



Savoir-faire
LINUX[®]



LF ENERGY
SEAPATH

Easier management of Seapath using Cockpit

Context

A Seapath Cluster is composed of many physical and virtual machines

- At least three physical machines
- Several virtual machines running inside each hypervisor

Their maintenance becomes quickly difficult

- Two approaches:
 - Ansible (« Infrastructure as code »)
 - Cockpit (united Web interface)



Two approaches



ANSIBLE

- Multi nodes deployment and configuration
- Usable through CLI and SSH
- Deterministic
- Development through YAML “playbooks” files
- Complete support in Seapath

Web GUI approach

- Deployment and configuration more focus on the machine itself
- Used through web local interface
- Two solutions
 - Cockpit project
 - Virt-manager project

Focus on Cockpit

What is the Cockpit project?

- Web-based graphical interface for servers
- Designed to make server administration easier:
 - Logs inspection
 - Start containers and VMs
 - Configure networks
 - Etc
- Active repository
 - Project supported by RedHat
 - High release cycle, 20K commits since 2013
 - Packaged in Yocto and Debian

The screenshot shows the Cockpit web interface with the following details:

- Header:** root@votp-host, Help, Session, Reboot.
- Search Bar:** Search.
- Sidebar (Overview tab selected):** System, Overview (highlighted), Logs, Virtual machines, Accounts, Services, Tools, Terminal.
- Content Area:**
 - Health:** View metrics and history.
 - System information:** Model: LDLC CUSTOM, Asset tag: SN000000474690, Machine ID: a4d71b15966e49d19c699bf574b, Uptime: 7 minutes.
 - Usage:** CPU: 0% of 6 CPUs, Memory: 0.38 / 15 GiB.
 - Configuration:** Hostname: votp-host (edit), System time: Jan 10, 2024, 12:16 PM, Domain: Join domain, Performance profile: none.

Using Cockpit in Seapath

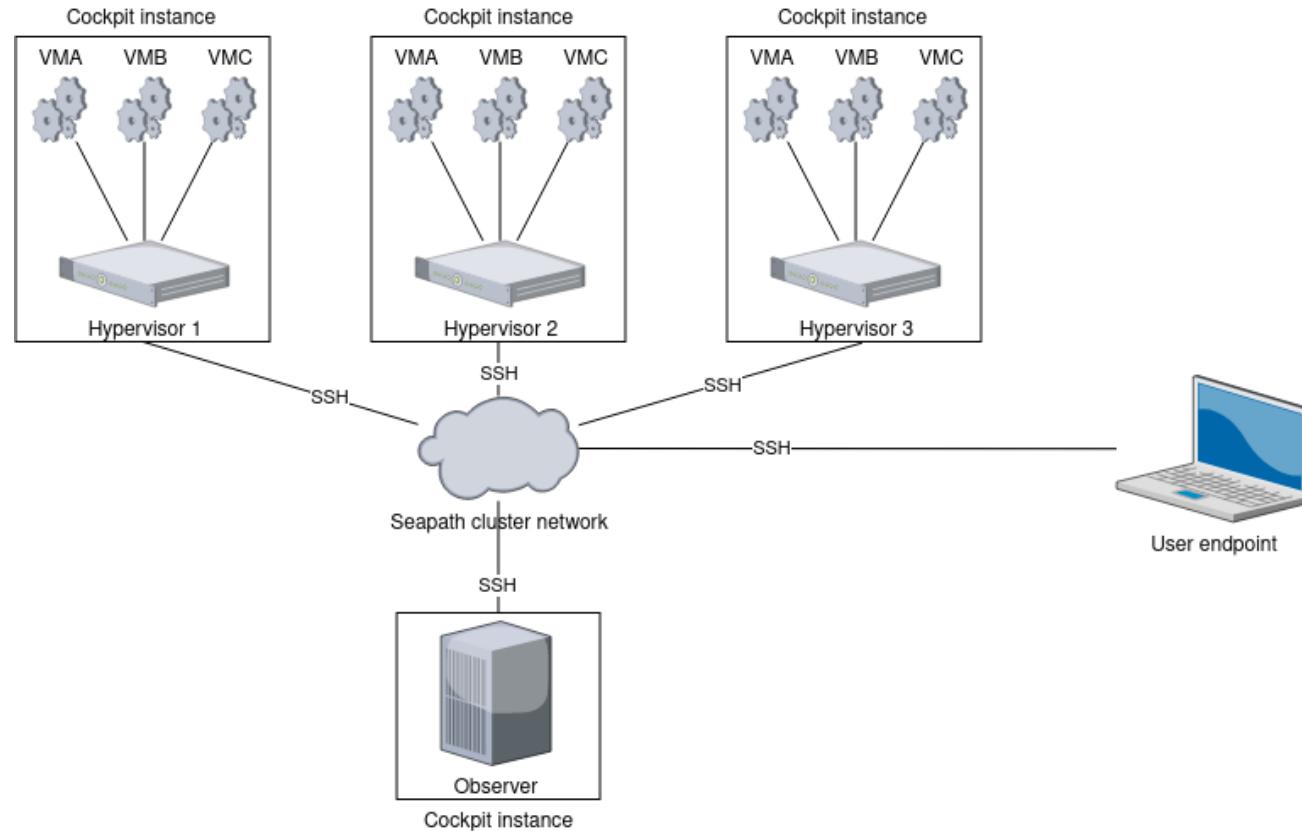
Why using Cockpit in Seapath?

- Debugging each machine in a Seapath cluster can be tricky:
 - Each machine is only accessible through CLI
 - Some tools used in Seapath are not that simple to use (ceph, libvirt, etc)
- Cockpit gives a way to simplify the use of Seapath
 - All the monitoring and the administration is gathered in one place
 - Interconnection between Cockpit machine instance is possible

The screenshot shows the Cockpit web interface with the following details:

- Header:** root@votp-host, Help, Session, Reboot.
- Search Bar:** Search.
- Left Sidebar (System):** Overview (selected), Logs, Virtual machines, Accounts, Services, Tools, Terminal.
- Right Side (votp-host):**
 - Health:** CPU 0% of 6 CPUs, Memory 0.38 / 15 GiB.
 - Usage:** View metrics and history.
 - System information:** Model LDLC CUSTOM, Asset tag SN000000474690, Machine ID a4d71b15966e49d19c699bf574b, Uptime 7 minutes.
 - Configuration:** Hostname votp-host (edit), System time Jan 10, 2024, 12:16 PM, Domain Join domain, Performance profile none.

Using Cockpit in Seapath



Using Cockpit in Seapath

What is currently possible with Cockpit in Seapath

- Individual cluster machine management
 - Journalctl log
 - Account management
 - Systemd services management
- For the hypervisors machines
 - Virtual machines management
 - Import/export
 - Configuration
 - Terminal access

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- Header:** root@votp-host, Help, Session.
- Search Bar:** Search.
- Left Sidebar (System):** Overview (selected), Logs, Virtual machines, Accounts, Services, Tools, Terminal.
- Right Panel - Overview:**
 - votp-host** (running Seapath Host Cluster Minimal Yocto distribution 1.0 (kirkstone))
 - Health:** View metrics and history
 - Usage:** CPU: 0% of 6 CPUs, Memory: 0.38 / 15 GiB
 - System information:** Model: LDLC CUSTOM, Asset tag: SN000000474690, Machine ID: a4d71b15966e49d19c699bf574b, Uptime: 7 minutes
 - Configuration:** Hostname: votp-host (edit), System time: Jan 10, 2024, 12:16 PM, Domain: Join domain, Performance profile: none

Using Cockpit in Seapath

What is planned with Cockpit in Seapath

- Software update integration
 - “One click” Seapath update, powered by the Seapath update mechanism
- Cluster management integration
 - “One click” VM move from one hypervisor to another
 - “One click” maintenance mode for a machine

The screenshot shows the Cockpit web interface with the following details:

- Header:** root@votp-host, Help, Session.
- Search Bar:** Search.
- Left Sidebar (System):** Overview (selected), Logs, Virtual machines, Accounts, Services, Tools, Terminal.
- Right Side (votp-host):**
 - Health:** Reboot button.
 - Usage:** CPU (0% of 6 CPUs), Memory (0.38 / 15 GiB). View metrics and history.
 - System information:** Model: LDLC CUSTOM, Asset tag: SN000000474690, Machine ID: a4d71b15966e49d19c699bf574b, Uptime: 7 minutes.
 - Configuration:** Hostname: votp-host (edit), System time: Jan 10, 2024, 12:16 PM (info), Domain: Join domain, Performance profile: none.



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<https://lfenergy.org/projects/seapath/>



<https://github.com/seapath>



<https://wiki.lfenergy.org/display/SEAP/SEAPATH>



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