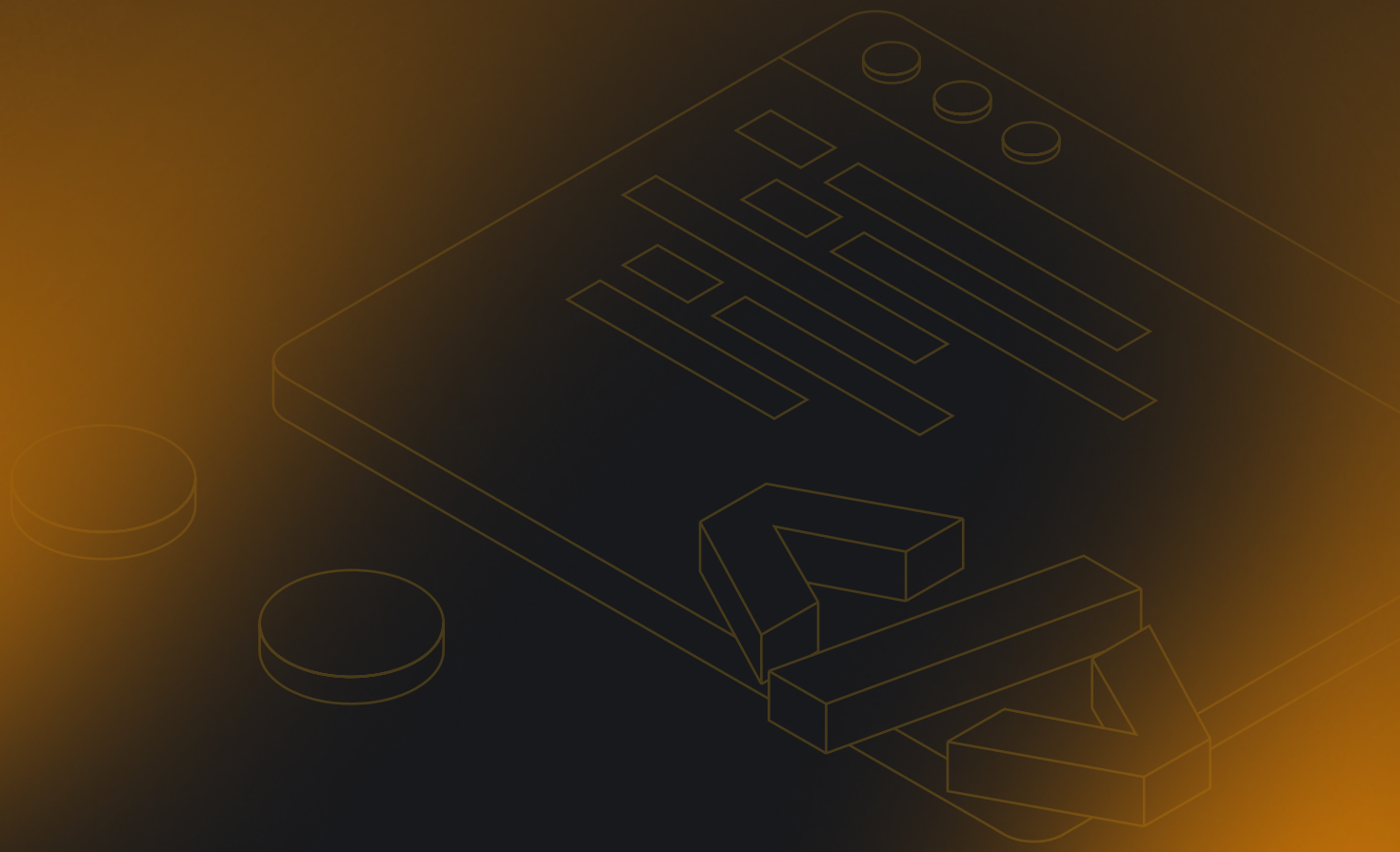
VyOS Networks



Deployment Guide | Technical Doc

OPENSHIFT VIRTUALIZATION

September 2025

Deployment Overview

In this demonstration, I will walk you through the process of creating a custom golden image based on the VyOS 1.4.3 / 1.5 operating system and publishing it to OpenShift Virtualization. This allows customers to easily leverage custom templates for their deployments.

The workflow consists of the following key steps:

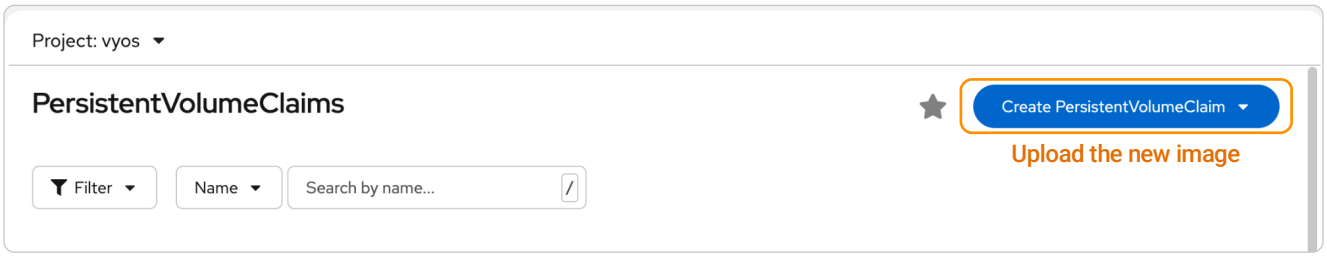
- Start with a custom **QCOW2 image** that includes predefined configurations such as users, packages, and hostnames.
- Publish this image to OpenShift Virtualization as a **Data Volume**, which will serve as the foundation for a new VM template.
- Create a template from the Data Volume.
- Deploy a virtual machine (VM) from the template and validate that all predefined configurations are applied correctly.

Uploading Your QCOW2 Image as a Data Volume

Before we can create a VM template, the QCOW2 image must first be uploaded as a Data Volume. This step ensures that the image can be referenced and reused by templates in OpenShift Virtualization.

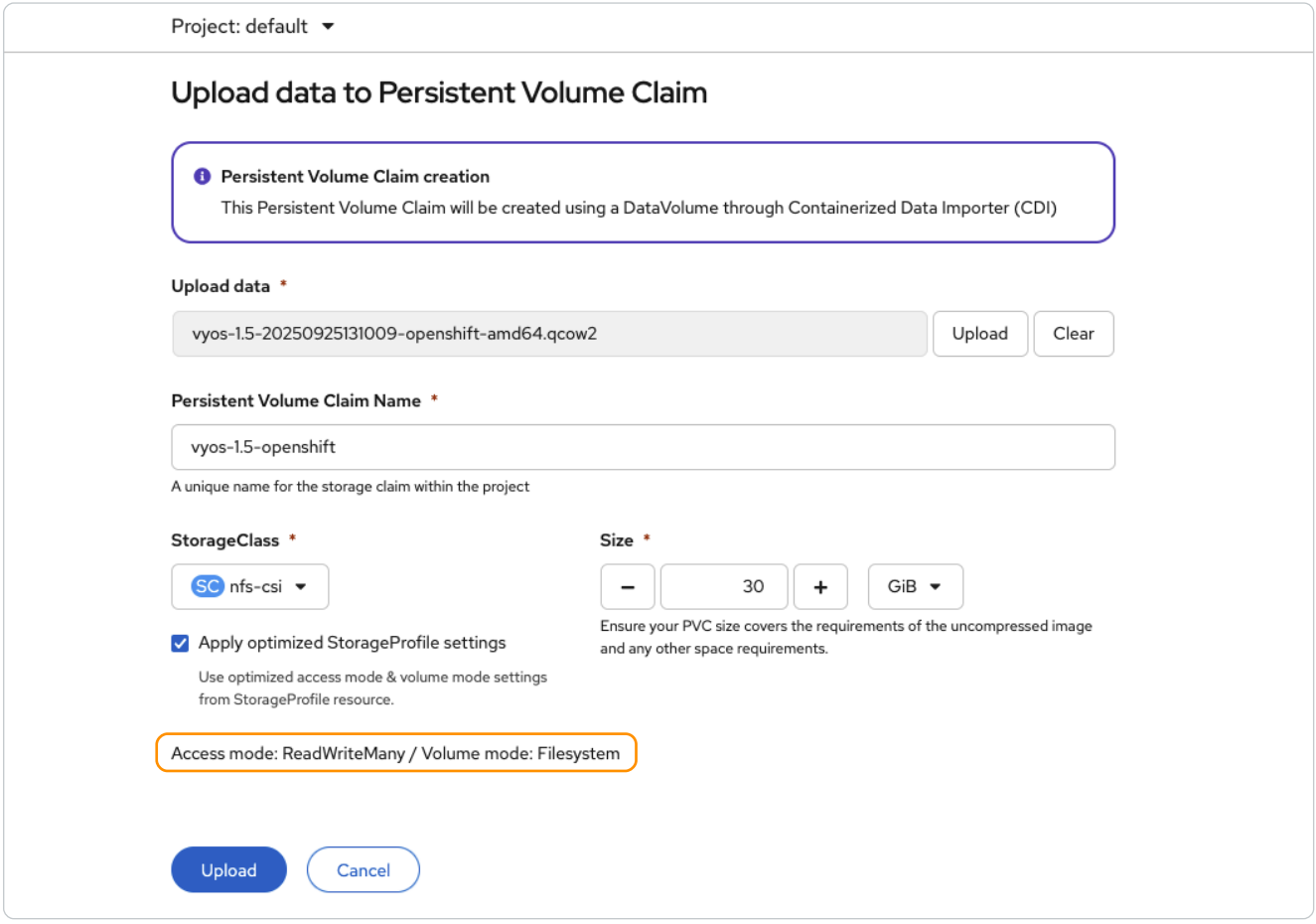
Follow these steps:

1. **Navigate to Storage and select the option that supports Persistent Volume Claims (PVCs).**
2. **Upload your QCOW2 image into the chosen Persistent Volume Claim.**



Once the image is uploaded and available as a Data Volume, it can be linked to a template and used to spin up VMs with your custom VyOS configurations.

3. **Add this new format, which need to be chose as access mode RWX / Volumen: Filesystem**



4. **When the image is uploaded to our PVC, a template can be created using the data module. When the VM is started up, it will use the provided data volume as the boot volume for the VM with all the installation packages we requested**

Create a template from the Data Volume

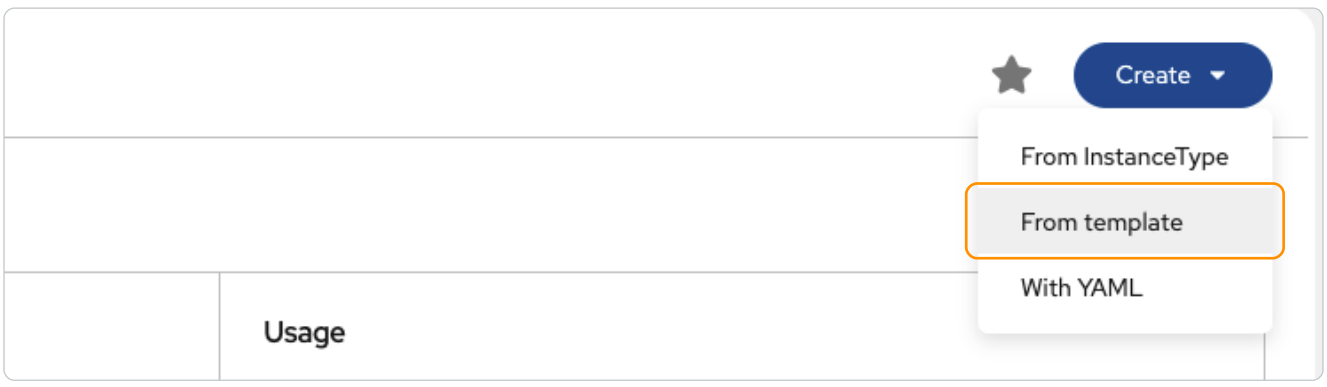
```
kind: Template
apiVersion: template.openshift.io/v1
metadata:
  name: vyos-1.5-devops-openshift
  namespace: vyos
  labels:
    flavor.template.kubevirt.io/medium: 'true'
    os.template.kubevirt.io/debian: 'true'
    template.kubevirt.io/type: vm
    vm.kubevirt.io/template: server.medium
    vm.kubevirt.io/template.namespace: vyos
    workload.template.kubevirt.io/server: 'true'
  annotations:
    iconClass: icon-debian
    name.os.template.kubevirt.io/vyos-1.5: VyOS 1.5 For DevOps
objects:
  - apiVersion: kubevirt.io/v1
```

```
kind: VirtualMachine
metadata:
  annotations:
    vm.kubevirt.io/validations: |
      [
        {
          "name": "minimal-required-memory",
          "path": "jsonpath::.spec.domain.resources.requests.memory",
          "rule": "integer",
          "message": "This VM requires more memory.",
          "min": 1073741824
        }
      ]
  labels:
    app: '${NAME}'
    vm.kubevirt.io/template: vyos-1.5-medium
    vm.kubevirt.io/template.revision: '1'
    vm.kubevirt.io/template.version: v0.19.4
  name: '${NAME}'
spec:
  dataVolumeTemplates:
    - metadata:
        name: '${NAME}-rootdisk'
      spec:
        storage:
          resources:
            requests:
              storage: 30Gi
          accessModes: []
          storageClassName: nfs-csi
        source:
          pvc:
            name: vyos-1.5-openshift
            namespace: vyos
  running: false
  template:
    metadata:
      annotations:
        vm.kubevirt.io/flavor: medium
        vm.kubevirt.io/os: debian
        vm.kubevirt.io/workload: server
      labels:
        kubevirt.io/domain: '${NAME}'
        kubevirt.io/size: medium
    spec:
      domain:
        cpu:
          cores: 2
          sockets: 1
          threads: 1
        devices:
          disks:
            - name: cloudinitdisk
              disk:
                bus: virtio
            - name: rootdisk
              bootOrder: 1
              disk:
```

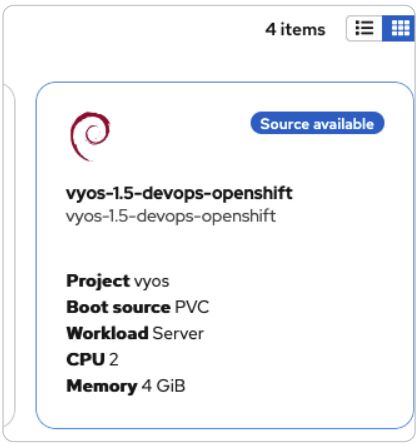
```
                    bus: virtio
              interfaces:
                - name: nic-0
                  model: virtio
                  masquerade: {}
              networkInterfaceMultiqueue: true
              rng: {}
              gpus: []
              hostDevices: []
            resources:
              requests:
                memory: 4Gi
          evictionStrategy: LiveMigrate
          networks:
            - name: nic-0
              pod: {}
          terminationGracePeriodSeconds: 180
          volumes:
            - name: cloudinitdisk
              cloudInitNoCloud:
                userData: |
                  #cloud-config
                  user: vyos
                  password: Vy0S-Op3nshift
                  chpasswd: { expire: False }
            - name: rootdisk
              dataVolume:
                name: '${NAME}-rootdisk'
          hostname: '${NAME}'
parameters:
  - name: NAME
    description: Name for the new VM
    required: true
  - name: CLOUD_USER_PASSWORD
    description: Randomized password for the cloud-init user
    generate: expression
    from: '[a-z0-9]{4}-[a-z0-9]{4}-[a-z0-9]{4}'
```

Deploy a VyOS VM from the template and validate that all predefined configurations are applied correctly.

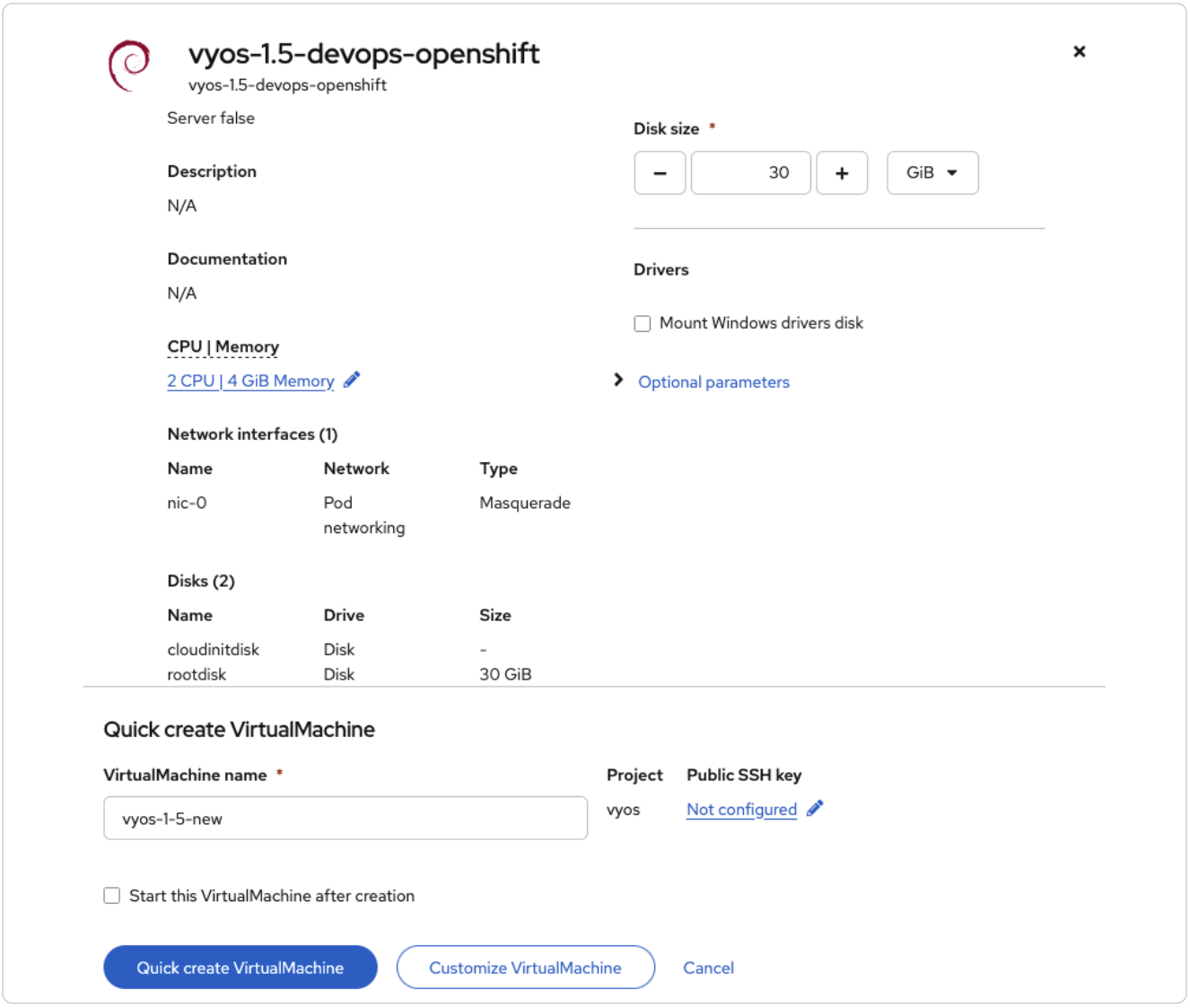
5. Deploy a VM from our template with cloud-init, so, we go to Virtual-Machine and create from template



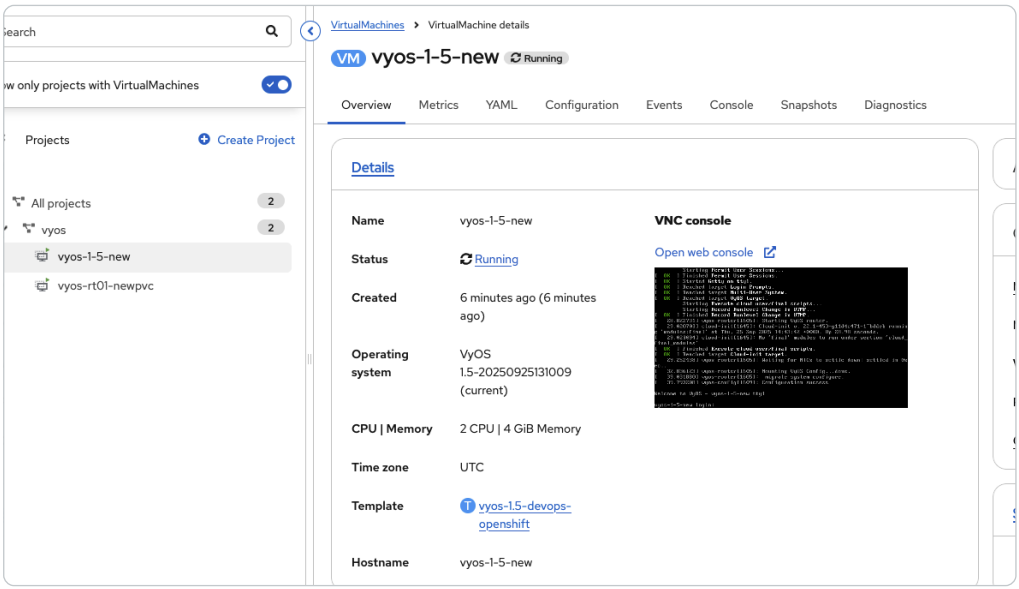
6. Choose our template, it will create the VM with our requirements



7. It shows the VM parameter, if we want to change something or leave it as default.



8. After it, the provision of our VM is done, when it finished we can start the VM



9. Access with our credentials defined in the template

```
Welcome to VyOS!

   ┌──┐
   . VyOS 1.5-20250925131009
   └ ──┘  current

 * Documentation:  https://docs.vyos.io/en/latest
 * Project news:   https://blog.vyos.io
 * Bug reports:    https://vyos.dev

You can change this banner using "set system login banner post-login" command.

VyOS is a free software distribution that includes multiple components,
you can check individual component licenses under /usr/share/doc/*/copyright


Last login: Thu Sep 25 14:53:52 2025 from 10.128.0.209
vyos@vyos-1-5-new:~$
vyos@vyos-1-5-new:~$
vyos@vyos-1-5-new:~$
vyos@vyos-1-5-new:~$ show version
Version:          VyOS 1.5-20250925131009
Release train:    current
Release flavor:   openshift

Built by:         support@vyos.io
Built on:         Thu 25 Sep 2025 13:10 UTC
Build UUID:       9c0be458-153a-499e-ae1f-7bf6200d6151
Build commit ID:  12dbf5156a2a42

Architecture:     x86_64
Boot via:         installed image
System type:      KVM guest
Secure Boot:      n/a (BIOS)

Hardware vendor:  Red Hat
Hardware model:   OpenShift Virtualization
Hardware S/N:
Hardware UUID:    6b68a81b-6eb4-50ea-86d2-5aa37aa1c3fe

Copyright:        VyOS maintainers and contributors
vyos@vyos-1-5-new:~$
```