Detailed Walk Through of the VMware Cloud on Dell EMC Service

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The Key Role of On-Premises Infrastructure

Data Sovereignty

- Regulatory and privacy requirements
- Sensitive data located on-premises
- Custom security standards
- Need to prove compliance to auditors

Workload / Data Proximity

- Low data latency requirements
- Workloads with local data processing
- Data Center workloads tightly integrated with backend systems

Command and Control

- Keep control over critical workloads
- Leverage existing IT investments
- Maximize value of existing talent and processes
The Dell EMC and VMware Partnership

- VMware is the industry leader for compute, storage, and networking infrastructure software in the data center.

- VMware infrastructure runs over 25 Million workloads on Dell EMC solutions today.

- Dell EMC VxRail is the only fully integrated, pre-configured, and pre-tested VMware hyper-converged appliance on the market.

- Dell EMC Enterprise Class services enable an organization for end-to-end data protection and enterprise integration.
VMware Cloud on Dell EMC

Cloud infrastructure delivered as-a-service on-premises

Co-engineered and delivered by Dell Technologies; ongoing service fully managed by VMware

VMware SDDC including compute, storage and networking

Built on VxRail – Dell EMC’s enterprise-grade cloud platform

Hybrid control plane to provision and monitor resources

Monthly subscription model
How does VMware Cloud on Dell EMC work?
Cloud Consumption Model Delivered as-a-service

**HW + SW**
- VMware branded service
- VMware takes first level support call from customer
- Operated by VMware cloud SREs

**Services**
- Dell EMC supply chain
- HW + SW rack & Stack
- Shipping and on-site activation

**Support**
- VMware support
- Dell EMC support with 4-hour on-site break fix service

**All inclusive Service - HW, SW, Support, and Managed Services**

- ✓ VMware branded service
- ✓ Jointly operated with the HW partner
- ✓ VMware is the "single point of contact"

- ✓ Freedom from asset ownership
- ✓ Subscription based pricing
- ✓ Choice of payment terms
Advantages of VMware Cloud on Dell EMC

**Cloud Advantages**

- **Increased Agility**
  - Self service provisioning and elasticity of resources

- **Simplified Operations**
  - Offload management and automated version mgmt

- **Accelerated Innovation**
  - Increased developer velocity and access cloud services

**On Premises Advantages**

- **Mitigate Risks**
  - Comply with data residency and regulatory requirements

- **Controlled Costs**
  - Predictable cost model and resource transparancy

- **Increased Performance**
  - Low data latency and high-performance networking
Key VMC on Dell EMC Use Cases

Advanced VDI Workloads
- Powerful Infrastructure for VDI
- Delivers Enterprise-class security
- Provides optimal workspace density

Data center modernization
- Streamlined operations
- Switch from CapEx to OpEx
- Hardware refresh

Data latency and sovereignty
- Low data latency requirements
- Data sovereignty requirements
- Data governance and security

Application modernization
- Development agility
- Kubernetes and modern applications
- Traditional application developments
What’s New In Our Latest Release

- Increased node counts allowing greater workload capacity per rack
- New HW instance for increased workload density to grow and scale with your needs
- Monthly ‘cloud like’ billing allowing payment by credit card or invoice
- Expansive Cloud Storage Services Via Faction

Feb 2021
Increased Node Density Per Rack

- The December release increases ‘scale up’ capacity.
- Support for up to 26 nodes per rack*
- Optimized capacity to run more advanced workloads per square foot of data center space
- Increase adds additional scale and flexibility to clustering configurations
- Density to scale to typical Enterprise rack server buildouts

* Support for up to 26 nodes per R2 rack when configured for Three-Phase power source
### VMware Cloud on Dell EMC HW Node Types

<table>
<thead>
<tr>
<th>Instance type</th>
<th>G1s.small</th>
<th>M1s.medium</th>
<th>M1d.medium</th>
<th>X1d.xLarge</th>
<th>M1d.xLarge</th>
</tr>
</thead>
<tbody>
<tr>
<td>Chassis Form Factor</td>
<td>VxRail E560F 1U1N</td>
<td>VxRail E560F 1U1N</td>
<td>VxRail E560N 1U1N</td>
<td>VxRail E560F 1U1N</td>
<td>VxRail E560F 1U1N</td>
</tr>
<tr>
<td>CPU sockets and cores</td>
<td>1 x 24</td>
<td>1 x 24</td>
<td>2 x 24</td>
<td>2 x 24</td>
<td>2 x 28</td>
</tr>
<tr>
<td>vCPU</td>
<td>48 (24 Cores)</td>
<td>48 (24 Cores)</td>
<td>96 (48 Cores)</td>
<td>96 (48 Cores)</td>
<td>112 (56 Cores)</td>
</tr>
<tr>
<td>CPU frequency</td>
<td>3.1 GHz All Core Turbo</td>
<td>3.1 GHz All Core Turbo</td>
<td>3.1 GHz All Core Turbo</td>
<td>2.9 GHz All Core Turbo</td>
<td>2.2 GHz All Core Turbo</td>
</tr>
<tr>
<td>RAM</td>
<td>256GB</td>
<td>384GB</td>
<td>768GB</td>
<td>1536GB</td>
<td>768GB</td>
</tr>
<tr>
<td>vSAN Disk Groups</td>
<td>1 (800GB SAS)</td>
<td>2 (800GB SAS)</td>
<td>2 (1.6TB NVMe)</td>
<td>2 (1.6TB NVMe)</td>
<td>2 (1.6TB NVMe)</td>
</tr>
<tr>
<td>All flash capacity storage*</td>
<td>11.5TB (SATA)</td>
<td>23TB (SATA)</td>
<td>23TB (NVMe)</td>
<td>61TB (SATA)</td>
<td>61TB (SATA)</td>
</tr>
<tr>
<td>Networking</td>
<td>2 x 10Gb</td>
<td>2 x 10Gb</td>
<td>2 x 25Gb</td>
<td>2 x 25Gb</td>
<td>2 x 25Gb</td>
</tr>
</tbody>
</table>

* Significant capacity storage needs can be addressed through VMware Partnership with Faction storage services.
VMware Cloud on Dell EMC - Flexible Payment Options

• Customers have the choice of paying for VMware Cloud on Dell EMC in several different ways:

  • **Monthly Billing**: Customers can pay monthly for VMware Cloud on Dell EMC. Payment though credit card or via monthly invoicing are offered.

  • **Up Front Purchase**: Customer who prefer can pay up front for VMware Cloud on Dell EMC can prepurchase SPP tokens to pay for the service over the chosen term.
Faction Storage Services for VMware Cloud on Dell EMC

• Faction and VMware Cloud on Dell EMC have partnered to address the expansive storage needs of some modern workloads

• Faction Cloud Storage Services expand the storage capacity of VMware Cloud on Dell EMC

• Flexibly provides added capacity to support storage-hungry applications such as databases and data warehousing

• Storage consumption-based billing that scales with business needs.


Note: Faction storage services are only available today for VMware Cloud on Dell EMC when deployed at an Equinix Colocation facility.
Integrated Backup and Disaster Recovery

- Certified to deliver data protection and disaster recovery with Dell EMC PowerProtect Cyber Recovery solution and Veeam.

- Ensure all data is managed efficiently with unified secondary storage strategy, with global deduplication and integrated with existing data center processes.

- Ensure immutable security against modern malware threats, including Ransomware and other data-targeted efforts.

✓ Realtime Backup
✓ Disaster Recovery
✓ Data De-duplication
✓ Regulatory Compliance
Optimized for Advanced and Distributed VDI Workloads

- Delivers powerful infrastructure for virtual desktops and applications to power remote workspaces.
- Certified support for VMware Horizon to deliver enterprise class security and compliance with organizational requirements.
- High performance for strong workspace density and end user experience for the most demanding applications.

- Secure On-Premises VDI
- 100% Certified Horizon Support
- Enterprise Class

VMware Cloud on Dell EMC
Automatic Expansion of Capability as Customer Needs Grow

- Expansion up to 26 hosts within the Data Center deployment via the cloud portal.

- Automatic migration of workloads via VMware HCX under technical preview. VMware HCX enables customers to migrate hundreds of live workloads at once, with no downtime, to dramatically reduce time to deployment and simplify operational complexity.

- Sophisticated sizing tool for current and future capacity planning needs.
Where Should You Deploy VMware Cloud on Dell EMC?

**Data Center**

- Maintain on-premises security of data and proximity to users
- Avoid CapEx infrastructure investment
- Divert management cost to growth – VMware fully manages hardware

**Edge**

- Bring Enterprise-class compute power to the network edge.
- Allows data to be processed near where it is generated or requested
- Fully managed nature of service avoids costly localized IT service / support.
VMware Cloud on Dell EMC – On Premises Data Centers
Refresh, Expand, Consolidate, Relocate

VMware Cloud on Dell EMC ideal for:

• **Refresh / Modernization**
  - Infrastructure built around Dell EMC VxRail
  - Delivered infrastructure is Hyper Converged
  - Latest Intel SP Processor technology
  - Shift from CapEx to Opex

• **Expansion**
  - Expand Data Center resources: No CapEx or additional management responsibility
  - Allows gradual expansion of nodes or slow refresh

• **Consolidation / Budget Reduction**
  - Migrate workloads to modern, OpEx expensed service

• **Relocation**
  - VMware is partnered with several leading Co-location providers – Deploy this service in a ‘CoLo’ facility that offers premium connectivity services
## VMware Cloud on Dell EMC - Edge Compute Use Cases

<table>
<thead>
<tr>
<th>Edge Use Cases</th>
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<tbody>
<tr>
<td>Geographically diverse manufacturing environments with Compute intensive needs</td>
</tr>
<tr>
<td>Profession-diverse private practice offices with application compute and storage needs</td>
</tr>
<tr>
<td>Healthcare facilities (hospitals, clinics) with patient-oriented compute / storage hungry application needs</td>
</tr>
<tr>
<td>‘Brick and Mortar’ retail storefronts running product tracking and/or customer-oriented digital promotion or services applications</td>
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### Manufacturing Edge
- Geographically diverse environments with compute intensive needs.

### Practice Offices
- Profession-diverse private practice offices with application compute and storage needs.

### Healthcare
- Healthcare facilities (hospitals, clinics) with patient-oriented compute / storage hungry application needs.

### Big Box Retailers
- ‘Brick and Mortar’ retail storefronts running product tracking and/or customer-oriented digital promotion or services applications.
VMware Cloud on Dell EMC – Manufacturing Edge
Providing Compute Power for Intelligent, Real-Time Factory Automation

**VMware Cloud on Dell EMC: Ideal for Remote Factory Automation**

- Compute power necessary to run next-generation Industrial automation
- Compute and storage to leverage IoT in the factory environment for instrumentation and/or production process tracking of assemblies
- Ability to make real-time manufacturing / process changes and decisions and track production
- Ability to optimize and automate supply chain process
- Fully managed, proactively monitored infrastructure including support and break-fix service
VMware Cloud on Dell EMC – Practice Offices
Provides Compute Power for Today’s Digitally-Rich Private Practices

VMware Cloud on Dell EMC: Power for Today’s Private Practices
- Private Dentistry, medical, legal, Counselling, Civil Engineering businesses
- Compute needs for billing, patient or customer records, record compliance, imaging, Engineering applications
- Often a franchise or chain business
- IT needs traditionally met by a third-party IT service and support provider - so accustomed to full IT support
- Typically running business-specific applications not seen in corporate IT.
VMware Cloud on Dell EMC – Healthcare
Ensuring *Always On* Health Care Access

**VMware Cloud on Dell EMC: Perfect for Healthcare Edge Compute**

- Power to allow application access patient records, imaging, telemetry from a single device anywhere and anytime.
- Allows recording of patient telemetry records to meet regulatory or health organization policies and provide enhanced patient record depth.
- Allows use of IoT for tracking equipment, expendable patient medicals supplies, and simplifying supply chain and patient billing processes.
- Ability for remote or satellite clinics continue to fully serve patients in the event communications link is lost.
VMware Cloud on Dell EMC – Edge Compute for Big Box Retailers
Digitally Improving Customer Shopping Experience

VMware Cloud on Dell EMC: Ideal for Compute-Hungry Retailers

• Provides edge infrastructure as a fully managed service – eliminating need for 3rd party IT services
• Built on Enterprise-scale Dell EMC VxRail architecture
• Resources to host Inventory Tracking (IoT), supply chain control and other automated functions
• Provide the infrastructure to host a digitally rich, visually enhanced mobile-involved shopping experience for customers. This includes:
  • Store Navigation to locate products
  • On demand product availability, information, reviews, comparisons, automated warranty registration.
  • Digitalized product visual advertisement and promotions
  • Proximity sensed personalized shopper experiences
VMware Cloud on Dell EMC Experience Walkthrough – 3 Steps

Order  Deploy  Support

Note: Screens shown are for illustrative purposes and may not reflect updates to screens and products shown.
The IT Architect can add new VMware Cloud locations to their architecture.
The IT Architect can specify the location of where they wish to locate the VMware Cloud on Dell EMC infrastructure.
The IT Architect selects the instance type, number of instances, and cluster configuration.
Multiple Infrastructure Rack Options

R1 Rack

- Best suited for small satellite data center or edge applications.
- UPS included for locations that lack power backup or experience unreliable power.
- Compact: fits in small areas.
- Power Support: 1xNEMA L5-30 (100-120VAC) or 1xNEMA L6-30 (200-240VAC)

R2 Rack

- Best suited for Enterprise–scale deployments.
- Will accommodate up to 26 primary + 1 standby instances.
- PDU power inputs consistent with Enterprise data center power connectivity.
- Power Support: 4x NEMA L6-30 (Single Phase 200-240VAC) or 2x IEC 309 60A (Three Phase 200-240VAC)

R1 Half Rack

- UPS A & B
- Redundant VeloCloud SD-WAN Appliances (Remote Management Access)
- Management Plane Switch
- Redundant Top of Rack (ToR) Server
- Aggregation Switches
- ‘Dark’ Node for Expansion
- Configured Number of VxRail Instances (Appliances)

R2 Full Rack

- Uninterruptible Power Supply (R1 Only)
- Redundant Smart Power Distribution Units (in rear). R1: Floor power. R2 Floor/Ceiling Power
- Rack Enclosure: R1: 24 RU, R2: 42 RU

Note: For the latest specifications and options – please see the VMware Cloud on Dell Data Sheet
The IT Architect selects the instance type, number of instances, and cluster configuration.
New M1d.xLarge Instance (Host) Type

New M1d.xLarge Workload and Storage Optimized Host Type:

- Ideal for storage hungry workloads at scale
- Specs:
  - Dual Intel ‘Cascade Lake’ SP CPUs
  - 2.2 GHz All Core Turbo
  - 2 x 28 Core (112 vCPUs))
  - 768 GB RAM
  - 61 TB (Raw ) SATA Flash Storage
  - 2x 1.6 TB NVMe vSAN groups
  - 2x 25 Gbps NIC
  - E560F 1U VxRail Chassis Form Factor
The Network Administrator can configure the network requirements for the SDDC.
The IT Architect selects the subscription term (1 or 3 years) and confirms pre-requisite information entered.
Subscription Options for VMware Cloud on Dell EMC

1 Year and 3 Year Term Subscription Options

**1 Year Commitment**
- 1 Year term subscription commitment by customer
- Includes VMware VCF software and fully managed Dell EMC VxRail Infrastructure
- Pricing reflects a lower price than pilot, however, is more expensive than 3 Year Term

**3 Year Commitment**
- 3 Year term subscription commitment by customer
- Includes VMware VCF software and fully managed Dell EMC VxRail Infrastructure
- Pricing reflects a ~33% discount over the shorter 1 Year term
### Simple Pricing Model: VMware Cloud on Dell EMC Subscription

#### Consistent Pricing - No Hidden Costs – No CapEx Expense

**Node / Instance Cost Component**

- Monthly Node base cost determined by type of Node and term: 1 or 3 years
- Node cost includes:
  - VxRail Node
  - VMware SDDC software for that node
  - Share of rack infrastructure cost
  - Share of fully managed support and service

**Subscription Term Component**

- 1-Year or 3-Year Subscription Terms
- 3-Year term commitment pricing generally is 33% less than 1-Year

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<table>
<thead>
<tr>
<th>Monthly Node Cost</th>
<th>Number of Nodes</th>
<th>Total Monthly Subscription Cost</th>
</tr>
</thead>
<tbody>
<tr>
<td>×</td>
<td>×</td>
<td></td>
</tr>
<tr>
<td>12 (1 Year Subscription)</td>
<td>or 36 (3 Year Subscription)</td>
<td></td>
</tr>
</tbody>
</table>

**White Glove Customer Experience**

- 1-Year or 3-Year Subscription Terms
- 3-Year term commitment pricing generally is 33% less than 1-Year

**Total monthly Subscription cost – includes:**

- Infrastructure hardware
- SDDC Software and updates
- Security Updates
- 24x7 Fully managed service/support including required onsite visits
The IT Architect confirms the order
The IT Architect completes the order and receives an anticipated delivery date.
The IT Architect is informed that the order has been processed.
The IT Architect is informed that the equipment is shipped.
VMware Cloud on Dell Experience Walkthrough

Order

Deploy

Support
Service Infrastructure Build and Deployment

- After VMware Cloud on Dell EMC order is placed:
  - Customer Infrastructure is built in the Dell EMC Order Fulfillment Center
  - It is pre-loaded with VMware SDDC Software
  - Customer network configuration is pre-configured
  - System is run through a battery of tests and burnt in
  - System is packaged for delivery and shipped to customer site

- A Dell EMC Technician arrives on site to install Infrastructure
  - Rack is uncrated and moved into position
  - Power and networking connections are made
  - Testing of the network connections and system are completed
  - Infrastructure is formally handed off to customer and becomes ‘live’
  - VMware begins management of the infrastructure
  - Customer can begin migrating workloads to their new service infrastructure

There is no additional cost for deployment - Cost is included in subscription
The deployment technician arrives on site, installs the infrastructure rack, and turns the system over to the IT Architect after deployment tests.

The IT Architect receives the infrastructure and activates the system.
Once Activated, the IT Architect can start deploying workloads.
Using the same familiar vSphere interface, the IT Architect can setup the needed VMs and Containers.
The IT Architect can now activate HCX, allowing them to migrate VM’s to the new service infrastructure.
Using HCX migration, the IT Architect can easily migrate workloads to the new service infrastructure.
VMware Cloud on Dell EMC Experience Walkthrough

Order > Deploy > Support
Understanding the Hybrid Cloud Control Plane

Current State

Multiple Control Planes

- Compute
- Storage
- Networking

Hybrid Cloud Control Plane

- VMware Managed
- Full Transparency of Operations
- Single Pane of Glass

Cloud Connectivity

Compute | Storage | Networking
VMware Cloud on Dell EMC Cloud Service Portal (CSP)

- CSP provides a ‘single pane of glass’ console for ordering, workload management, and operations
- Provides an enhanced ordering process with help throughout the process
- Management and request screen have been redesigned to provide more status information and make it easier to communicate with support and scheduling technicians
- New resources section allows customers to learn more about attributes of the service, error condition, software configuration...etc
Leveraging the Hybrid Cloud Control Plane, the IT Architect can observe the health of the system.
The IT Architect can also see the status of service tickets being worked on by VMware managed services.
The IT Architect can enter the maintenance and update page – showing information on updates and patches requiring deployment and is able to schedule these actions as to not interfere with critical periods.
<table>
<thead>
<tr>
<th>Frequently Asked Questions</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>This offering includes physical infrastructure – Do I need to pay for this up front?</strong></td>
</tr>
<tr>
<td><strong>Which public cloud will my data and applications be hosted in when I sign up for VMware Cloud on Dell EMC?</strong></td>
</tr>
<tr>
<td><strong>What are the limits of what VMware is managing as part of this service?</strong></td>
</tr>
<tr>
<td><strong>What happens if I need to increase infrastructure capacity?</strong></td>
</tr>
</tbody>
</table>
Learn more about VMware Cloud on Dell EMC

Additional Resources are available

- VMware.com Product Page: Here
- VMware Cloud on Dell EMC Overview Video: Video
- VMware Cloud on Dell EMC Solution Brief: Brief
- VMware Cloud on Dell EMC Overview Deck: Deck
Thank You