

Red Hat  
**Summit**

## Connect

# Jak Dell i Red Hat pomagają bezpiecznie latać?

Bartosz Charliński, Enterprise Architect, Dell Technologies  
Artur Pajak, Solution Architect, Red Hat

# Massachusetts Open Cloud (MOC)



*“We needed a cost-effective, reliable,  
and scalable storage solution to  
accommodate the large amounts of  
data our researchers work with.  
We found it with Red Hat Ceph Storage.”*

PIYANAI SAOWARATTITADA  
DIRECTOR OF ENGINEERING,  
MASSACHUSETTS OPEN CLOUD

# Reference architecture - OpenStack

## Dell EMC Ready Architecture for Red Hat OpenStack Platform

Architecture Guide  
Version 16.1

**DELL**Technologies

# Reference architecture - storage



Reference architecture

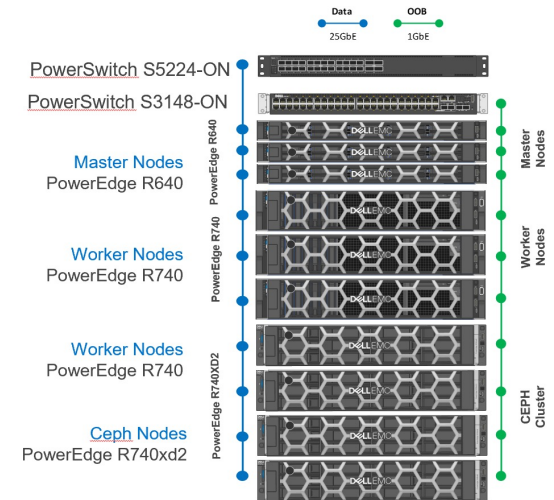
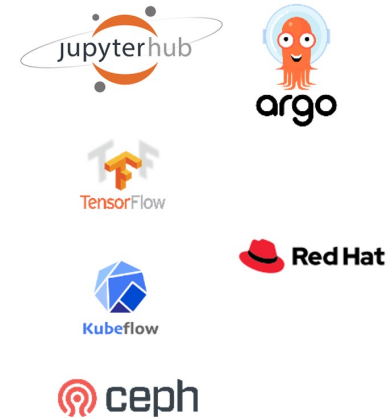
Reliable data lakes, data pipelines, data warehouses, machine learning and end-to-end analytical data platforms

## Red Hat Ceph Storage on Dell EMC servers

Object storage performance and sizing guide

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# ATIVA Investimentos



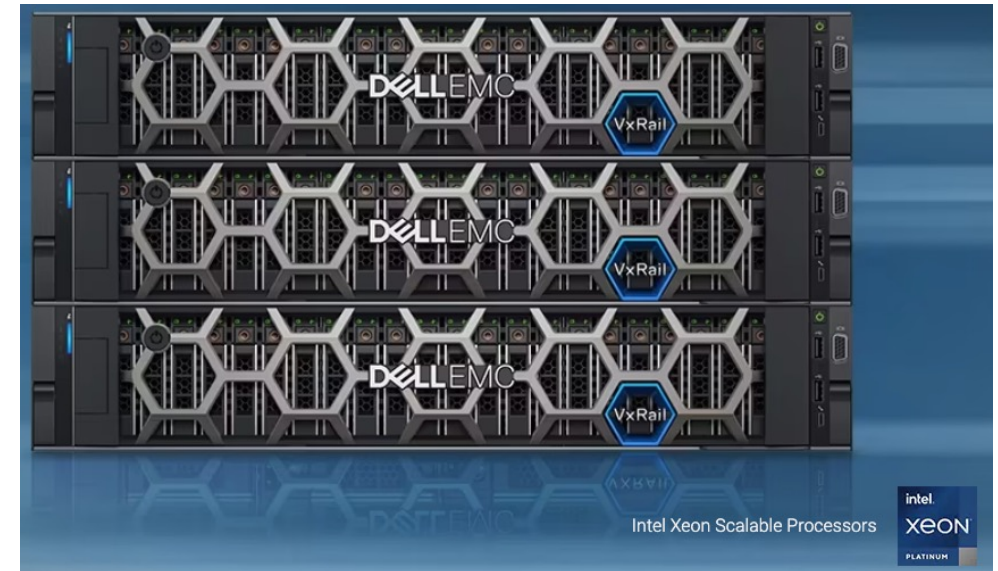
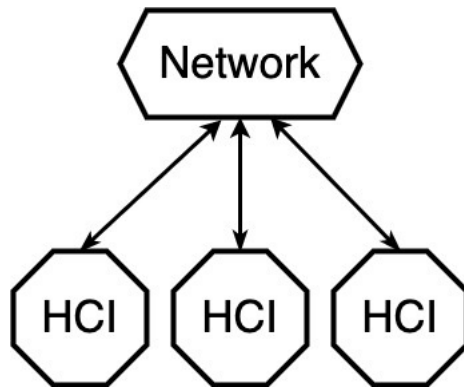
“Before, delivery of larger or more complex solutions could take months. Now, the same size projects can be delivered in days or even a few hours, and we have 100% availability with zero service downtime.”

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**Gustavo Franco Farias**

DevOps and Infrastructure Manager,  
Ativa Investimentos

# Reference architecture – OpenShift/VxRAIL



## Red Hat OpenShift Container Platform 4.6 on Dell Infrastructure

Enabled by Intel-powered Dell PowerEdge Servers; PowerSwitch Networking; and PowerMax, PowerScale, PowerStore, and Unity XT Storage

January 2022

# Openshift

Traditional apps



Cloud-native apps



AI/ML, Functions



Communities of Innovation | Ecosystems of Solutions



Secure & Automated Infrastructure and Operations



Physical



Virtual



Private cloud

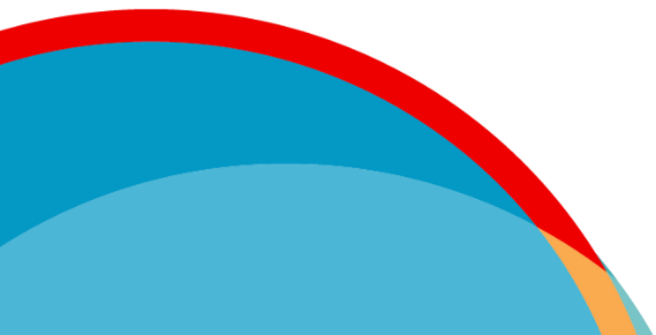
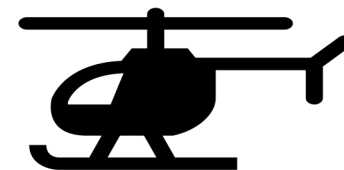
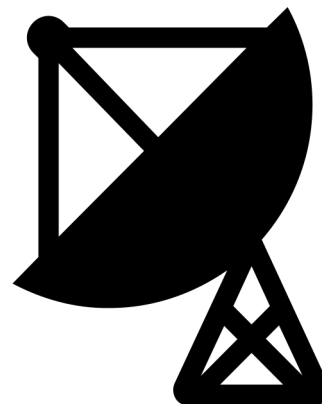
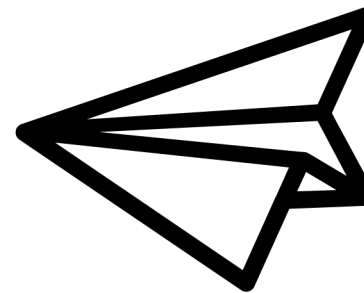


Public cloud



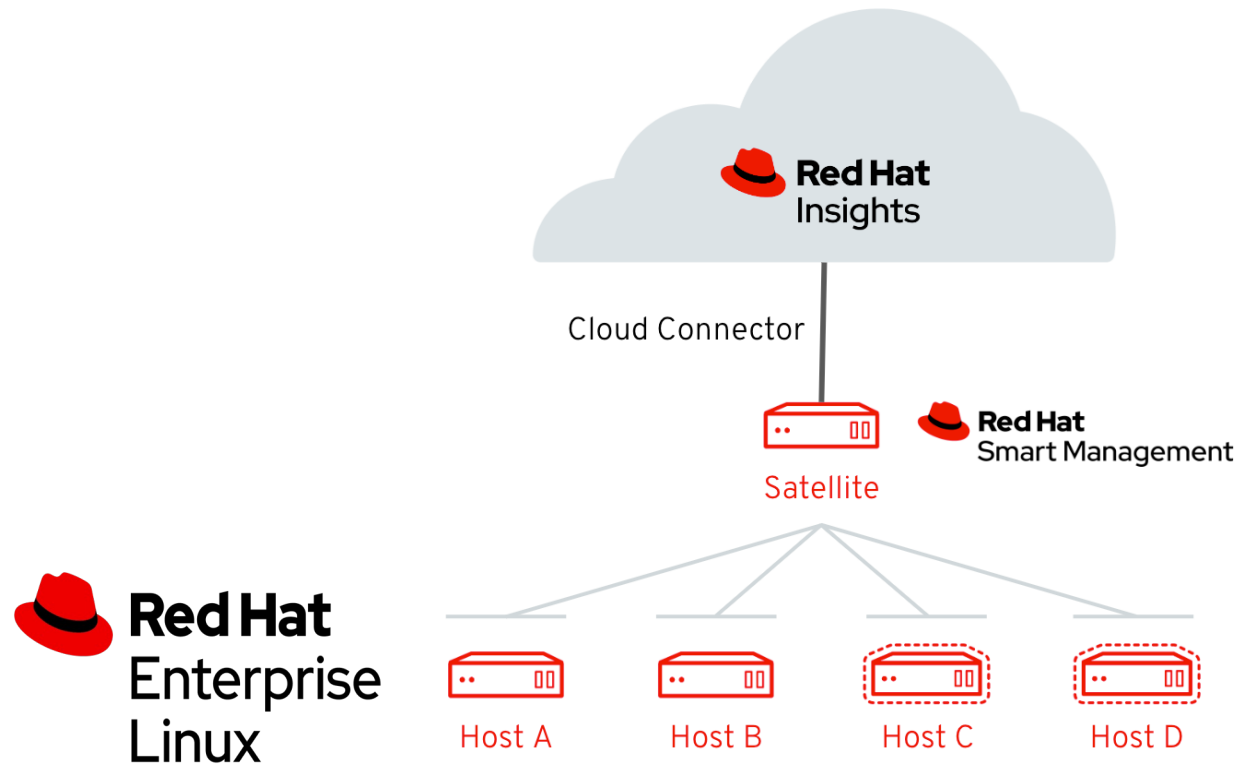
Edge

# Polska Agencja Żeglugi Powietrznej





# Architecture – Red Hat Enterprise Linux



# Making Infrastructure automation simpler

With a breadth of open APIs across our product suites, our platforms are supported on the industry leading automation, orchestration, and configuration management tools



## Ansible Collections

- **Servers**
  - iDRAC, OME and OME-Modular
- **Storage**
  - PowerStore, PowerMax, PowerScale, PowerFlex, Unity and VPLEX
- **Networking**
  - SONiC, OS10, OS9 and OS6
- **HCI**
  - VxRail
- **Data Protection**
  - PowerProtect

## Terraform Providers

- **Servers**
  - Redfish provider
- **Storage**
  - PowerStore provider

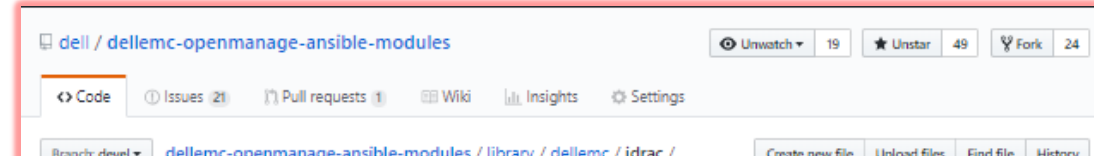
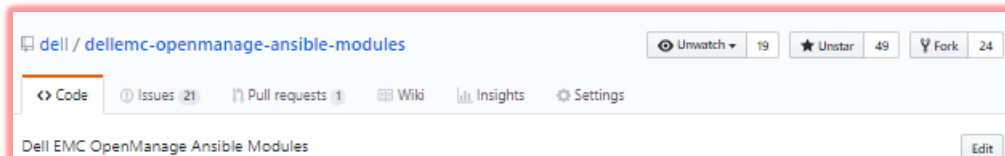
## Puppet Modules

- **Servers**
  - iDRAC
- **Storage**
  - PowerStore
- **Networking**
  - OS10

## SDKs & Libraries

- **Servers**
  - Python scripts for iDRAC, OME & OME-M
  - PowerShell Cmdlets
  - Golang SDK for Redfish
- **Storage**
  - Python SDKs for all storage arrays
  - Golang SDKs
  - PowerShell cmdlets
- **Data Protection**
  - Python library for PowerProtect

# OpenManage Ansible Modules – GitHub repository



<https://github.com/dell/dellemc-openmanage-ansible-modules>

- Open-Source project supported by Dell
- Ongoing development – frequent releases
  - Minor release – every month
  - Major release – semi-annual
- Contributions are welcome



## START STRONG

# with end-to-end supply chain assurance



### DESIGN / DEVELOP

- Silicon root of trust
- Firmware protection (NIST 800-193)
- Data-at-rest protection (SEKM)
- Threat modeling & vulnerability assessment through testing of code
- Secure Development Lifecycle (SDL)
- Remote Full Power Cycle (A.C.)



### SOURCE

- Dell supplier security standards
- Rigorous onboarding & vetting of new suppliers
- Approved vendor list
- Joint collaboration on security
- Supplier personnel security



### MANUFACTURE

- System functional testing
- 3rd party security audit
- Dell-prescribed PPID label
- TAPA facility requirements
- Factory personnel security



### DELIVER

- **Dell Technologies Secured Component Verification**
- Anti-tamper protections in packaging
- Container seals & tracking
- Trusted logistics partners

Only server vendor with a cross portfolio solution for **cryptographically verified hardware integrity\***

\*Based on Dell analysis of publicly available data, October 2020. Available on PowerEdge 14G and newer, except for PowerEdge XE7100, XE7420, XE7220, C6420 and C6525

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