**Modelling**

**YANG**

**Formats**

JSON  
YAML  
XML

**Protocols**

RESTCONF  
NETCONF

**API Tools**

Intro to API

**Coming soon!**

FastAPI

# CAPTIONS

# Production

Hypervisor

Container

Public/Private  
Clouds

AWS/Azure/GCP

Automation  
Tools

Automated  
Configuration  
Management

Keep Calm  
&  
Carry On

No,  
Really

# CAPTIONS

# Production

Engagement  
Management

Party  
Management



Core  
Commerce  
Management

Intelligence  
Management

# CAPTIONS

Challenges      Achievements      Conclusions      Q&A



# Thank You

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