

VMware Cloud on Dell EMC

The speed and flexibility of public cloud with the security and control of on-premises infrastructure delivered as a fully managed data center-as-a-service solution

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At-a-glance

VMware Cloud on Dell EMC is cloud infrastructure installed on-premises in your core and edge data centers and consumed as a cloud service.

Advantages

- Cloud-like ease-of-use for on-premises workloads enables your IT Operations to focus on value-added services.
- Unparalleled consistency between on-premises and public cloud environments allows your IT Security and Developers to focus efforts on one common environment.
- Ultimate peace-of-mind with Dell Technologies as your proven and trusted enterprise solution provider.
- Familiar VMware Cloud tools on Dell EMC VxRail hyperconverged infrastructure delivers a best-of-breed enterprise solution.

Enterprise use of the public cloud is burgeoning, and for good reason—the speed, agility and simplicity of public cloud are undeniable. Still, many organizations continue to invest in their on-premises infrastructure to better manage workloads with regulatory requirements, low latency needs or critical functions. Until now, investing in multiple clouds was the only way to attain public cloud benefits while also satisfying key on-premises workload requirements. However, this approach has also introduced considerable organizational complexities ...that have slowed business innovation.

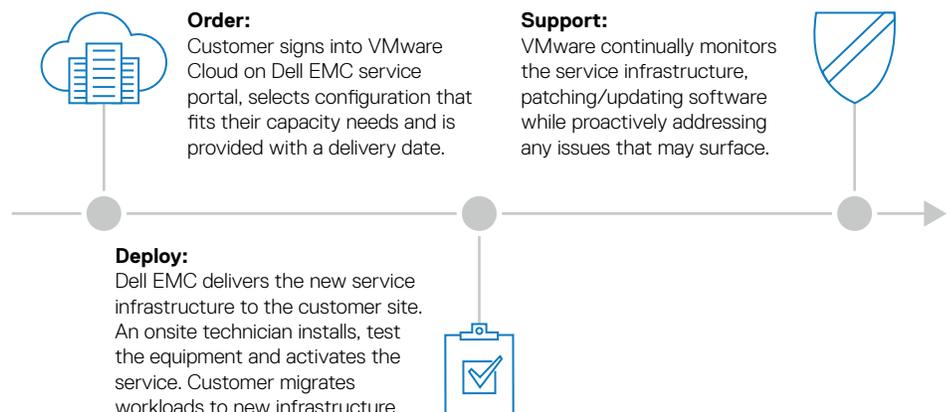
Operational simplicity that empowers your organization to focus on business innovation and differentiation.

VMware Cloud on Dell EMC—the first DCaaS offering from Dell Technologies—solves organizational complexities in two key ways. Specifically, it:

- **Delivers cloud-like ease-of-use** to your on-premises workloads; and
- **Provides unparalleled consistency** between your on-premises and public cloud environments.

This new construct removes the friction of day-to-day tasks and frees your entire organization to focus on driving business value.

The simplicity of VMware Cloud on Dell EMC is evident from the moment you place your online order. This is, at least in part, because the infrastructure is delivered, installed, maintained and supported by Dell Technologies. Additionally, VMware’s hybrid cloud control plane enables you to provision and monitor resources as you already do with existing VMware on-premises infrastructure. In short, the service feels just like other cloud services you use.



Furthermore, the consistency VMware Cloud on Dell EMC creates between your public cloud and on-premises infrastructure reduces overhead for IT Operations, IT Security, Developers and CIOs/CTOs, enabling these roles to instead focus on accelerating the business.



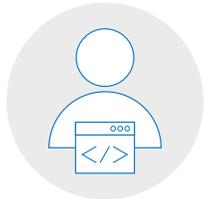
IT Operations

can focus on strategic initiatives rather than routine maintenance services.



IT Security

can apply security policies uniformly, instead of tracking workloads across multiple environments.



Developers

can accelerate application development by building for just one environment.



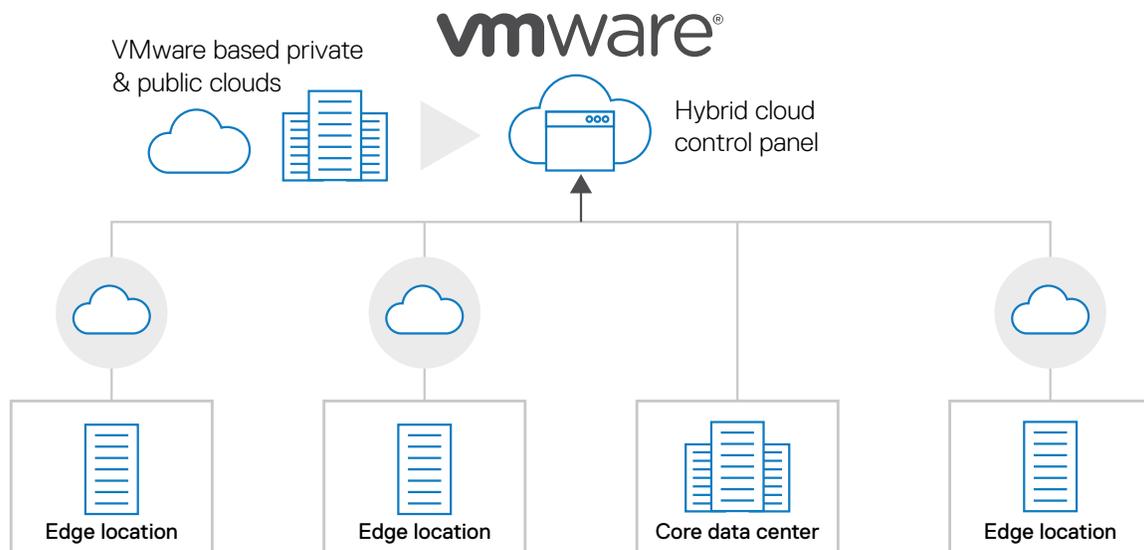
CIO and CTOs

can reduce complexities of managing operations on different cloud environments.

VMware Cloud on Dell EMC seamlessly extends public cloud benefits to workloads in your core data center and edge locations.

VMware Cloud on Dell EMC seamlessly extends public cloud benefits to workloads in your core data center and edge locations alike. This extension is significant because requirements for integrating security, networking and policy management at the edge are just as stringent as those in your data center—if not more so. Yet, the VMware hybrid cloud control pane makes it as easy to configure and monitor edge workloads at scale as it is with data center workloads.

This offers distinct advantages not only for industries like Banking, Healthcare, and Oil & Gas, but other industries will benefit as well, including retail, grocery and manufacturing, to name just a few. The fact is VMware Cloud on Dell EMC delivers value to any edge location where business is transacted and there is a need for compute, storage or networking capabilities.



Dell Technologies offers unmatched peace-of-mind as a proven and trusted enterprise solution provider.

What makes VMware Cloud on Dell EMC truly unique is Dell EMC's trusted experience in building heterogeneous data centers for thousands of customers, taking thousands of variables into account and making these environments work perfectly. This is amplified by the proven enterprise level support at scale that both Dell EMC and VMware have delivered for decades. Collectively, Dell EMC and VMware can reliably provide a fully integrated and functional Day 1 experience as well as a highly responsive, dependable support for Day 2 and beyond.

Foundational to this peace-of-mind is that VMware Cloud on Dell EMC is built on VxRail—VMware’s industry standard compute, storage, and networking software integrated with Dell EMC’s enterprise-grade HCI infrastructure. As a result, VMware Cloud on Dell EMC provides resilient architecture with enterprise-grade security built-in. For instance, VMware Cloud on Dell EMC comes with VMware NSX, bringing networking and security capabilities to endpoints in different locations and microsegmentation capabilities to provide granular control over traffic between application workloads.

Hosts

Instance type	G1s.small	M1s.medium	M1d.medium ¹	X1d.xLarge ¹	M1d.xLarge ¹
Chassis	1U1N (VxRail E560F)	1U1N (VxRail E560F)	1U1N (VxRail E560 NVMe)	1U1N (VxRail E560F)	1U1N (VxRail E560F)
CPU cores	24	24	48 (2x24)	48 (2x24)	56 (2x28)
vCPUs ²	48	48	96	96	112
CPU frequency	3.1 Ghz All Core Turbo	3.1 GHz all core turbo	3.1 GHz All Core Turbo	2.9 GHz All Core Turbo	2.2 GHz All Core Turbo
RAM	256 GB	384 GB	768 GB	1536 GB	768 GB
Cache SSD (NVMe)	800GB SSD SAS	1.6 TB SSD SAS	3.2 TB NVMe	3.2 TB NVMe	3.2 TB NVMe
All-flash storage	11.5 TB SSD	23 TB SSD	23 TB NVMe	61 TB SSD	61 TB SSD
Disk groups	1	2	2	2	2
Power supplies	Redundant x 750W 100-240v	Redundant x 750W 100-240v	Redundant x 1100W 200-240v	Redundant x 1100W 200-240V	Redundant x1100W 200-240V

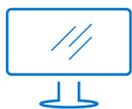
Rack infrastructure

Rack type	R1	R2
Usable instances per rack type	Minimum: 3 Maximum: 5	Single phase: Min 3/Max 12 Three phase: Min 3/Max 26
Standby Host ³ per rack type	1	1
Rack	24U (600mm Wide x 1070mm Deep)	42U (600mm Wide x 1200mm Deep)
Network fabric	1 x management switch 2 x 10Gbps host network interfaces Redundant top-of-rack switches -960Gb (full duplex) non-blocking, cut-through switching fabric	1 x management switch 2 x 25Gbps Host Network Interfaces Redundant Top of Rack Switches 4Tbps (full duplex) non-blocking switching capacity
SD-WAN	Redundant VMware SD-WAN	Redundant VMware SD-WAN
Customer facing uplinks	-Data: 1 or 2 x 1Gbps or 10Gbps Per ToR (Optical) -SD-WAN: 1Gbps copper or optical per VMware SD-WAN	Data: 1-4 x 1/10/25Gb Per ToR (Optical) SD-WAN: 1Gbps copper or optical per VMware SD-WAN
PDU	Redundant Smart PDUs	Redundant Smart PDUs
UPS/battery	SmartUPS & Battery w/ 30-minute hold time	N/A
Power connections	1xNEMA L5-30 (100-120v) 1xNEMA L6-30 (200-240v)	4xNEMA L6-30 (200-240v) Single Phase 2xIEC 309 60A (200-240v) Three Phase
Ambient operating temperature	10°C to 30°C 50°F to 86°F	10°C to 30°C 50°F to 86°F
Storage temperature range	-40°C to +65°C -40°F to +149°F	-40°C to +65°C -40°F to +149°F
Operating relative humidity	10% to 80% (non-condensing)	10% to 80% (non-condensing)
Operating altitude with no deratings	3048m (approx. 10,000 ft)	3048m (approx. 10,000 ft)

Power and weight

Power	Base Rack (switches + RAS node)	Active node power per instance Type	Total power
Maximum Estimated Input power in (Watts)	R1: 815W R2: 1152W	G1s.small: 316W M1s.medium: 348W M1d.medium: 605W X1d.xLarge: 614W M1d.xLarge: 614W	Base rack power + number of active nodes x power per instance type. Example: R2 w/ 10 x M1d.medium nodes = 1152 + 10 x 605W = 7,202W
Input current (Amps)-max ⁴	110v Source: 7A (only in R1) 220v Source: 7A	110v (only in R1): G1s.small: 2.9A M1s.medium: 3.2A M1d.medium: 5.6A 220v: G1s.small: 1.4A M1s.medium: 1.6A M1d.medium: 2.8A X1d.xLarge: 2.8A M1d.xLarge: 2.8A	Base rack current + number of active nodes x current per instance type. Example: R2 (220v source) w/ 10 x M1d.medium nodes = 7A + 10 x 2.8A = 35A
Maximum heat Output (BTU/hr)	R1: 2779 BTU/hr R2: 5292 BTU/hr	G1s.small: 1077 BTU/hr M1s.medium: 1187 BTU/hr M1d.medium: 2063 BTU/hr X1d.xLarge: 2093 BTU/hr M1d.xLarge: 2093 BTU/h	Base rack BTU/hr + number of active nodes x BTU/hr per instance type. Example: R2 w/ 10 x M1d.medium nodes = 5292 + 10 x 2063 = 25,922 BTU/hr
Weight (Pounds)	R1: (w/ common equipment): 688 Pounds R2: (w/ common equipment): 778 Pounds	G1s.small: 91 Pounds M1s.medium: 91 Pounds M1d.medium: 91 Pounds X1d.xLarge: 48 Pounds M1d.xLarge: 48 Pounds	R1 or R2 Weight + Number of Nodes x Node Type Weight. Example: R2 w/ 10 x M1d.medium nodes = 778 + 10 x 91 = 1688 Pounds

1. This instance type cannot be used in the 'R1' half rack due to the power draw of this instance type when used in the required 3 node minimum configuration
2. vCPU is based upon 2 hyper-threads per core. All hosts are based upon Cascade Lake Processors operating at all core turbo frequency of 3.1 GHz. The hosts support the Intel Advanced Vector Extensions 512 (AVX-512) instruction set, offering up to 2x the FLOPS per core of a Broadwell Processor. In addition to AVX-512, there is support for the new Neural Network Instructions (AVX-512 VNNI) which will speed up machine learning operations like convolution and inference.
3. "Standby Host" is an additional spare host used for lifecycle management.
4. Max estimated power consumption leverages simulated transactional workloads running on the specified Dell servers. Go to dell.com/calc for more information.



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