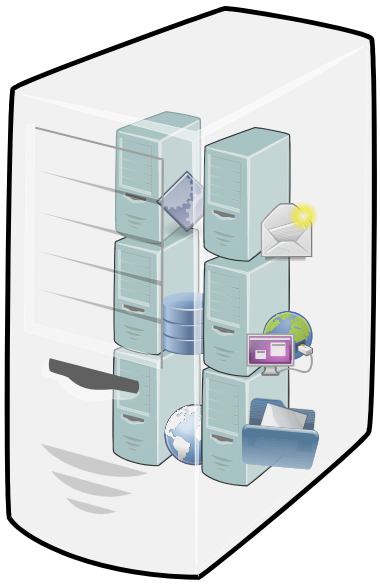
Open Source Software for Virtualized Computing

This is an overview of some important open source tools we use, and how we use them, to build and support virtualized computing environments.

All of these tools are completely free, with no license fees or restrictions on their use or redistribution.

You can use them, too... just like we do. Most importantly, crafting solutions with free tools makes them fully portable and serviceable by anyone with sufficient technical skill, so there's never any vendor lock-in.

Questions? We're happy to help... visit us at https://xviewsolutions.com



Our virtualization infrastructure is built on standard x86-64 servers configured as hostnodes. They may be located on-premise, in a data center or at a public hosting site. A server with a fixed public ipV4 address may be configured over the Internet; physical access is not required.

Using a Fedora/Redhat RPM-based Linux distribution the hostnode setup and configuration may be fully automated. Suitable Linux distributions include:

AlmaLinux https://almalinux.org
CentOS https://centos.org
Fedora https://fedoraproject.org
Oracle Linux https://www.oracle.com/linux
Rocky Linux https://rockylinux.org

Setup and configuration are managed by the Anaconda installer:

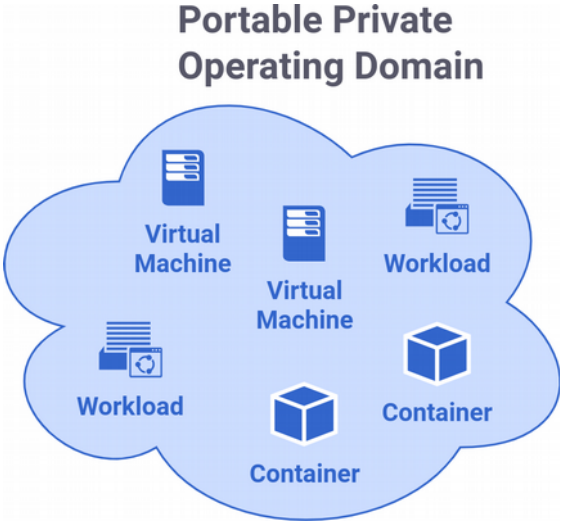
https://fedoraproject.org/wiki/Anaconda
https://anaconda-installer.readthedocs.io

The process may be completely automated with a Kickstart configuration file:

https://pykickstart.readthedocs.io

After setup and configuration are complete we install some OpenVZ tools to assist with creating and managing portable private operating domains:

https://openvz.org
https://wiki.openvz.org



Each Pod has its own Linux operating system, which may be different from the operating system of the hostnode. Some common Linux distributions for Pods include:

AlmaLinux https://almalinux.org
Debian https://www.debian.org
OpenSUSE https://www.opensuse.org

The Pod is an independent computing environment which supports all traditional workloads as well as containers and virtual machines.

Containers may be managed with Docker, Podman and other freely available tools:

Docker https://docs.docker.com/engine/
For Linux the Docker engine is open source under the Apache 2.0 license.

Podman https://podman.io
Fully open source and 100% compatible with Docker.

Virtual machines are supported with KVM (Kernel-based Virtual Machine) and QEMU (Quick Emulator) including hardware architectures different from the hostnode:

KVM https://www.linux-kvm.org
QEMU https://www.qemu.org

s3backer offers a secure and economical way to access cloud storage just like a local hard drive. It can create and manage file systems of unlimited size using any cloud storageprovider that supports the Amazon S3 (Simple Storage Service) protocol:

s3backer https://github.com/archiecobbs/s3backer

BorgBackup is archiving software that saves data as retrievable point-in-time snapshots. It features built-in compression and de-duplication enabling fast and frequent backups:

BorgBackup https://www.borgbackup.org

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