DELL Technologies

Specification Sheet

Dell Cloud Platform for Red Hat OpenShift

Dell Cloud Platform for Red Hat OpenShift empowers organizations to unlock innovation with a consistent Kubernetes experience across their IT environments, utilizing Red Hat OpenShift. Through extensive integrations and automations, Dell Cloud Platform allows IT organizations to simplify application modernization and accelerate DevOps.

It is the first solution to offer seamless integration of the infrastructure presented directly in the OpenShift Web Console. Cluster administrators can manage the entire system from the same console they would use to manage the applications and services running in OpenShift.

The platform streamlines OpenShift operations by providing consistent management and operations, while reducing cost, complexity, and eliminating the overhead of a hypervisor by running OpenShift directly on bare metal. This solution decreases the time it takes to deploy the cluster by up to 90%[1] while minimizing attack surfaces and simplifying the process of keeping the cluster up to date.

Collaboratively engineered by Dell and Red Hat to optimize the OpenShift experience

Key Features of Dell Cloud Platform for Red Hat OpenShift

- Intelligently designed Dell MC nodes offer:
  - Initial deployment automation, full-stack lifecycle management, and ongoing infrastructure operations through the Dell Cloud Platform Foundation Software
  - Flexible configurations for varying cloud-native application performance, capacity, or location requirements
  - Cluster scalability from a minimum of four to thousands of nodes
- Dell Cloud Platform Foundation Software integrates with the OpenShift Web Console, leveraging familiar interface that provides a simple, consistent, and centralized mechanism for operating all aspects of your OpenShift cluster.
- The Dell Container Storage Integration (CSI) allows for seamless access to the Dell Storage to support stateful containers and virtual machines.
- Dell Cloud Platform creates a trusted way to handle infrastructure and call home events, create service requests and deliver remote support for troubleshooting.
- Dell ProDeploy and Dell ProSupport services deliver professional onsite deployment and single point-of-contact technical support.

Flexible Storage Options for multiple use cases and deployment scenarios

Dell Cloud Platform for Red Hat OpenShift supports multiple types of storage to give the greatest number of features with the greatest amount of flexibility:

- Required Storage – the solution requires the use of one of the approved Required storage platforms that provides block services and is where the Dell Cloud Foundation Software resides.
- Supplemental Storage – any storage that is in addition to the required storage, and can provide a combination of block, file, and/or object storage.

Storage Options

Storage Platform	Storage Type	Required (Select 1)	Supplemental
Dell PowerFlex	Block, File (when using optional file nodes)	X	X
Dell PowerStore	Block, File	X	X
Red Hat OpenShift Data Foundation	Block, File, Object	X	X
Dell ObjectScale*	Object		X
Dell PowerScale	File, Object		X
Dell PowerMax	Block, File		X
Dell UnityXT	Block, File		X

*No CSM, S3 Only

MC-760 Compute Nodes

CPU Configuration	Single Socket	Dual Socket
Chassis Configurations	24 x 2.5” SAS Chassis (Compute Nodes) 24 x 2.5” NVMe Chassis (Compute Nodes with Drives)	
Processors	Up to two dual socket Intel Sapphire Rapids 4th Generation EP Processors (Silver/Gold/Platinum options)	
Memory	64 GB to 8 TB DDR5 (Up to 16 x DDR5 RDIMMs 4800 MT/s) (8 or 16 DIMM optimal Population)	128 GB to 8 TB DDR5 (Up to 32 x DDR5 RDIMMs 4800 MT/s) (16 or 32 DIMM optimal Population)
Storage controller	Internal HBA 355i 12Gbps SAS HBA Controller (NON-RAID)	
Storage - OS Boot	BOSS N1 with dual hot-plug M.2 NVMe 960GB in RAID1	
Min/Max Raw Storage RI = Read Intensive MU = Mixed Use WI = Write Intensive	Min: 1 x 1.6 TB = 1.6 TB Max: 24 x 15.36 TB = 368.64 TB - Options for Enterprise/Data Center NVMe - RI >= 1.92 TB - MU >= 1.6 TB	
Network cards	- Add-in-Card (required): 1-2 - Broadcom: 57414 dual port 10/25GbE SFP28 - NVIDIA: ConnectX-6 LX dual port 10/25GbE SFP28 - Mellanox: ConnectX-6 DX dual port 100GbE QSFP56 - OCP NIC 3.0 Card (optional) - Broadcom: 57414 dual port 10/25GbE SFP28 - Mellanox: ConnectX-6 LX dual port 10/25 GbE SFP28 - Integrated LOM: - 2 x 1 GbE Base-T Broadcom 5720 (used for factory imaging only, not supported for customer use cases)	
GPU DW = Double Wide SW = Single Wide	GPU capable: up to 6 x SW GPU or 2 x DW GPU (varies based on riser config) - NVIDIA Ampere A2 SW, 60W, 16GB Passive - NVIDIA Ampere A16 DW, 250W, 64GB Passive - NVIDIA Hopper H100 DW, 350W, 80GB Passive - NVIDIA Lovelace L4 SW, 72W, 24GB Passive - NVIDIA Lovelace L40 DW, 300W, 48GB Passive - NVIDIA Lovelace L40S DW, 350W, 48GB Passive	
Operating System	Red Hat CoreOS	
Out of Band Management	Integrated Dell Remote Access Controller (iDRAC) 9 Enterprise or Datacenter IPMI 2.0 compliant	
Integrations	Dell APEX Cloud Platform Foundation Software Dell APEX Cloud Platform extension in Red Hat OpenShift Web Console	
Services	ProDeploy, ProDeploy Plus, ProSupport, ProSupport Plus, optional Dell Infrastructure and Consulting services Call-routing, phone home, remote support, and automated case creation supported with Secure Connect Gateway	
Security	Trusted Platform Module 2.0	
Power Supplies	Dual, Hot-plug, Redundant Power Supply (1+1), 1100/1400/1800/2400/2800 W	
Form Factor	2U Rack	

MC-660 Compute Nodes

CPU Configuration	Single Socket	Dual Socket
Chassis Configurations	10 x 2.5” SAS Chassis (Compute Nodes) 10 x 2.5” NVMe Chassis (Compute Nodes with Drives)	
Processors	Intel Xeon Sapphire Rapids 4th Generation EP Processors (Silver/Gold/Platinum options) Intel Xeon Emerald Rapids 5th Generation EP Processors (Silver/Gold/Platinum options)	
Memory	64 GB to 4 TB DDR5 (Up to 16 x DDR5 RDIMMs 4800 MT/s) (8 or 16 DIMM optimal Population) 64 GB to 2 TB DDR5 (Up to 16 x DDR5 RDIMMs 5600 MT/s) (8 or 16 DIMM optimal Population)	128 GB to 8 TB DDR5 (Up to 32 x DDR5 RDIMMs 4800 MT/s) (16 or 32 DIMM optimal Population) 128 GB to 4 TB DDR5 (Up to 32 x DDR5 RDIMMs 5600 MT/s) (16 or 32 DIMM optimal Population)
Storage controller	Internal HBA 355i 12Gbps NVMe HBA Controller (NON-RAID)	
Storage - OS Boot	BOSS N1 with dual hot-plug M.2 NVMe 960GB in RAID1	
Min/Max Raw Storage RI = Read Intensive MU = Mixed Use	Min: 1 x 1.6 TB = 1.6 TB Max: 10 x 15.36 TB = 153.6 TB - Options for Enterprise/Data Center NVMe - RI >= 1.92 TB - MU >= 1.6 TB	

Network cards	- Add-in-Card (required): 1-2
	  - Broadcom: 57414 dual port 10/25GbE SFP28
	  - NVIDIA: ConnectX-6 LX dual port 10/25GbE SFP28
	  - Mellanox: ConnectX-6 DX dual port 100GbE QSFP56
	- OCP NIC 3.0 Card (optional)
	  - Broadcom: 57414 dual port 10/25GbE SFP28
	  - Mellanox: ConnectX-6 LX dual port 10/25 GbE SFP28
	- Integrated LOM:
	  - 2 x 1 GbE Base-T Broadcom 5720 (used for factory imaging only, not supported for customer use cases)	

GPU DW = Double Wide SW = Single Wide	GPU capable: up to 2 x SW GPU (varies based on riser config) - NVIDIA Ampere A2 SW, PCIe, 60W, 16GB Passive (limit 1 per node) - NVIDIA Lovelace L4 SW, PCIe, 72W, 24GB Passive	
Operating System	Red Hat CoreOS	
Out of Band Management	Integrated Dell Remote Access Controller (iDRAC) 9 Enterprise or Datacenter IPMI 2.0 compliant	
Integrations	Dell APEX Cloud Platform Foundation Software Dell APEX Cloud Platform extension in Red Hat OpenShift Web Console	
Services	ProDeploy, ProDeploy Plus, ProSupport, ProSupport Plus, optional Dell Infrastructure and Consulting services Call-routing, phone home, remote support, and automated case creation supported with Secure Connect Gateway	
Security	Trusted Platform Module 2.0	
Power Supplies	Dual, Hot-plug, Redundant Power Supply (1+1), 1100/1400/1800 W	
Form Factor	1U Rack	

Additional Resources:

- Dell Partner Page on Red Hat
  https://www.redhat.com/dell
- Dell PowerFlex Storage Specification Sheet
  https://www.delltechnologies.com/asset/en-us/products/storage/technical-support/powerflex-specification-sheet.pdf
- Dell PowerStore Storage Specification Sheet
  https://www.delltechnologies.com/asset/en-us/products/storage/technical-support/dell-powerstore-gen2-spec-sheet.pdf

[1] Compared to a manual deployment of OpenShift. Based on internal analysis, August 2023.

Learn more about
Dell Cloud Platform for Red Hat OpenShift

Contact a Dell Expert
1-866-438-622