

APEX Cloud Services with VMware Cloud

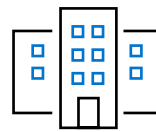
On-premises Infrastructure-as-a-Service that combines the ease of operations of public cloud with control, security, and performance of private cloud.



Simple and consistent operations across multi-cloud environments



Get up and running in as few as 14 days¹



Dell Technologies owned and managed



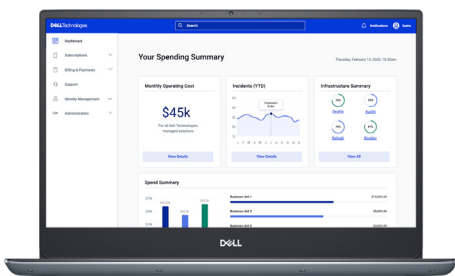
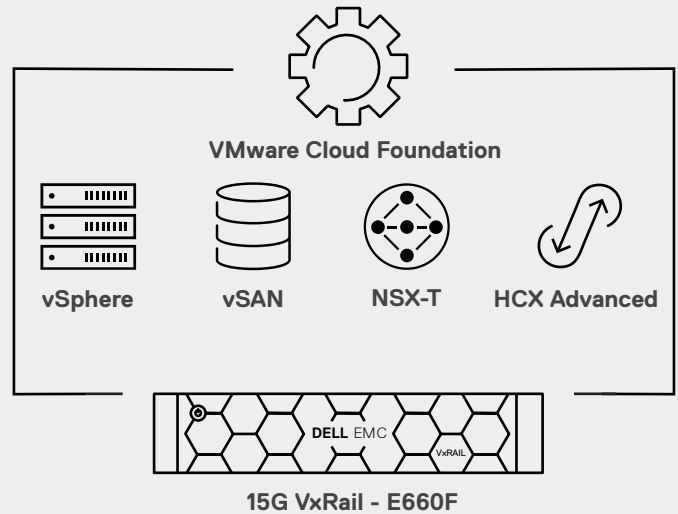
Built on infrastructure that delivers 99.9999% availability²

Scalable compute, storage, and networking resources

APEX Cloud Services with VMware Cloud delivers scalable compute, storage, and networking resources that can be deployed in your datacenter, co-location facility, and edge locations in as few as 14 days¹.

Available with predictable monthly pricing through 1- or 3-year term subscriptions.

- VMware Cloud: vSphere, vSAN, NSX-T, HCX, vRealize Log Insight
- Built on VxRail, Dell EMC's enterprise-grade cloud platform
- Dell Technologies APEX Console to provision and monitor resources



Your cloud experience in one place

The APEX Console, a self-serve web portal, puts all your cloud services in one place, allowing you to subscribe, operate, optimize, and grow.

- Integrated monitoring tools help streamline your operations with real-time actionable insights
- Give users what they need with access based on roles while retaining IT oversight

Instances designed for your VMware workloads

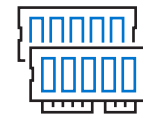
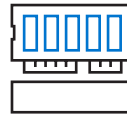
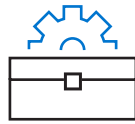
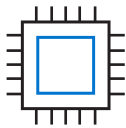
Instances are standardized combinations of compute and memory resources—defined by a fixed physical memory-to-core ratio—and powered by Dell EMC VxRail. They are optimized for your virtualized and containerized workload requirements, ranging from small (4GB/Core) to extra-large (32GB/Core) memory-to-CPU core ratios.

Instances are backed by VMware vSAN based shared storage using Enterprise Class, high performance All Flash drives. The All Flash storage includes high performance NVMe cache in two disk groups. You will have multiple storage capacity points to support your compute instances.

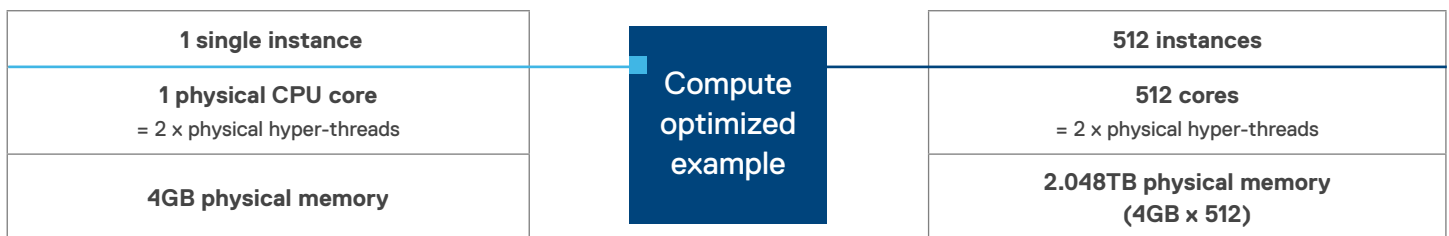
The physical cores are based on the latest 3rd Generation Intel® Xeon® Scalable Processors. Compute Optimized instances use

Platinum Series processors while General Purpose, Memory Optimized, and Large-Scale Memory Optimized instances use Gold series CPUs. Each CPU core has 2x hyper-threads (2x vCPU). Compute Optimized instances support 2.6Ghz base frequency and 3.3Ghz all core turbo frequency, while all other instance types support 2.0Ghz base frequency and 2.6Ghz all core turbo frequency.

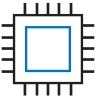
Example: If you want each of your VM or container instances to use one physical core and 16GB of physical memory for your workloads, you should select the Memory Optimized instances category. In addition, you have full flexibility to over-commit your physical core and assign more than 2 vCPUs per physical core, thereby achieving a much higher number of VMs per instance.



Instances type	Compute optimized	General purpose	Memory optimized	Large-scale memory optimized
Memory-to-core ratio	4_{GB}	8_{GB}	16_{GB}	32_{GB}
Description	Delivers high performance for running compute intensive workloads	Ideal for workloads using compute, memory, and storage resources in equal proportions	Delivers fast performance for workloads that process large data sets in memory, using a high memory-to-core ratio	Delivers fast performance using an extra high memory-to-core ratio for workloads that process large data sets in memory
Workload examples	<ul style="list-style-type: none"> Mainstream web servers Batch processing applications Network applications Engineering applications High performance computing (HPC) Media encoding servers Online gaming servers 	<ul style="list-style-type: none"> Low to medium traffic web server Small databases Development and test servers MapReduce applications Network and distributed file systems Ci/CD pipeline servers Unstructured data and NoSQL databases Log and data processing 	<ul style="list-style-type: none"> High performance relational databases (Oracle, Microsoft SQL, MySQL, MariaDB, PostgreSQL, SAP) Midsize in-memory databases (SAP/HANA) Data mining Web scale in-memory caches (Memcached) Enterprise Java applications 	<ul style="list-style-type: none"> High performance relational databases (Oracle, Microsoft SQL, MySQL, MariaDB, PostgreSQL, SAP) Midsize in-memory databases (SAP/HANA) Data mining Web scale in-memory caches (Memcached) Enterprise Java applications



Please note that actual memory-to-core ratio will be within 5% of the specification for the committed instance capacity, driven by CPU core and memory architecture.



Compute optimized

Processor:	3rd Generation Intel® Xeon® Scalable Processors – Platinum Series Each CPU core has 2x hyper-threads (2x vCPU)
Processor frequency (base/turbo):	2.6 / 3.3GHz
Disk groups and cache (per host):	2 / 2x1.6TB MU NVMe
Primary storage capacity: (per rack with All Flash storage)	Small: 12TB to 104TB Large: 69TB to 598TB
Network interface controllers (per host)	2 x 25Gb
Instance quantity: (Per rack. Ordered in multiples of 64 instances)	Minimum: 128 Maximum: 704 (single phase PDU – 30A) 1,600 (three phase PDU – 60A)



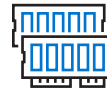
General purpose

Processor:	3rd Generation Intel® Xeon® Scalable Processors – Gold Series Each CPU core has 2x hyper-threads (2x vCPU)
Processor frequency (base/turbo):	2.0 / 2.6GHz
Disk groups and cache (per host):	2 / 2x1.6TB MU NVMe
Primary storage capacity: (per rack with All Flash storage)	Small: 12TB to 104TB Large: 69TB to 598TB
Network interface controllers (per host)	2 x 25Gb
Instance quantity: (Per rack. Ordered in multiples of 64 instances)	Minimum: 128 Maximum: 704 (single phase PDU – 30A) 1,600 (three phase PDU – 60A)



Memory optimized instances

Processor:	3rd Generation Intel® Xeon® Scalable Processors – Gold Series Each CPU core has 2x hyper-threads (2x vCPU)
Processor frequency (base/turbo):	<= 96 instances: 2.3 / 3.4GHz >= 128 instances: 2.0 / 2.6 GHz
Disk groups and cache (per host):	2 / 2x1.6TB MU NVMe
Primary storage capacity: (per rack with All Flash storage)	Small: 12TB to 104TB Large: 69TB to 598TB
Network interface controllers (per host)	2 x 25Gb
Instance quantity: (Per rack. Ordered in 64, 96, 128 - then in multiples of 64 instances)	Minimum: 64 Maximum: 704 (single phase PDU – 30A) 1,600 (three phase PDU – 60A)



Large-scale memory optimized

Processor:	3rd Generation Intel® Xeon® Scalable Processors – Gold Series Each CPU core has 2x hyper-threads (2x vCPU)
Processor frequency (base/turbo):	2.0 / 2.6GHz
Disk groups and cache (per host):	2 / 2x1.6TB MU NVMe
Primary storage capacity: (per rack with All Flash storage)	Small: 12TB to 104TB Large: 69TB to 598TB Extra large: 183TB to 1,586TB
Network interface controllers (per host)	2 x 25Gb
Instance quantity: (Per rack. Ordered in multiples of 64 instances)	Minimum: 128 Maximum: 704 (single phase PDU – 30A) 1,600 (three phase PDU – 60A)

Flexible vCPU/core ratios

Each CPU core has 2x hyper-threads (2x vCPU).

Administrators have full flexibility to over-commit physical cores, thereby assigning more than 2x vCPUs per physical core. This achieves a much higher number of VMs per instance.

High availability included

The service is designed for high availability. One extra node is provided for RAS per rack, but does not participate in the cluster unless there is a failure and is replacing a workload node.

For example, if you ordered 512 instances, you are guaranteed a minimum of 512 cores. If a node fails in that cluster, you will still have a minimum of 512 cores for your workloads, with little disruption.

Rack infrastructure

Rack	42U (600mm wide x 1,200mm deep)
Network 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
Customer facing uplinks	Data: 1-4 x 1/10/25Gb per ToR (optical) SD-WAN: 1Gbps copper or optical per VMware SD-WAN
Power connections: AMER	4xNEMA L6-30 (200-240v) single phase 4xNEMA L21-30 (200-240V) three phase
Power connections: EMEA	4 x IEC 309 32a single phase 4 x IEC 309 16A three phase
Ambient operating temperature	10°C to 30°C 50°F to 86°F
Storage temperature range	-40°C to +65°C -40°F to +149°F
Operating relative humidity	10% to 80% (non-condensing)
Operating altitude with no deratings	3,048m (approx. 10,000 ft)
Weight (with common equipment)	Max weight - single phase with 704 instances: 1,402 pounds (636kg) Max weight - three phase with 1,600 instances: 2,074 pounds (941kg)

1. Applies to select preconfigured solutions of Memory Optimized instance types only, contact your sales representative for details. Excludes orders over 704 instances for 1 phase racks or 1600 instances for 3 phase rack. Subject to customer acceptance of APEX terms, credit approval, site survey, and solution abstract must be completed before order is placed and no customization or deviation from the standard configuration is allowed. Product availability, shipping, holidays, and other factors may impact deployment time. Deployment includes delivery, standardized installation and hardware and software configuration. US, United Kingdom, France, and Germany only.

2. Based on VxRail field performance at the node level over 8 consecutive quarters. Actual results will vary.



Learn more about
APEX Cloud Services

delltechnologies.com/SimplifyMulticloud



Contact a Dell
Technologies Expert

delltechnologies.com/contact



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