

# Identity Management, Authentication, and Access Control with VyOS

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VyOS is an [open source](#) network operating system based on Debian.

VyOS is built upon the latest community version of [Vyatta](#) Core edition  
(Brocade).

VyOS code is maintained by [Sentrion S.L.](#)





## Features:

- **Routing** (BGP, OSPF, MPLS, Multicast, policy based routing)
- **Security** (Stateful L4 Firewall)
- **VPN** (IPSEC, GRE, OPEN-VPN)

## How to get it:

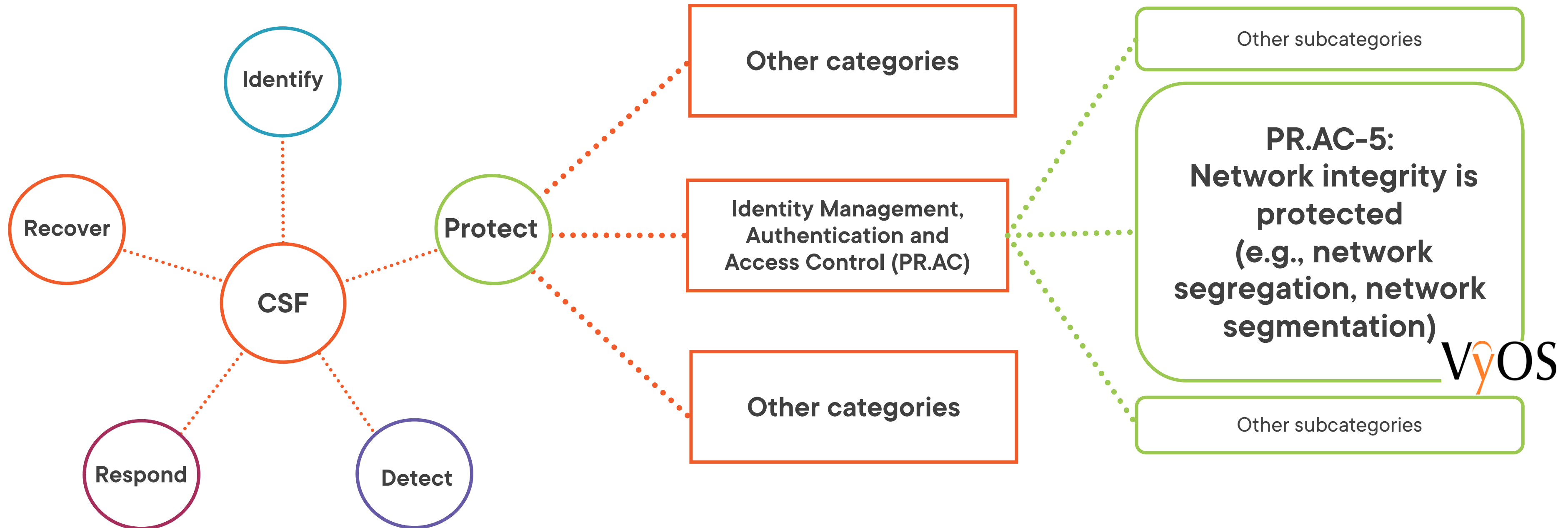
- Current LTS version Release 1.3 (Equuleus) is a **licensed product**
- **Built from code**
- **Download full feature Rolling Release**

**Deployment models : bare metal, virtualized, cloud (AWS, Azure, Google cloud)**

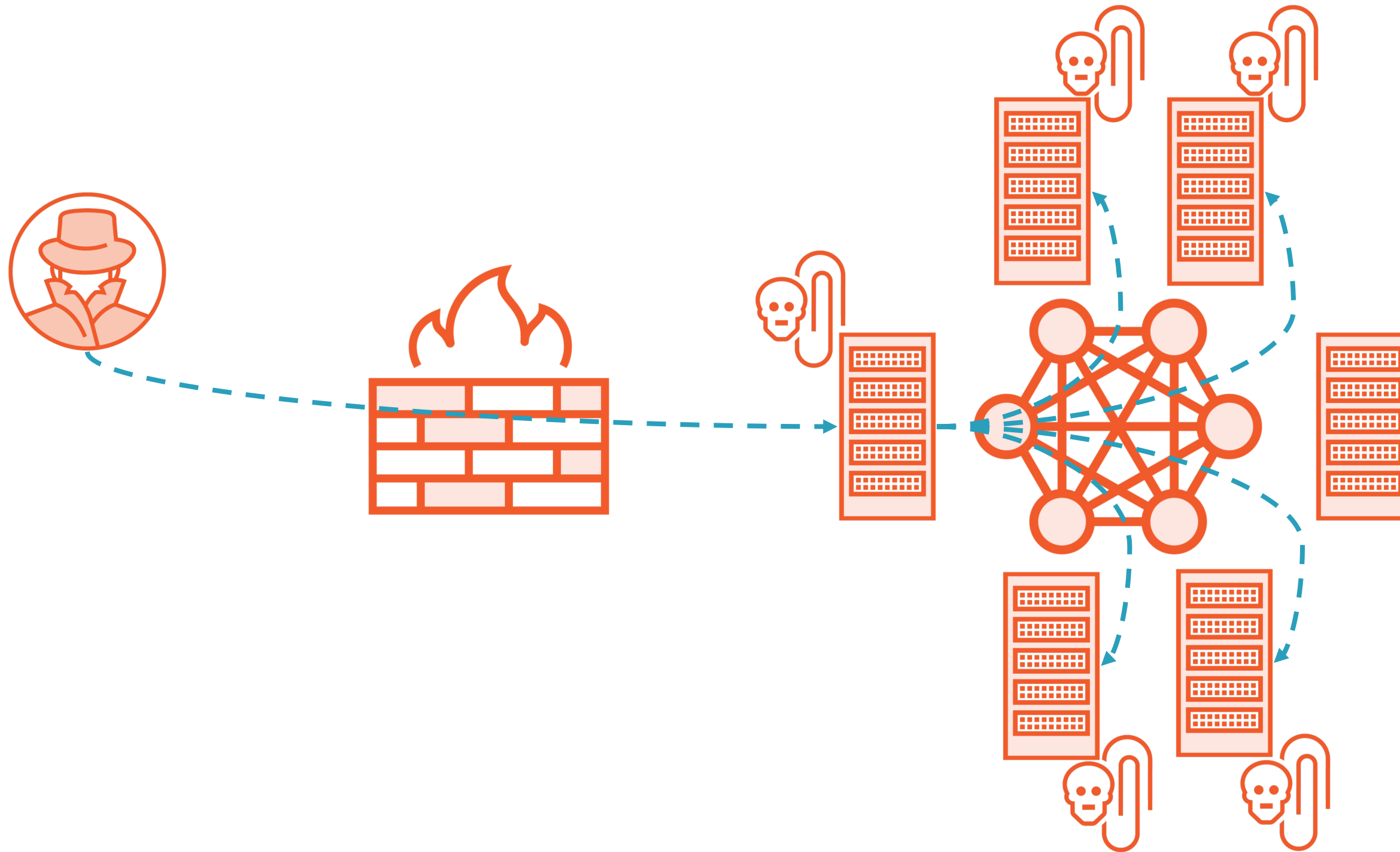
<https://vyos.io/>



# NIST Cybersecurity Framework



# Lateral Movement Attack Explanation



# Network Segmentation and Segregation

## Segmentation

Partitioning a network into smaller networks

Reduce the exposed surface

VLAN, VRF, VPN

## Segregation

Enforcing a ruleset for controlling the communications between hosts and services.

Implement security policy

Firewall, ACL



# Demo

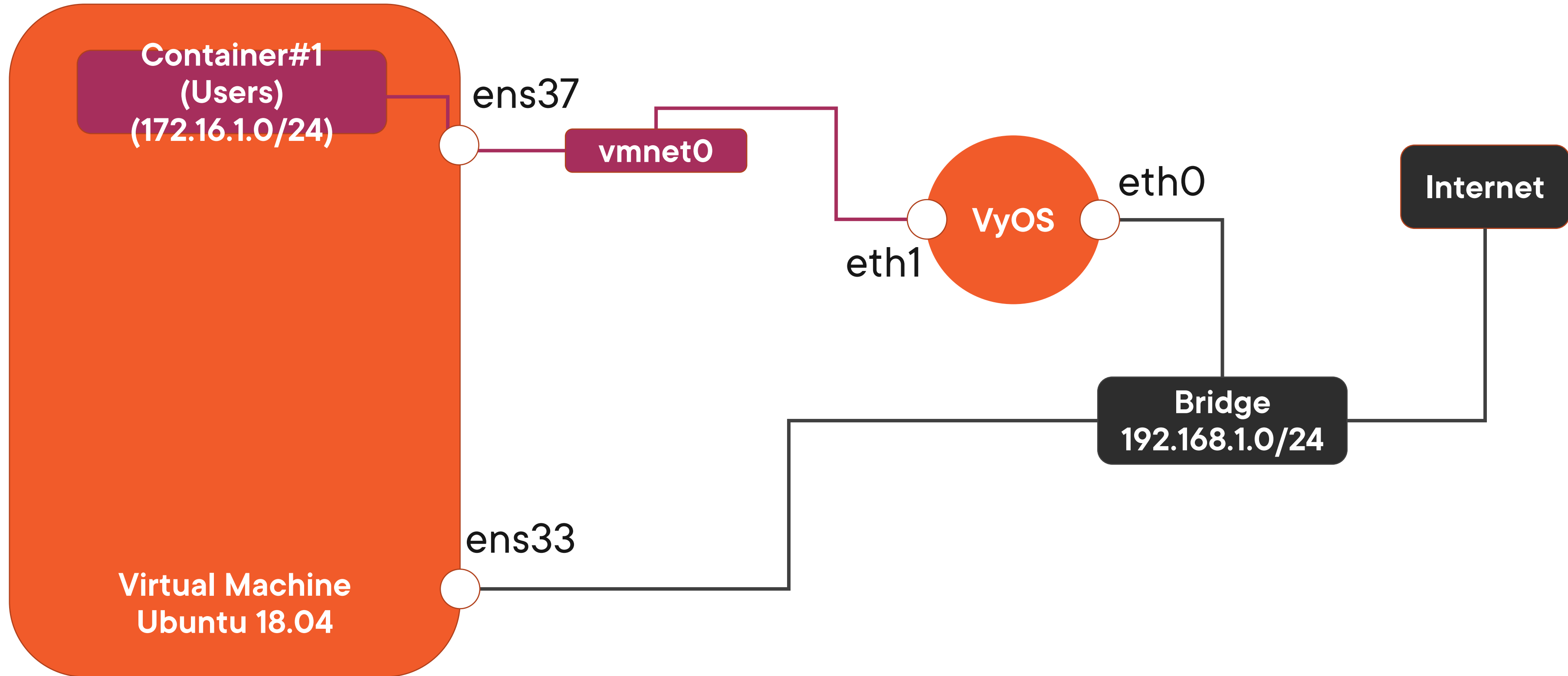


**In this demo you will learn the following:**

- **Download and install VyOS router**
- **Basic configuration for remote management**
- **Basic routing and NAT commands**



# VyOS Installation and Basic Configuration





# Demo



**In this demo you will learn:**

- How to configure VyOS API to enable programmatic access**
- Basic VyOS API call with simple python scripts**



# VyOS configuration

## Legacy CLI-based approach

Manual configuration

Error prone

All Devices must be configured separately

Time consuming

## API based approach

Programmatic configuration

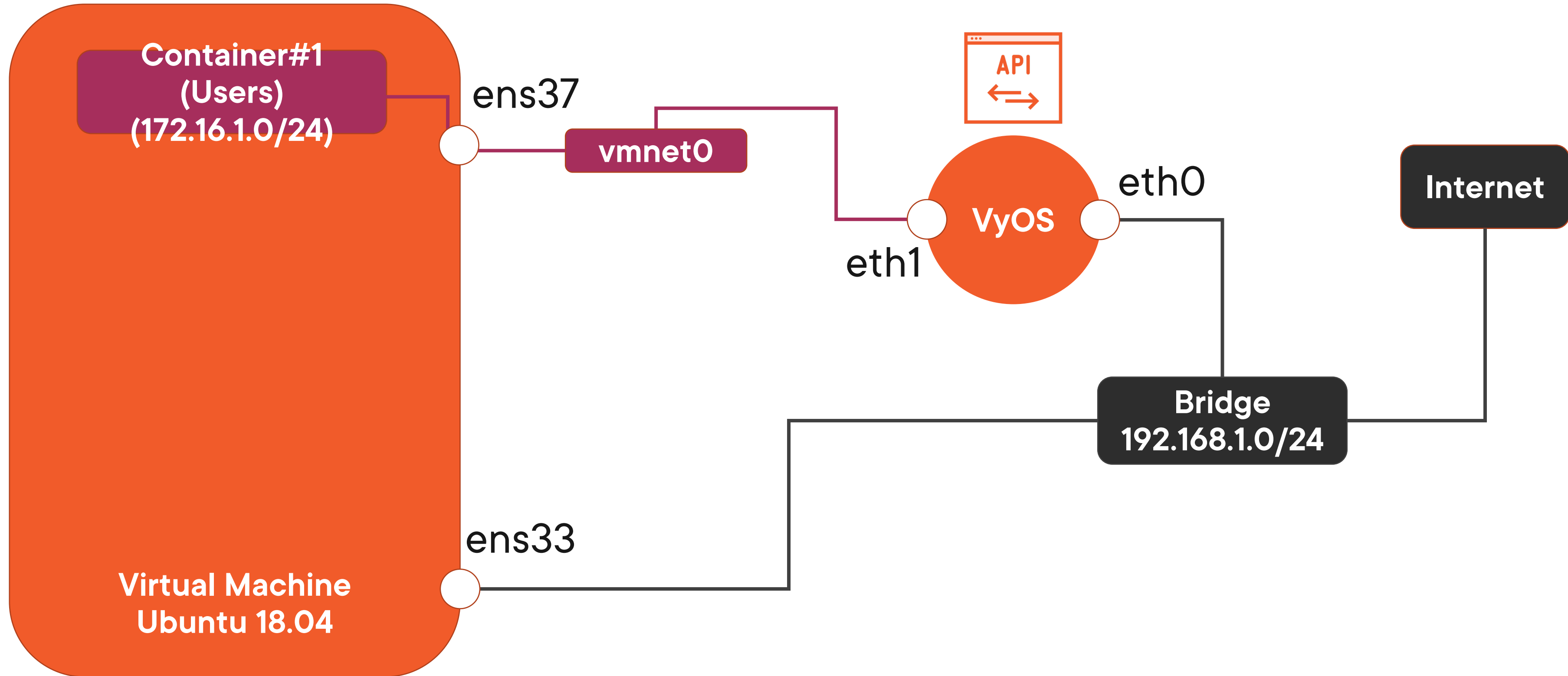
Templating capabilities

Entire infrastructure can be configured at the same time

Real-time configuration



# VyOS Installation and Basic Configuration



# Demo

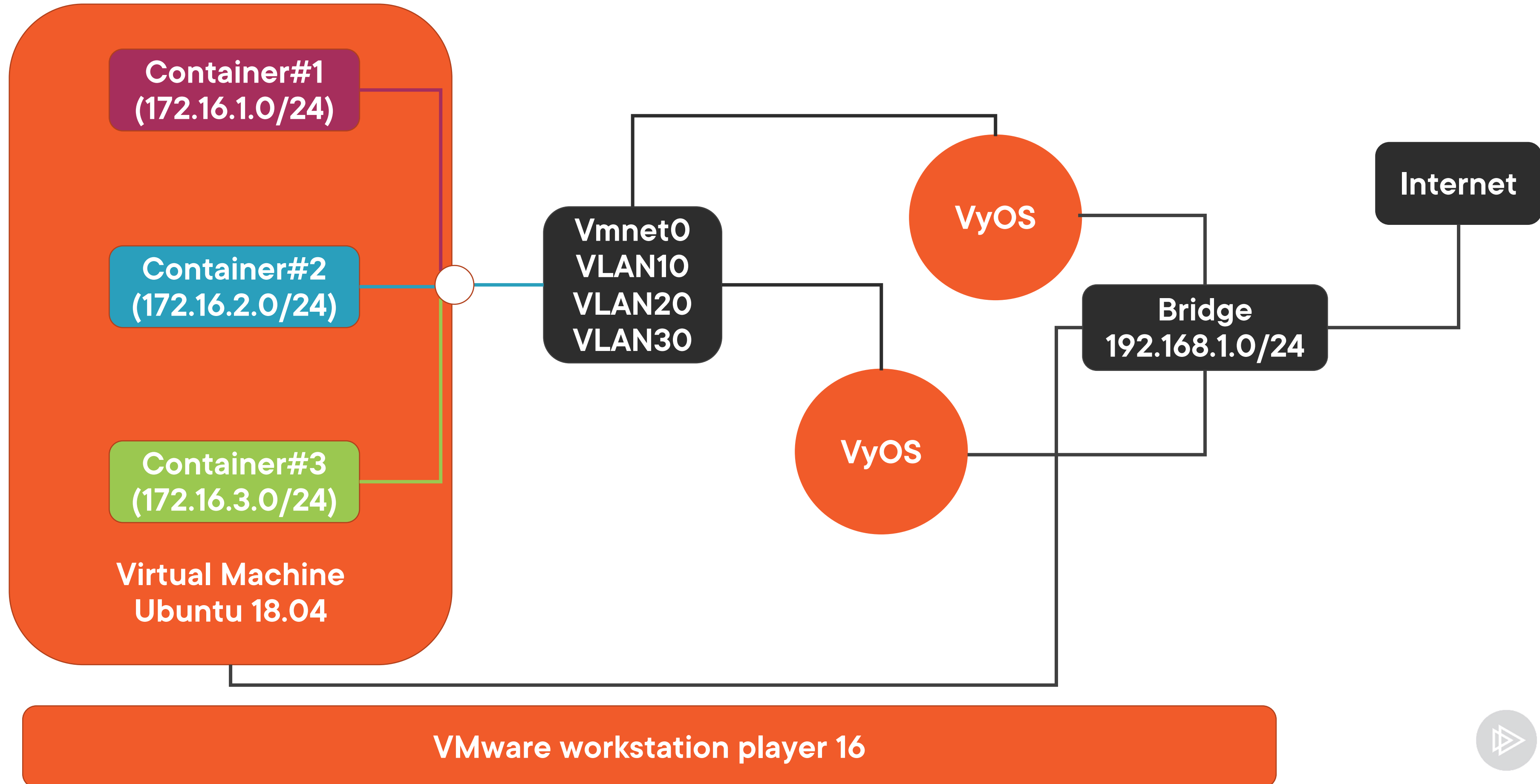


In this demo you will learn:

- How to set up network segmentation and segregation with VyOS configured with VLAN and Firewall policy



# Network Segmentation and Segregation with VLAN



# Demo

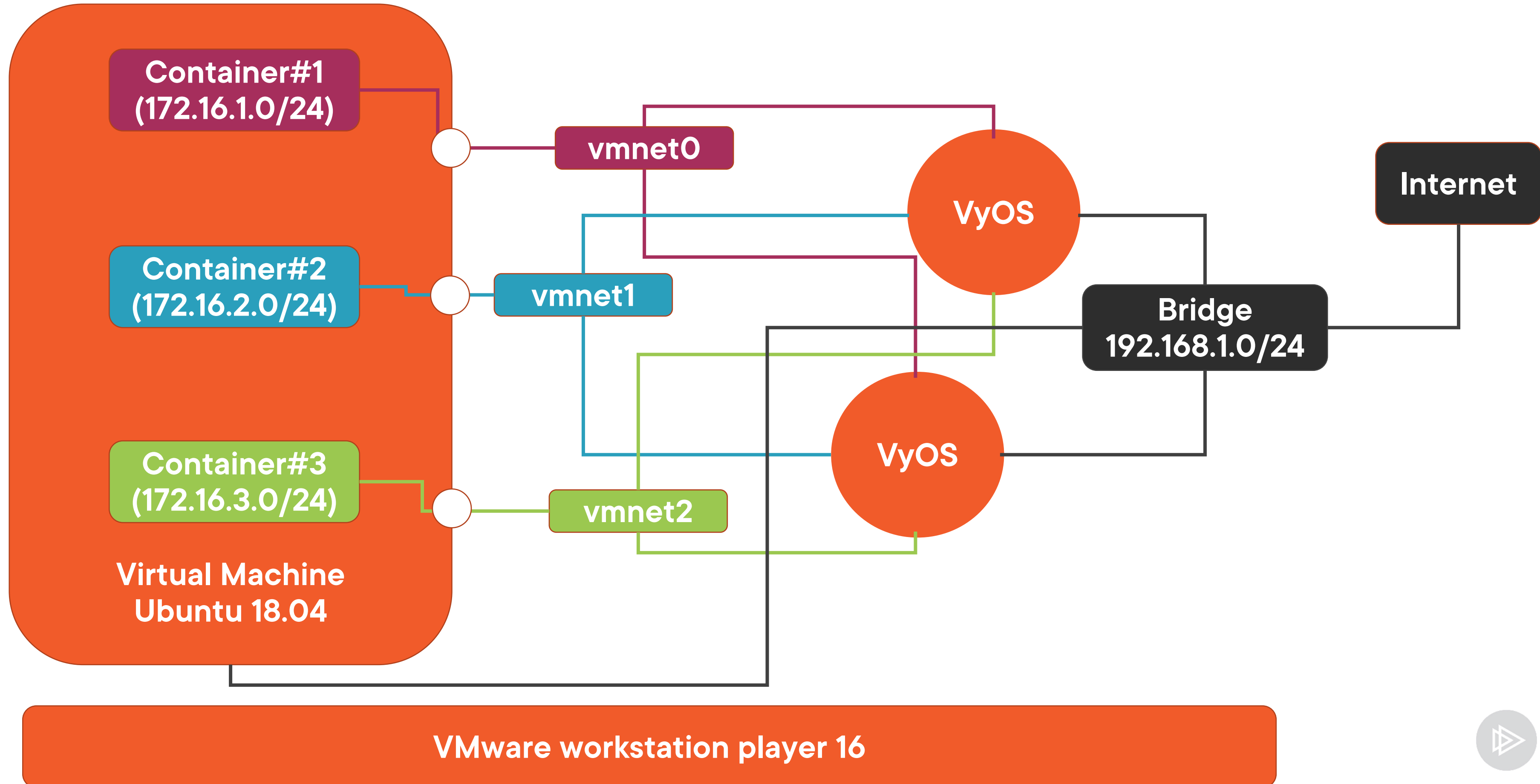


**In this demo you will learn:**

- How to set up network segmentation and segregation with VyOS configured with VRFs**



# Network Segmentation and Segregation with VRF



# Resources

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# More Information

## Capabilities not covered

Automated configuration with Ansible

<https://docs.vyos.io/en/equuleus/automation/index.html>

VyOS API fine tuning

<https://docs.vyos.io/en/equuleus/configuration/service/https.html#http-api>

## Roadmap

Release 1.4 (Sagitta) under development

<https://docs.vyos.io/en/latest/introducing/about.html>

New features (Public Key Infrastructure)

<https://docs.vyos.io/en/latest/configuration/pki/index.html>



Thank you



# Overview/ Summary



**VyOS API configuration**

**VyOS API calls with simple python scripts**

**VyOS features (VLAN, VRF, Firewall) for  
network segmentation and segregation**

