Connect

OpenShift cloud automation with Lenovo & Red Hat

Roberto Massoli
Software Defined Solution Sales Executive
Lenovo Italy
Red Hat is the industry leader in open-source cloud software Lenovo and Red Hat can provide an end-to-end, device to data center open cloud platform including compute, storage, network, end user platform and full cloud software architecture to provide the business agility our customers need. Unlike many of our other partnerships, there are no competitive overlaps between the Red Hat and Lenovo product Portfolios.
OEM VALUE PROPOSITION

Lenovo offers the **best prices** and support for as well as the **best performance** and experience on Red Hat software.

- **Convenience**
  - buy hardware, software and support together

- **Optimized**
  - tested, integrated solutions

- **Value**
  - best pricing, one support call
Two ways to purchase Red Hat Products from Lenovo

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<tr>
<th>Products</th>
<th>OEM</th>
<th>Resell</th>
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<td>Entire RH portfolio</td>
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<td>Terms</td>
<td>Standard &amp; Premium</td>
<td>Standard &amp; Premium</td>
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<tr>
<td></td>
<td>1, 3, &amp; 5 yr</td>
<td>1 &amp; 3 yr</td>
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<tr>
<td>Support Provider</td>
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**OEM or Lenovo Support (1,3,5 yrs)**
- Standard Support: Lenovo L1 & L2 7x24; Red Hat L3 5 days a week 9-5 (business hours)
- Premium Support: Lenovo L1 & L2 7x24; Red Hat L3 7x24

**Resell or Red Hat Support (1,3 yrs)**
- Standard Support: Red Hat L1, L2 & L3 5 days a week 9-5 (business hours)
- Premium Support: Red Hat L1, L2 & L3 7x24
A unique support dedicated to solutions

- A dedicated number
- End-to-end support
- Proactive follow-up
- Direct access to level 2 technicians
- Level 3 escalation
- Full solution support
- Present in 51 countries
The largest selection of components

To meet your needs as closely as possible

- Largest Choice of Processors
- Largest Choice of disks
- Largest Choice of additional cards
End to end Automation Approach

- **Pre-integrated in manufacturing**
  All HW configuration: BIOS, firmware, CPU patches, SmartNIC, FPGA, GPU, etc.

- **Orchestrating OS & Cloud deployment**

- **Configure network with the parameters matching server config**

- **Storage or any other Ansible programmable platform**

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Lenovo Open Cloud Automation

Unbox -> Compute -> Storage -> Networking

Firmware updates

Networking

Storage
Lenovo Open Cloud for Red Hat

Automation:
- Automated best practices deployment of Red Hat software atop Lenovo ThinkSystem
- Platform (Red Hat Hyperconverged Infrastructure for Virtualization, Red Hat OpenShift Container Platform)
- Tight integration between hardware and software
- Lenovo xClarity provider to Cloudforms
- Ansible Tower automated workflows for Day1/Day2

Reference Architecture:
- Highly available & prescribed/tuned Red Hat OpenStack deployments, both control and data planes (SR-IOV, OVS-DPDK)

https://www.lenovopress.com
The Edge Computing opportunity

- 800% increase in the number of apps deployed at the edge. 1
  IDC

By 2025 more than 50% of enterprise-managed data will be created and processed outside the data center or cloud. 2

Gartner

2 Gartner: Predicts 2022: The Distributed Enterprise Drives Computing to the Edge October 2021
Edge computing challenges

**Environmental**
- Power
- Cooling
- Space
- Location

**Management**
- System
- Application
- Data

**Application**
- Development
- Delivery
- Manageability
- Suitability
- Sustainability

**Connectivity**
- IoT Device
- Endpoint
- System
- Datacenter
- Cloud

**Security**
- Device
- Data
- Application

**Infrastructure**
- Containers
- Kubernetes
- Virtualization
- HCI

**Logistics**
- Shipping
- Deployment
- Man-in-a-van
The Edge Computing value chain

You

Have

Business Problem

Needs

Solution

Edge SW

Edge Runtime SW

Gets deployed

• Large amounts of raw, localized data
• High data transit costs
• Fast response time is needed
Data-center vs Edge deployments: similar but not the same

**Data-center**
- Massive scale
- Concentrated in single locations
- Straight-forward deployment
- SREs on site and on call – fixed SLAs
- LCM best-practices exist

**Edge**
- Exponential scale
- Geographically distributed
- Complex deployment
- Divide and conquer approach to field support - variable SLAs
- LCM approaches are nascent
How to deploy?

- Factory
  - Factory pre-load
  - Staging setup
  - On-site manual setup
  - On-site automated setup
  - Remote automated setup

- Staging
  - OS Factory pre-load
  - Staging deployment

- Edge location
  - Post-ship OS customization & deployment
  - On-Site troubleshooting
  - On-Site Manual deployment
  - On-Site Automated deployment
We choose to focus on the best possible deployment options

Factory ships servers without customizations
Staging environment is skipped completely
Cloud Platform SW gets installed while servers are on site

No special logistics needed

The activity is triggered and managed remotely, from a central location
Internet connectivity is required
Remote automated setup

HQ work

- Deployment planning
- Deployment strategy & plan

On-site

- Ship HW to site
- Unbox, Rack and Stack
- Server Activation & Registration

Data onboarded in LOC-A DCIM/IPAM

LOC-A:
- Updates firmware
- Deploys cluster
- Expands cluster
- Updates DCIM/IPAM

Job done! Cluster up & running

Unique Lenovo feature
Get results faster with Lenovo Open Cloud Automation

You Have Business Problem

Needs

Solution

Needs

Edge SW

• Large amounts of raw, localized data
• High data transit costs
• Fast response time is needed
Edge Computing deployment – climbing the mountain

Need for Edge Computing is identified

Architecture is identified

Lab PoC is completed

Commercial Bid is completed

Live PoC is completed

Production rollout completed

You are here!
Edge Computing – The journey is long and the climb steep

- Need for Edge Computing is identified
- Lab PoC is completed
- Live PoC is completed
- Production rollout completed

You are here!

Incubation and PoC → Deploy → Maintain, expand, secure, patch → Retire
Edge Computing – The journey is long and the climb steep

- Need for Edge Computing is identified
- Lab PoC is completed
- Production rollout completed
- Firmwared update
- Major Platform update
- Firmwared update
- Minor Platform update
- Platform refresh
- Live PoC is completed
- Deploy
- Maintain, expand, secure, patch
- Retire

Lenovo Open Cloud Automation handles the entire lifecycle of your Edge infrastructure!
Call to Action

Ad hoc discount for you

Tell us about your Edge deployment challenges

Contact Lenovo to see how Lenovo Open Cloud Automation can help


-locautomation@lenovo.com
Connect

Thank you

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