

OpenStack How-To: Getting Started with Local Infrastructure-as-a-Service



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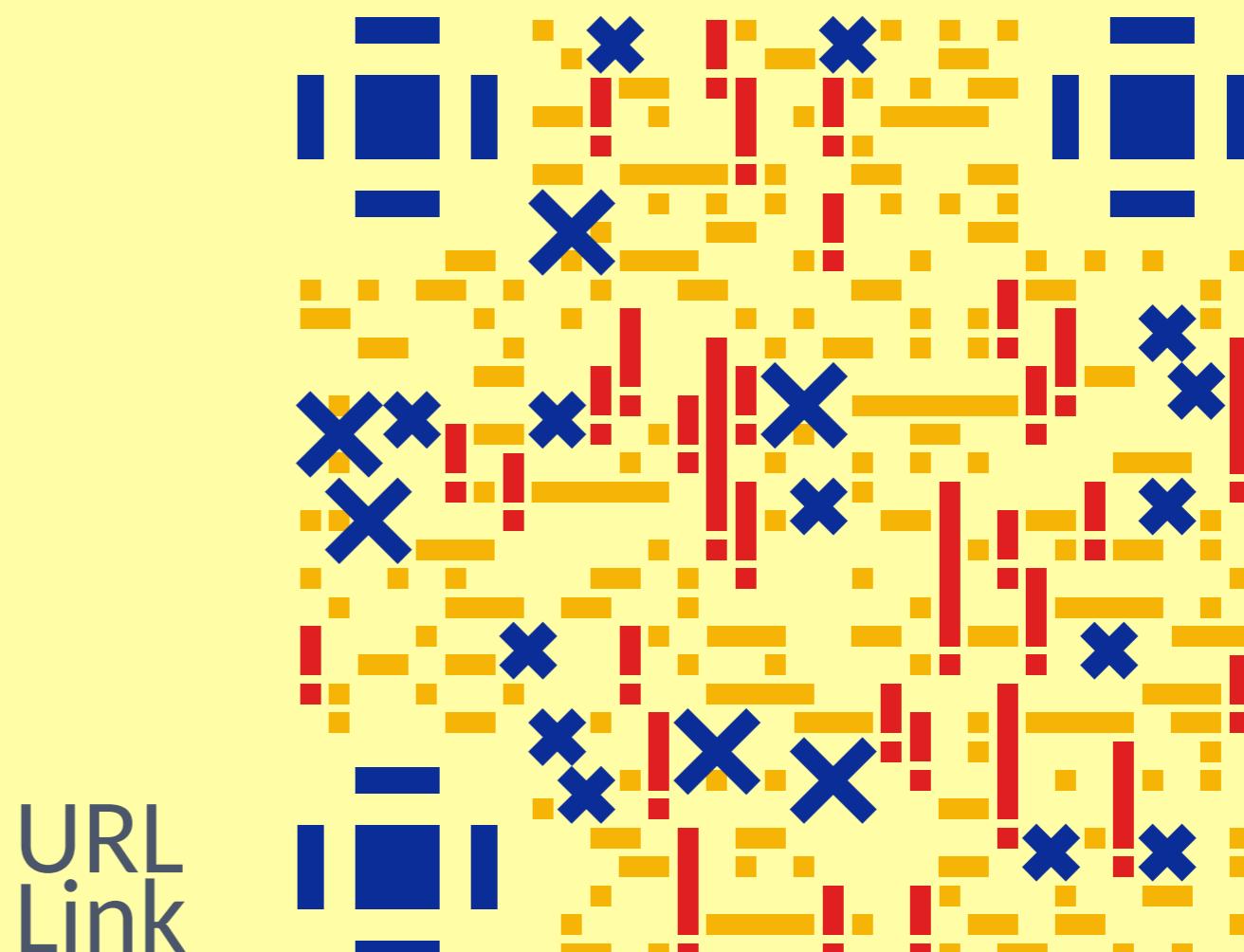
Norwegian AI Cloud University of Oslo, Norway



The bare minimum to run OpenStack on real hardware

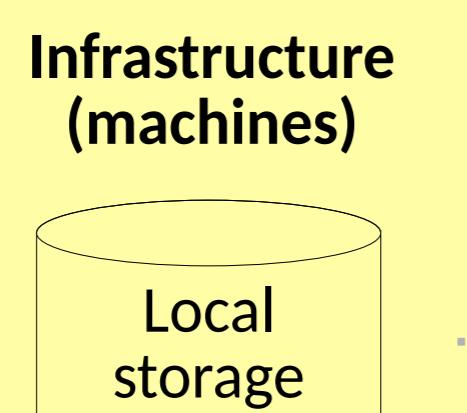
- Two machines (4 CPU cores, 8 GB RAM, 120 GB SSD)
- Networking Service (Neutron)
- Identity Service (Keystone)
- Image Storage (Glance)
- QEMU+KVM Compute (Nova)
- Compute Scheduler (Placement)

QR code for guide (Norwegian)
Password: nevronopenstackcloud



URL
Link

OpenStack and alternatives



Virtual
Infrastructure
(VMs)

Platform
Infrastructure
(containers)

Pros

Cons

Examples
(from on-premises
open to proprietary)

Performance
Custom hardware

One machine=one
use
Slow provisioning
Resource
underutilization

OpenStack Bare Metal (Ironic)
Azure BareMetal
Google Bare Metal
IBM Cloud Bare Metal
Oracle OCI Bare Metal

Flexible
Full isolation
Snapshots
Live migration

Resource contention
vGPU licenses &
hardware

OpenStack
XCP-ng
Proxmox
VMWare vSphere
Azure VMs
Amazon EC2
Google Compute Engine
IBM Cloud VMs
Oracle OCI VM

Built for CI/CD
Fast startup
Operators
Autoscaling

Overhead (control
plane & network)
Persistent storage
Less secure with
shared kernel

Kubernetes (k8s)
OKD/RedHat OpenShift Bare Metal
IBM Cloud Kubernetes
Oracle OKE

Scalable
Full isolation

”
High complexity
Cost

OKD/RedHat OpenShift
RedHat OpenShift Virtualization
RedHat **OpenStack** Services on OpenShift
Microsoft AKS/ACI
Amazon EKS/ECS
Google GKE
Google Cloud Run
IBM IKS
Oracle OCI

- More operational cost for on-prem.
- Image build system required for all alternatives

(hyper)converged

(hyper)scaled