“Lab as Code” con Containerlab

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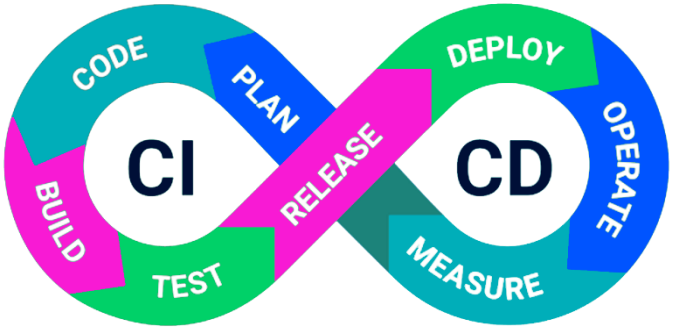
Why virtual labs?

A right, not a privilege

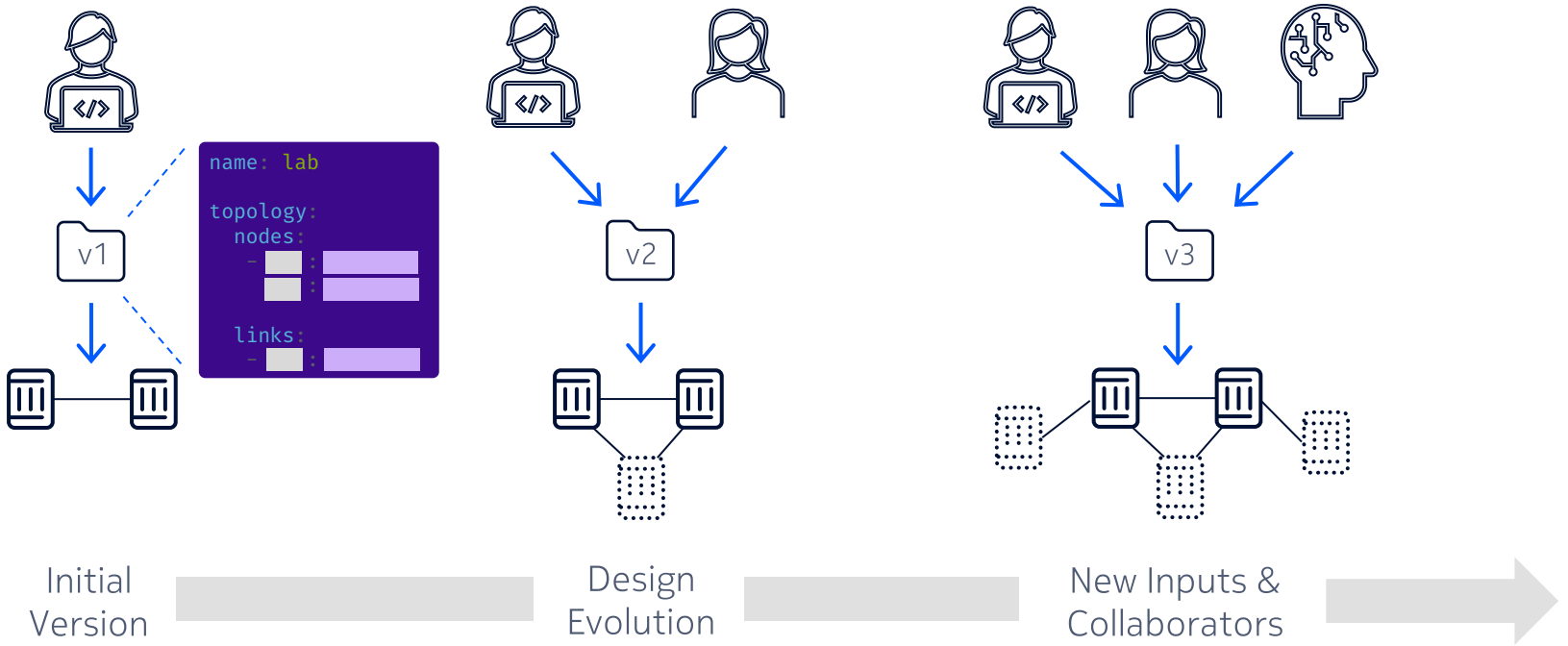
Education
and learning



Change management
and validation

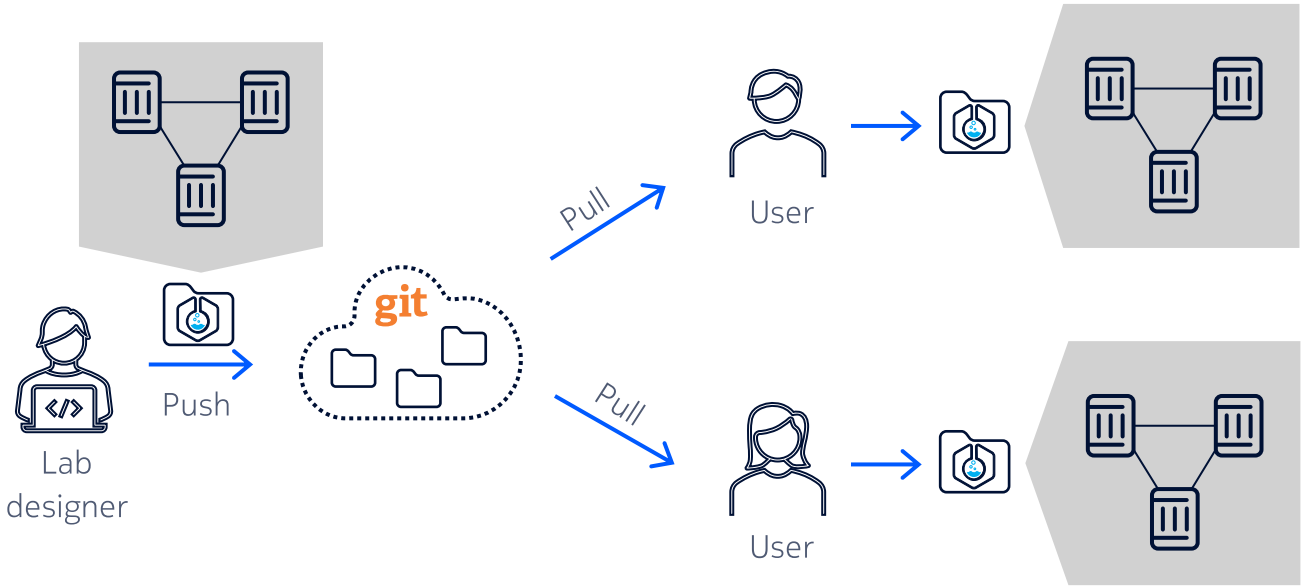
Virtual labs “Okay”, but why “as Code”?

Versioning and Collaboration



Virtual labs “Okay”, but why “as Code”?

Sharing



Containerlab

"A" way to define, run and share networking labs

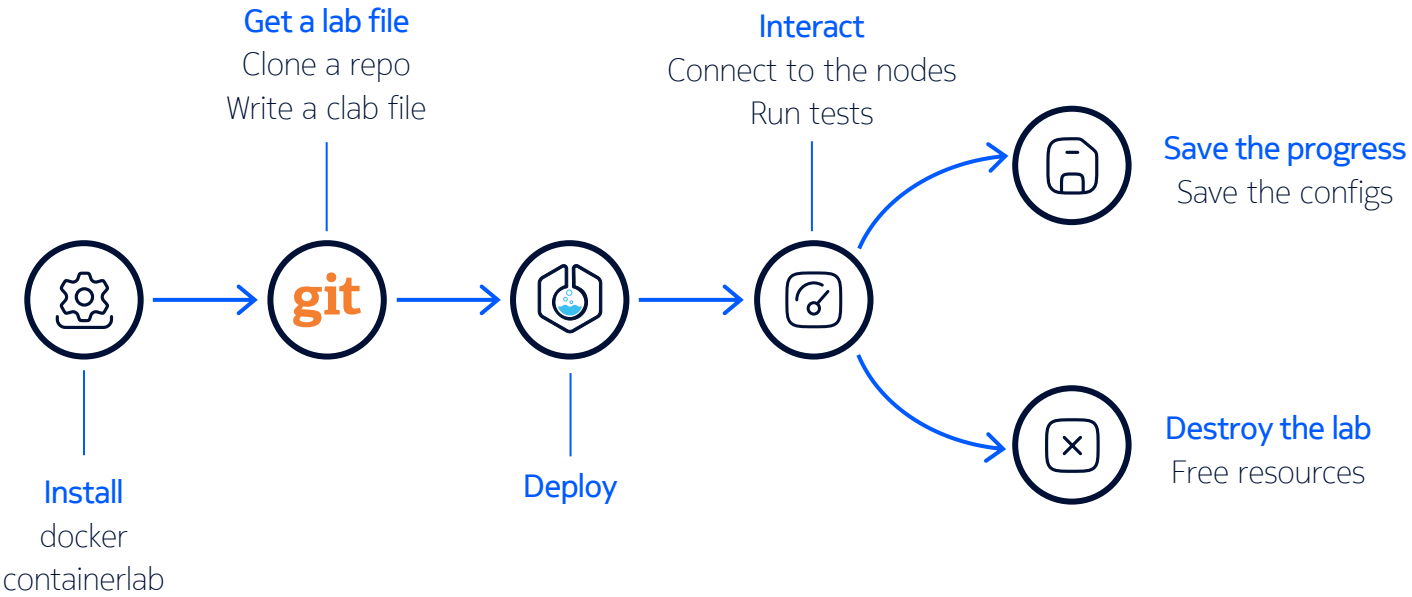
Docker-compose for your virtual labs

Infrastructure-agnostic & CI friendly

A common lab interface for Software and Network engineers

Containerlab

The Workflow



Containerlab node types

Containerized Network OSes

- Sourced by the vendor.
- Fast to spin up.
- Small footprint.
- Shareability and versioning.

Current trend is to **move away from VM** packaging towards containers **for new NOSes**

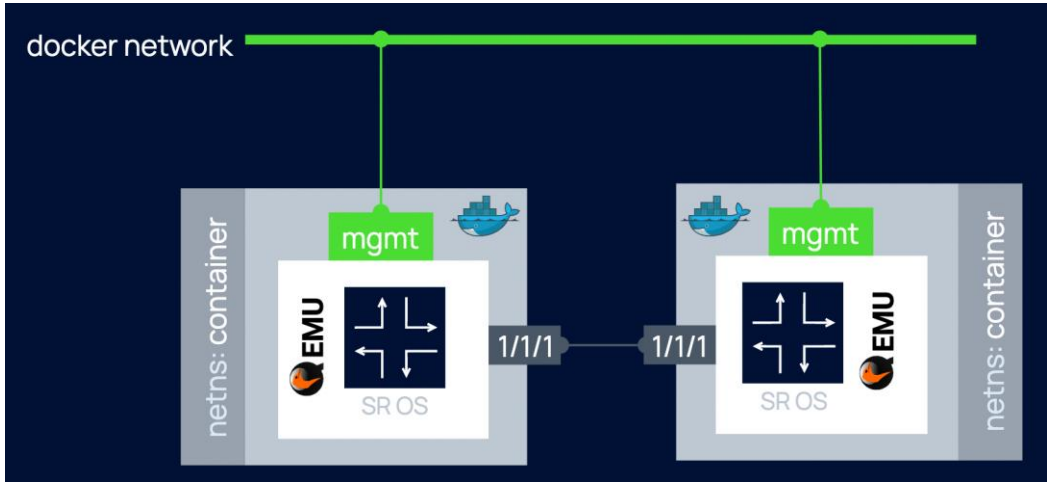
Containerlab node types

Regular container images

- Other available regular container images.
- Emulating clients.
- Hundreds of network-focused software:
  - Telemetry & Logging stacks.
  - Peering software.
  - Flow collectors.
  - etc.

Containerlab node types

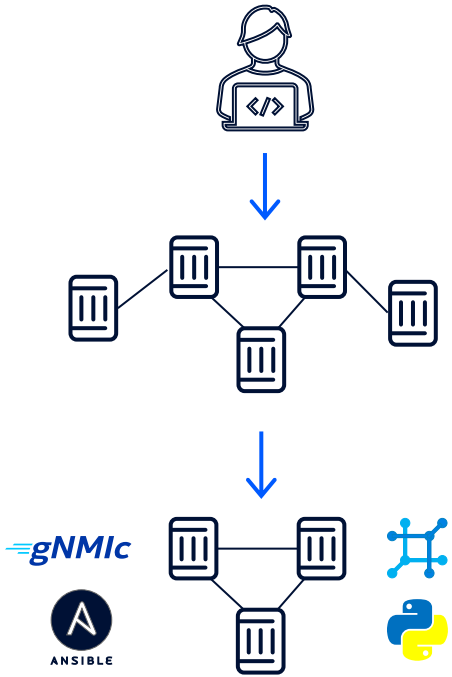
Virtual Machines in a container package



- Traditional NOSes packaged as a VM.
- Integrated with containerlab through vrnetlab open-source project.
- Onboard existing VM-based NOSes in a container package.

Main use cases

For automation



Eats YAML for breakfast
Looking for reproducibility and versioning for labs

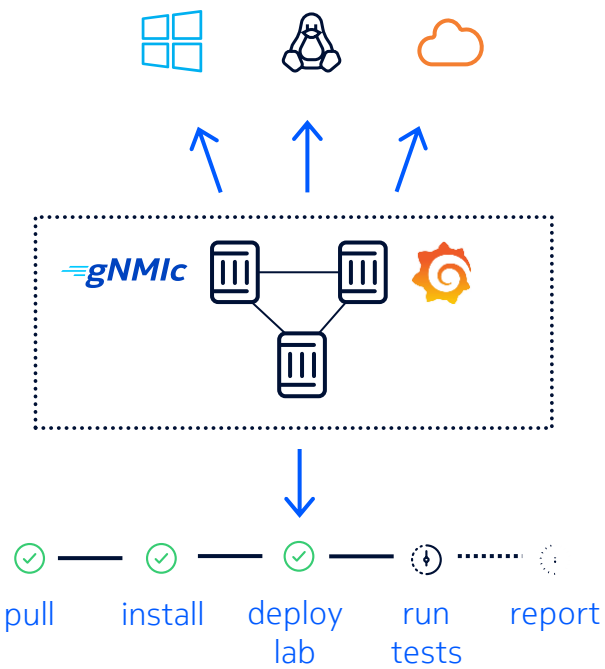
Mostly deals with small-scaled labs

Uses applications that span beyond pure Networking use cases

- Code-first approach
- Git-native
- Quick lab lifecycle management
- Short, sweet, and familiar file layout
- Welcomes containers and VMs
- First-class support for the whole container ecosystem
- Direct connectivity for your automation stack

Main use cases

For automation



Infrastructure agnostic

VM and Container friendly

CI-friendly

Run ~anywhere
Linux/WSL compute

Single binary
statically compiled

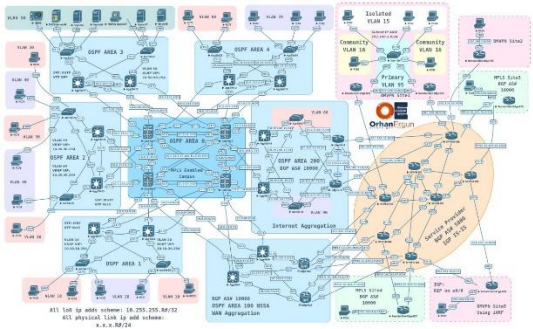
Native container and VM support
VM-integration via vrnetlab

Light
It is just a CLI

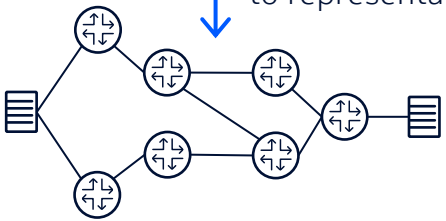
Easy and fast installation
Native to CI runners

Main use cases

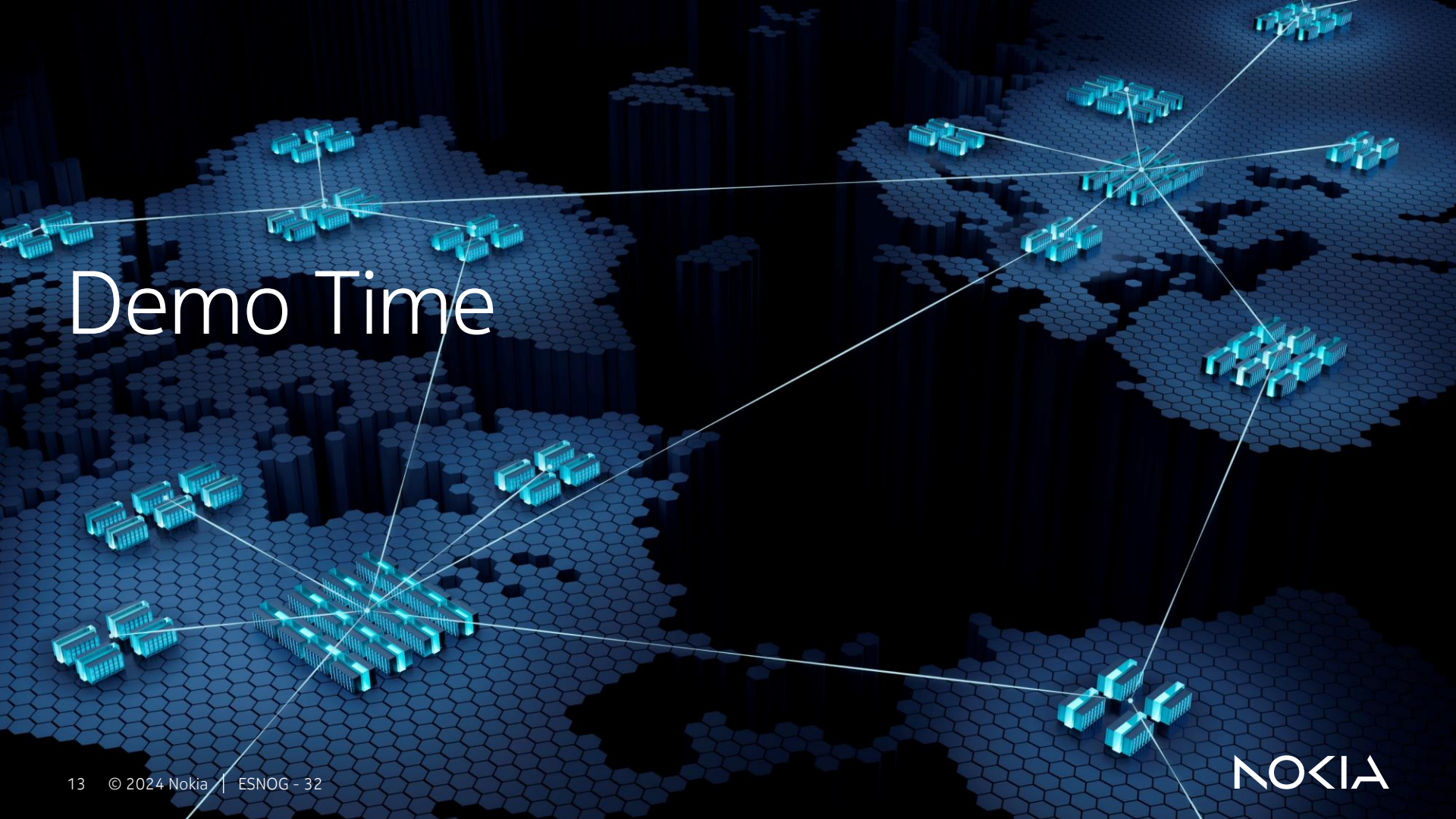
For massive labs



Decompose large network
to representative domains



- The whole lab is a deployment unit
  single-node start/stops
- Adding new nodes/link is a redeployment
- Singe host limits


Demo Time

Who uses Containerlab

NOKIA

Community

Check them out!

Discord server

Lab examples

CONTAINERlab

vrnetlab project

Clabernetes

CONTAINERlab

https://containerlab.dev

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