

RED HAT FORUMS

Lenovo e Red Hat

Soluzioni hardware e software integrate per un mondo aperto e connesso

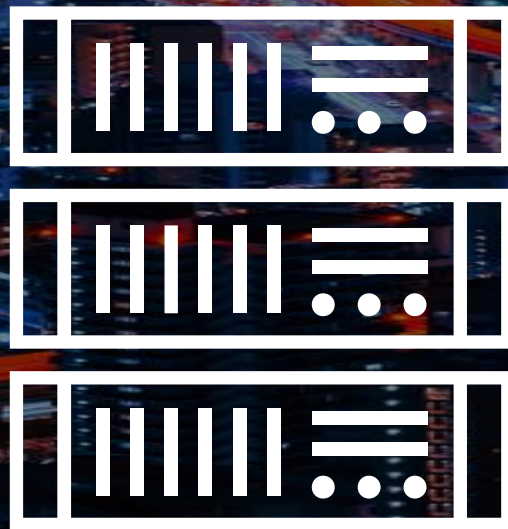
Roberta Marchini

Lenovo DataCenter Group Technical Sales Manager

Milano - 3 Dicembre 2019



Smart IoT



Smart Infrastructure



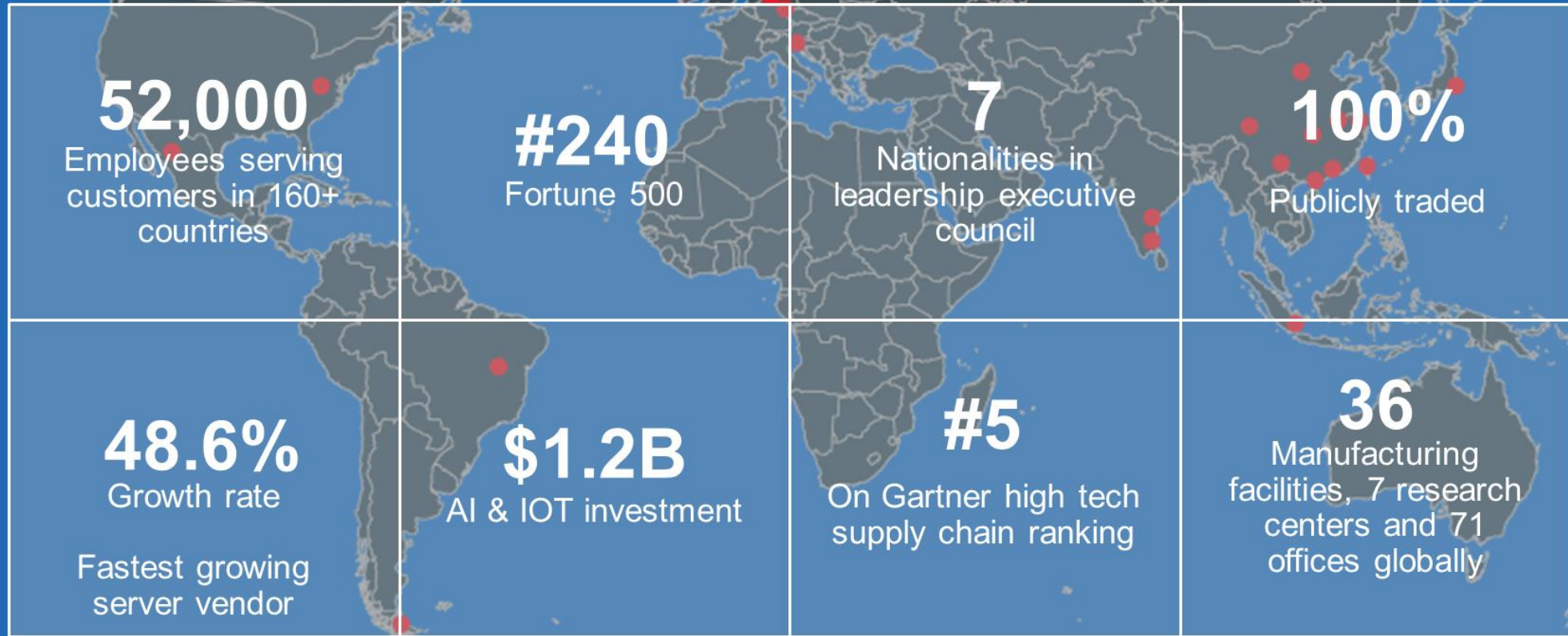
Smart Vertical

The background of the slide features a dark, blurred image of server racks in a data center. Several red labels with the word "Lenovo" in white are visible on the racks. Overlaid on the right side of the image is a decorative pattern of orange and blue dots of varying sizes, arranged in a way that suggests movement or data flow.

Data Center Group Vision

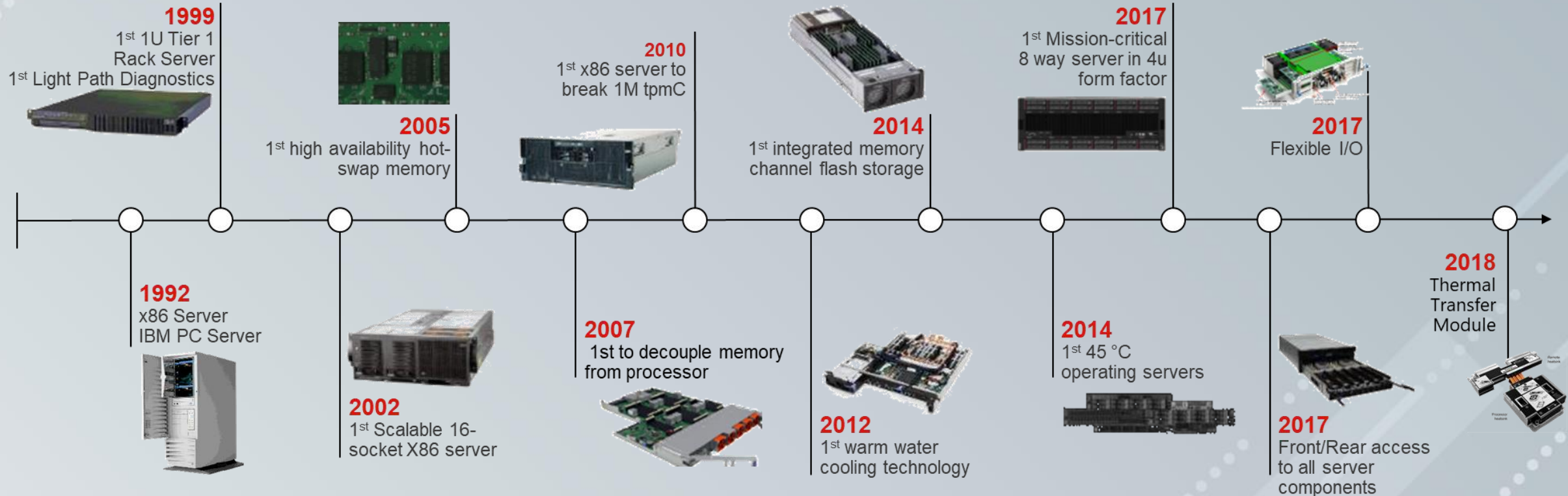
Be the most trusted data center partner – empowering customers' **Intelligent Transformation** and solving humanity's greatest challenges.

A global technology leader



DCG's 26 years of innovation

A history dedicated to continuous increases on performance, agility, and reliability



Red Hat

Lenovo



#RedHatOSD



Lenovo's innovation continues

Dedicated to continuous advancements in performance, agility, and reliability for the data center

ThinkSystem

ThinkAgile

1st Of all vendors in number of World Records

1st In Supercomputing in the world

1st Deployment of Azure Stack in the world

1st To have VMware vSAN ready nodes with Intel Optane SSD DC

1st Mission-critical 8 way server in 4u form factor with SR950

1st Warm water cooled Intel Scalable Xeon supercomputer

1st Full integration with Nutanix Prism

1st To power on Intel Optane DC Persistent Memory

ThinkSystem

Server, Storage, & Networking Solutions
for the future-defined data center

ThinkAgile

Next generation IT for
software-defined infrastructure



Hybrid Cloud

Finding clarity among the clouds

Lenovo

Everyday cloud challenges

Digital transformation

Optimise budgets

Cloud alternatives

Run legacy

Lower costs

Innovation



And things are moving fast

5G

5th Industrial Revolution

IoT

Customer Experience

Legislation

Security

AI

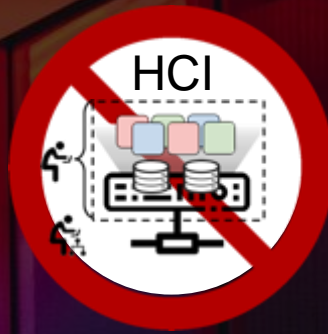
You can't afford to be left behind

The vision is clear, but the right answer isn't.
Because cloud is complex, and it's tough to make it happen.

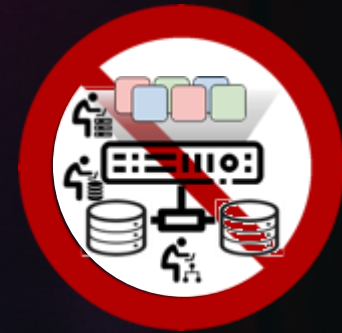
This is not cloud



Not a Place



Not HCI



Not virtualization

So what is cloud?



IT Delivery & Consumption Model

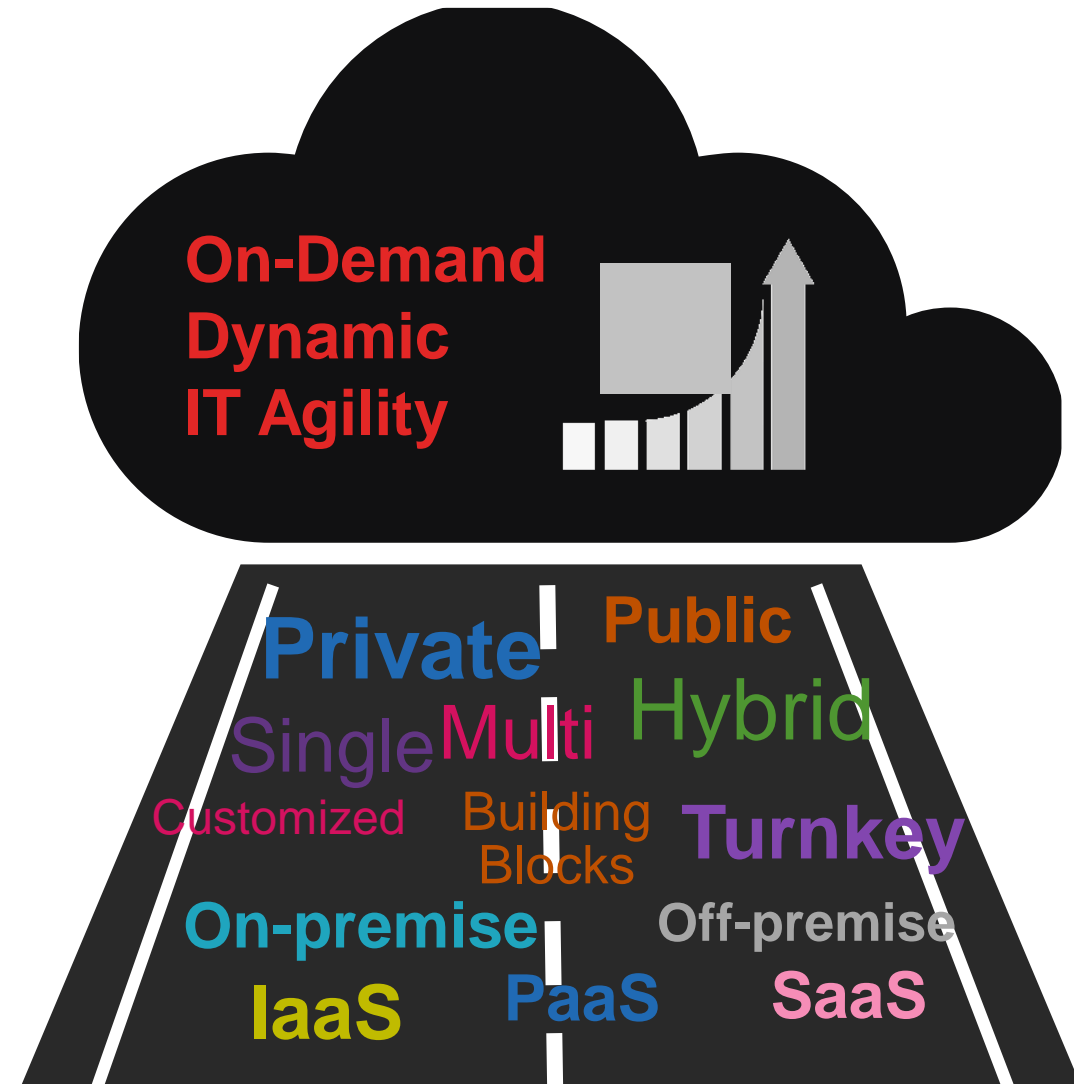
to provide infrastructure resources,
applications and services
on-demand or by *subscription*



IT Operating Model

that can easily adapt to
meet changing application
and service requirements

Every cloud is different



Lenovo's smarter approach to cloud

1. **Develop a robust cloud strategy**
2. **Select the right technology and partnerships**
3. **Assist/Consult and deployment of infrastructure**
4. **Support ongoing management of resources**

Stronger together Lenovo & Red Hat

Red Hat and Lenovo

- Global Resell Agreement
- Engineered Solutions
- New Innovations
- Corporate Commitments to Open Source
- Executive Alignment

Global Resell Agreement

- Global Resell Agreement
- Lenovo sells both OEM and Reseller SKUs
- Level 1 and 2 support from either Lenovo or Red Hat
- All Geos are covered

Engineered Solutions

- OpenStack Reference Architectures
- OpenShift Reference Architectures
- RedHat OpenShift using Lenovo ThinkAgile HX Series Reference Architectures
- Telco NFV Reference Architectures
 - Validated, tested design and configuration documents
 - Step-by-step deployment guides with scripts

Create a Private Cloud Solution with Lenovo & Red Hat

- Reference Architecture includes:
 - Nova, Swift, Glance, Keystone, Horizon, Neutron, Cinder, Ceilometer, Heat, Trove, Ironi Sahara
 - Integration with Ironi for bare metal automated deployment
- Hardware Includes:
 - 2U ThinkSystem SR650
 - Lenovo 10Gbps switches
- Lenovo is Single point of support for Hardware and Red Hat Software

<https://lenovopress.com/lp0762.pdf>



Create a Container Solution with Lenovo & Red Hat

- Provides overview of application containers
- Container orchestration technologies (Docker and Kubernetes)
- Describes DevOps, Continuous Integration and Continuous Delivery
- Provides examples for Openshift Container Platform

<http://lenovopress.com/lp0968.pdf>



Reference Architecture: Red Hat OpenShift Container Platform on Lenovo ThinkSystem Servers

Last update: 22 April 2019
Version 1.2


Provides overview of
application containers using
Lenovo ThinkSystem Servers

Describes container
orchestration technologies
including Docker and
Kubernetes

Describes DevOps and
Continuous Integration and
Continuous Delivery

Provides examples for typical
and Intel Select configurations

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[Click here to check for updates](#)

Engineered Solutions

- DevOps based on OpenShift
 - Customer Success story from Lenovo IT dept using OpenShift
 - Reference Design document for easy installation

CUSTOMER CASE STUDY

LENOVO ACHIEVES DIGITAL TRANSFORMATION WITH RED HAT OPENSIFT CONTAINER PLATFORM

Lenovo

SOFTWARE AND SERVICES
Red Hat® OpenShift Container Platform

HARDWARE
IBM x86/x64 2000 series for Lenovo S...

REFERENCE ARCHITECTURE
Intel® Builders
Intel® Xeon® Processors

Deploying Red Hat® OpenShift® Container Platform 3.5 on Lenovo™ System x3550 M5 Rack Servers

redhat.

EXECUTIVE SUMMARY

The term "cloud computing" is often associated with virtual machines, but many emerging and rapidly growing cloud technologies now make use of containerization. Containers can now be used as an alternative to OS-level virtualization to run multiple isolated applications on a single host with a much smaller footprint than virtual machines require. Container-based virtualization offers many benefits when compared to traditional virtualization technologies, and containers are perceived as an even more portable and faster way to deploy services on cloud infrastructures.

While containers themselves provide many benefits, they are not easily manageable in large environments. That's why many container orchestration tools have increased in momentum and gained popularity. Each orchestration tool is different, however, and should be chosen individually for specific purposes.

This reference architecture (RA) will show you how to prepare, provision, deploy, and manage a Red Hat OpenShift Container Platform 3.5-based private cloud environment. The intended audience for this RA is system administrators or system architects. Some experience with Docker® and OpenShift technologies might be helpful, but is not required.

INTEL, LENOVO, RED HAT, AND OPENSIFT

OpenShift Container Platform 3.5 by Red Hat is built around a core of application containers powered by Docker, with orchestration and management provided by Kubernetes, on a foundation of Red Hat® Enterprise Linux® Atomic Host. It provides many enterprise-ready features, like enhanced security features, multitenancy, simplified application deployment, and continuous integration/continuous deployment tools. With Lenovo® servers and technologies, provisioning and managing the OpenShift Container Platform 3.5 infrastructure becomes practically effortless and produces a resilient solution.

This document describes the system architecture for the OpenShift platform based on Lenovo® System x3550 M5 servers and network switches. These servers are powered by the Intel® Xeon® processor E5-2600 v4 product family, which provides more than 20 percent more cores than the Intel Xeon processor E5-2600 v4 product family, supports faster memory, and includes technologies for accelerating specific workloads. This document provides detail of the hardware requirements to support various OpenShift node roles and the corresponding configuration of the systems. It also describes the network architecture and details for the switch configurations. The hardware bill of materials for all required components to assemble the OpenShift cluster is provided, in addition to the rack-level design and power configuration. The automation logic for deploying the hardware infrastructure in preparation for the OpenShift implementation is also described.

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Red Hat

Lenovo

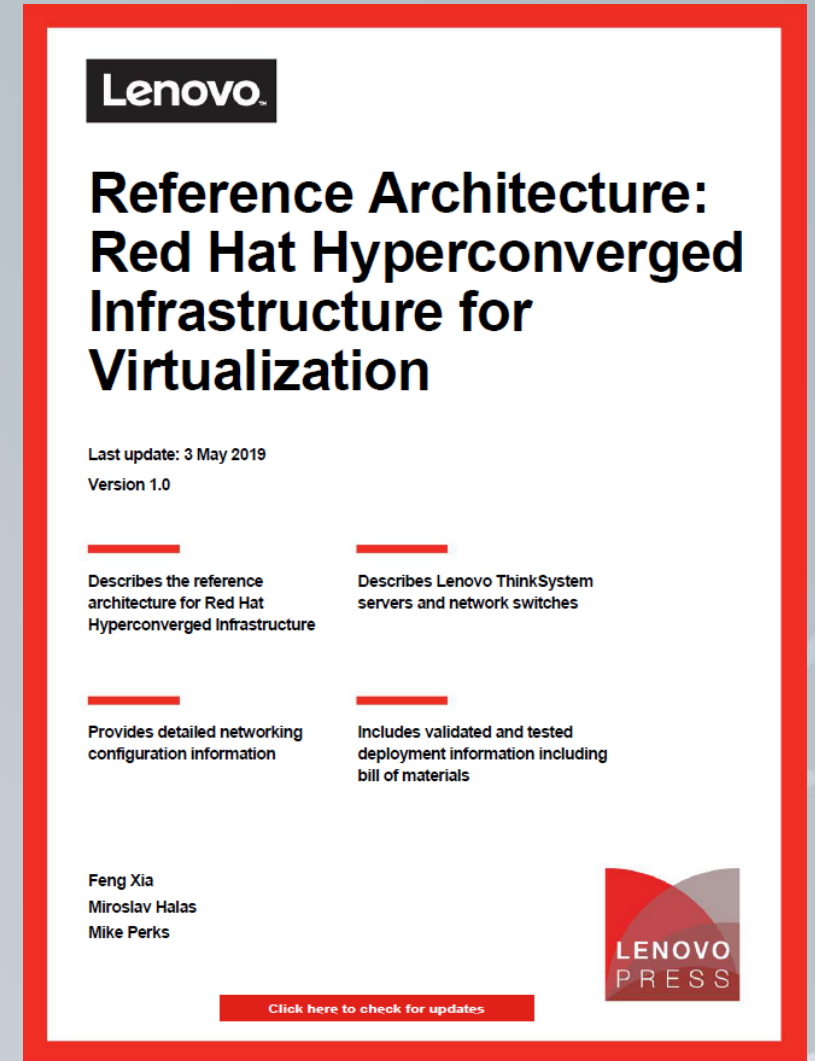
Engineered Solutions – HCI/SDS

- Red Hat Hyperconverged Infrastructure for Virtualization Reference Architectures
- Red Hat Ceph Storage Reference Architectures

Create an HCI Solution with Lenovo & Red Hat

- Describes the reference architecture for Red Hat Hyperconverged Infrastructure
- Provides detailed networking configuration information
- Describes Lenovo ThinkSystem servers and network switches
- Includes validated and tested deployment information including bill of materials
- Lenovo is Single point of support for Hardware and Red Hat Software


<http://lenovopress.com/lp1148.pdf>



Create a SDS Solution with Lenovo & Red Hat

- Describes the reference architecture for storage using Red Hat Ceph Storage
- Provides performance options for the storage solution
- Describes Lenovo ThinkSystem servers, networking, and storage management software
- Includes validated and tested deployment and sizing guide
- Lenovo is Single point of support for Hardware and Red Hat Software

<http://lenovopress.com/lp1147.pdf>



Reference Architecture: Red Hat Ceph Storage

Last update: 2 May 2019
Version 1.0


Describes the reference architecture for storage using Red Hat Ceph Storage

Describes Lenovo ThinkSystem servers, networking, and storage management software

Provides performance options for the storage solution

Includes validated and tested deployment and sizing guide

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New Innovations

Lenovo™

Strategic Initiatives

SAP Data Hub

- Lenovo Intelligent Insights; RH certified

Open Cloud for Telco

- Validated for Red Hat vCO program
- NFV use case for Telco

DevOps with OpenShift

- Engineered Solutions with Ref. Architectures

Oil and Gas Solution

- Joint solution brief, sales events

ThinkAgile CP

- Embedded OEM with RHEL and RHV

IoT/Edge Development Project

- CTO led engagement

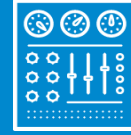


Red Hat

Lenovo

CloudForms - An Evolutionary Path to Hybrid

RED HAT®
CLOUDFORMS



Service
Management



Compliance &
Governance



Efficiency
& Optimization



CONTAINERS

Red Hat® OpenShift Container Platform



VIRTUALIZATION

VMware®

Microsoft® Hyper-V

Red Hat Virtualization



PRIVATE CLOUD

Red Hat Openstack® Platform



PUBLIC CLOUD

Amazon® Web Services

Microsoft Azure

Google® Cloud Platform

SOFTWARE DEFINED NETWORKING



Red Hat

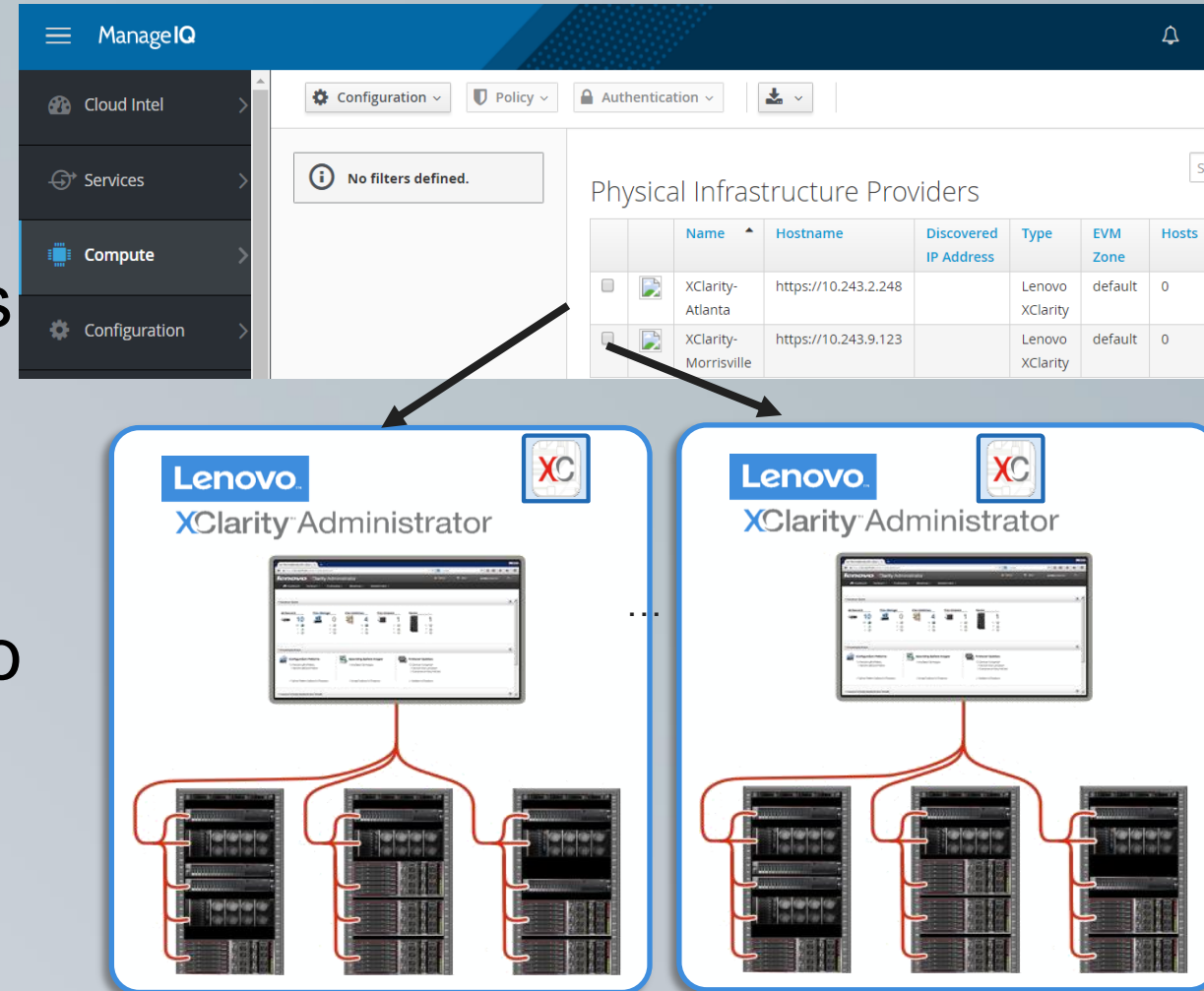
Lenovo



#RedHatOSD

Hybrid Cloud Management

- First OEM with integrated physical provider in CloudForms (version 4.6)
- Visibility of physical assets via CloudForms
- XClarity Provider embedded into CloudForms



"This release also introduces Lenovo XClarity as the first physical infrastructure provider, enabling CloudForms to go beyond managing hybrid virtualized and private cloud environments to managing hybrid infrastructures. The new Lenovo XClarity provider enables CloudForms to discover and manage physical compute infrastructure alongside virtual and private-cloud through a single pane of glass."

XClarity Integrator for Red Hat CloudForms

Adding a Physical Server Inventory View to Red Hat CloudForms

- Vital product data
- Include network adapters and port configuration detail

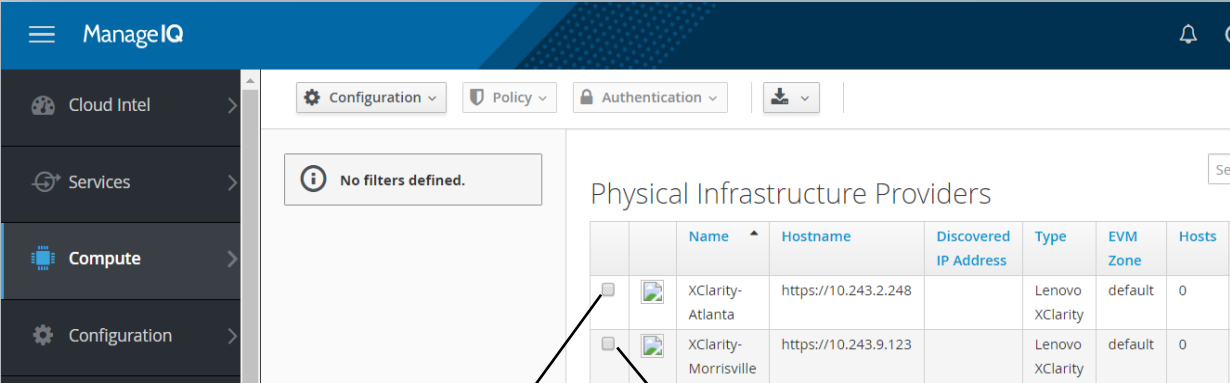
Base firmware and network adapter firmware

Server to host to VM relationships

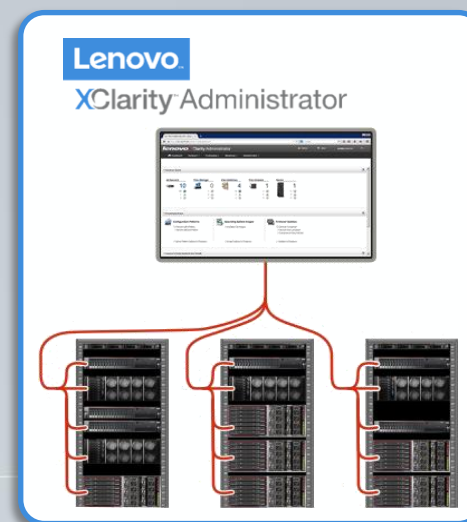
Physical server information

- Power operations
- Location LED operations
- Server to host relationships
- Event collection

Integrated into CloudForms (No Download required)



	Name	Hostname	Discovered IP Address	Type	EVM Zone	Hosts
	XClarity-Atlanta	https://10.243.2.248		Lenovo XClarity	default	0
	XClarity-Morrisville	https://10.243.9.123		Lenovo XClarity	default	0



...



Red Hat

Lenovo



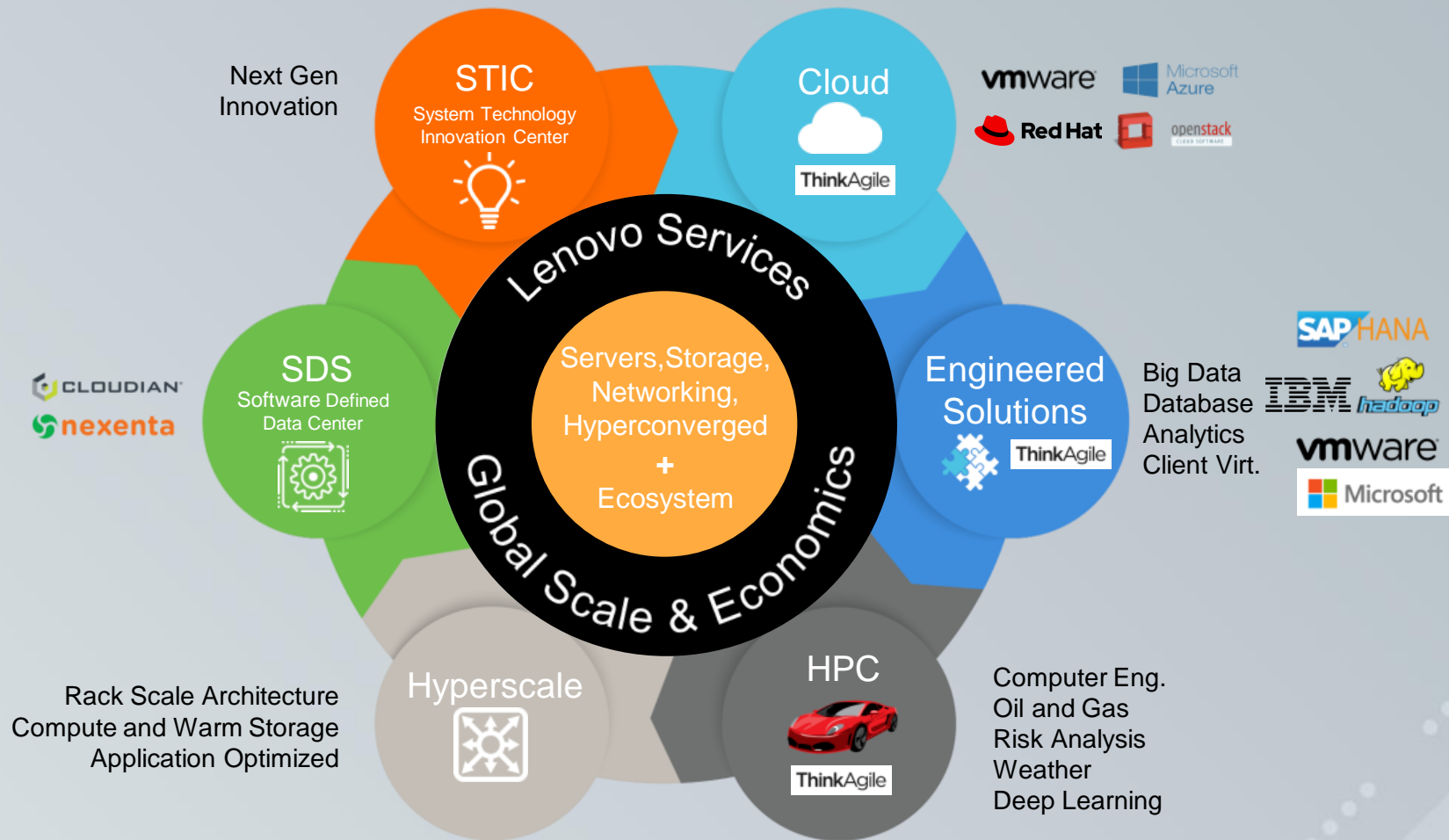
#RedHatOSD

Commitment to Open Communities



* Including System x results prior to System x acquisition by Lenovo in 2014

Bringing it all together: Lenovo 360



RED HAT FORUMS

THANK YOU



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