

# Dell APEX Private Cloud

## Easily start your cloud journey or extend to the edge

Dell APEX Private Cloud delivers an on-premises cloud experience for VMware workloads in the data center and edge locations with scalable compute, storage, and networking resources. With a small footprint, APEX Private Cloud is ideal for getting started with a cloud model or expanding out to edge environments with limited space and resources. Start small and easily scale as your business needs grow, while having the ability to independently scale compute and storage with a compute-only option (no vSAN) for workloads with unique requirements.

APEX Private Cloud offers predictable monthly pricing available through 1- to 5-year term subscriptions—where hardware, software, and services to support deployment, rack integration, and asset recovery are included. Subscribe to nodes designed for your workloads through the Dell APEX Console and get your cloud infrastructure delivered and deployed to your data center or edge environment in as few as 28 days<sup>1</sup>. Enjoy simplified operations and built-in lifecycle automation capabilities with infrastructure owned and deployed by Dell.

Compute (vSphere)

Storage (vSAN optional)

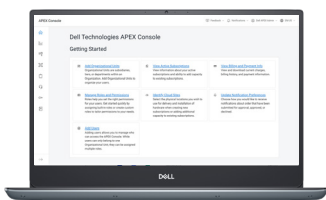


### Dell VxRail

Joint engineering between Dell and VMware leads to a seamless, curated, and optimized hyperconverged experience.

## Let Dell help you manage your infrastructure

| Management model                                                                                                                                                                                                                              | What Dell does                                                                                                                                                                                                                                            |
|-----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|-----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| <ul style="list-style-type: none"> <li>• Customer or partner managed; Dell owned</li> <li>• Monthly subscription with flexible terms</li> <li>• Single point of contact from order to decommission with a Customer Success Manager</li> </ul> | <ul style="list-style-type: none"> <li>• Proactive hardware monitoring</li> <li>• Troubleshooting/break-fix at customer site</li> <li>• Twice-a-year system maintenance</li> <li>• Monthly business reviews</li> <li>• Deploy and decommission</li> </ul> |



## Management is simple with the Dell APEX Console

The Dell APEX Console is your centralized platform for managing and orchestrating your multicloud journey.

- Choose service options based on the performance that best supports your desired outcomes
- Gain visibility over your cloud costs with proactive monitoring tools
- Empower your key stakeholders with role-based, personalized access

1. Deployment time is measured between order acceptance and activation. The 28-day deployment applies to single rack deployments of select Dell APEX Private Cloud pre-configured solutions and does not include customizations to the standard configuration or partner deployment. Deployment is subject to credit approval, acceptance of Dell APEX terms by required parties, deployment survey, availability of resources at the deployment facility, and a completed configuration workbook before order placement. Product availability, international holidays, and other factors can impact deployment. Time-to-value objectives and regional offer availability varies per region. Contact your sales representative for details.

## Nodes designed for your VMware workloads

Node types are standardized combinations of compute and memory resources—defined by a fixed physical memory-to-core ratio—and powered by Dell 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. Nodes are backed by VMware vSAN-based shared storage using Enterprise Class, high performance All Flash drives. All Flash storage includes high performance NVMe cache in two disk groups. You will have multiple storage capacity points to support your compute nodes.

The physical cores are based on the latest 3rd Generation Intel® Xeon® Scalable Processors using Silver, Gold, and Platinum Series. Each CPU core has 2x hyper-threads (2x vCPU). The processor base and core turbo frequencies depend on the node type, cores per node, processors per host, and compute performance tier chosen.

You can select the node density of the subscription with three configuration options (16, 32, 64 instances per cores) for Compute, General purpose, Memory optimized and Large scale optimized node types. This allows you to be more in control of the number of cores provided in each node quantity selection. For example, if you have an availability requirement for Failures to Tolerate (FTT)=2 with RAID6 (min of six hosts), you can choose the “16 cores per node” selection to ensure you get at least six hosts to meet your requirement without paying for unnecessary instances.

## 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.

## Boost performance with optional Graphic Processing Units (GPU)

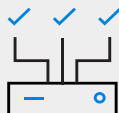
Add a GPU by selecting from 6 use cases to enable advanced workloads that include VDI, mainstream compute, video streaming, and AI training and inference. All GPU options can be added in quantities of 2, and all are based on PCIe Generation 4 connectivity. Nodes with GPUs will leverage NVIDIA models subject to their availability, based on your selected use case. If mentioned models are not available, a similar GPU suited for the same use case described will be used.

## Flexible options for data storage with independent scaling of resources

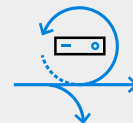
Compute-only vSphere clusters with no vSAN allow users to scale compute and storage independently based on your workload needs. This provides more flexibility to meet a wide range of workload requirements and freedom in how you choose to store data to best fit your business needs. The key use cases for the no vSAN option are:



Connect and utilize existing vSAN with HCI Mesh

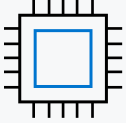
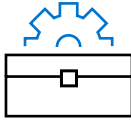
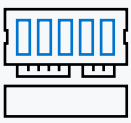
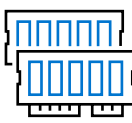


Connect with Dell storage arrays such as PowerFlex, PowerStore-T, PowerMax, or Unity XT



Refresh or transition infrastructure at your pace for different procurement cycles





## Node types and details

|                                                                                                                                                                                                                                                                                                                                |                                                                                                                                                                                                                                                                                       |                                                                                                                                                                                                                                                                                                                    |                                                                                                                                                                                                                                                                |
|--------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|---------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|--------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
|  <p><b>Compute optimized</b></p> <p>Delivers high performance for running compute intensive workloads</p>                                                                                                                                     |  <p><b>General purpose</b></p> <p>Includes multi-Instance GPU (MIG) to partition the GPU, allowing each fully isolated GPU instance with its own high-bandwidth memory, cache, and compute cores</p> |  <p><b>Memory optimized</b></p> <p>Built on NVIDIA Ampere architecture and PCIe Generation 4 (64 GB/s) to double the bandwidth of previous PCIe Generation 3</p>                                                                  |  <p><b>Large scale optimized</b></p> <p>Delivers fast performance using an extra high memory-to-core ratio for workloads that process large data sets in memory</p>         |
| <p><b>4GB memory/core</b></p>                                                                                                                                                                                                                                                                                                  | <p><b>8GB memory/core</b></p>                                                                                                                                                                                                                                                         | <p><b>16GB memory/core</b></p>                                                                                                                                                                                                                                                                                     | <p><b>32GB memory/core</b></p>                                                                                                                                                                                                                                 |
| <p><b>Use cases</b></p> <ul style="list-style-type: none"> <li>• Mainstream web servers</li> <li>• Batch processing applications</li> <li>• Network applications</li> <li>• Engineering applications</li> <li>• High performance computing (HPC)</li> <li>• Media encoding servers</li> <li>• Online gaming servers</li> </ul> | <p><b>Use cases</b></p> <ul style="list-style-type: none"> <li>• Low-medium traffic web server</li> <li>• Database application servers</li> <li>• Development and test servers</li> <li>• Unstructured data and NoSQL databases</li> <li>• Log and data processing</li> </ul>         | <p><b>Use cases</b></p> <ul style="list-style-type: none"> <li>• Relational databases (MySQL, MariaDB, PostgreSQL, etc.)</li> <li>• Large in-memory databases (SAP/HANA)</li> <li>• Data mining</li> <li>• Large web scale in-memory caches (Memcached)</li> <li>• Smaller enterprise Java applications</li> </ul> | <p><b>Use cases</b></p> <ul style="list-style-type: none"> <li>• High performance relational databases (Oracle, Microsoft SQL, MySQL, etc.)</li> <li>• Large in-memory databases (SAP/HANA)</li> <li>• Large web scale in-memory caches (Memcached)</li> </ul> |

## Optional GPU types and details

|                                                                                                               |                                                                                                                                                                       |                                                                                                                                                                               |
|---------------------------------------------------------------------------------------------------------------|-----------------------------------------------------------------------------------------------------------------------------------------------------------------------|-------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| <p><b>Use cases</b></p> <ul style="list-style-type: none"> <li>• VDI density optimized</li> </ul>             | <p><b>Use cases</b></p> <ul style="list-style-type: none"> <li>• General compute</li> <li>• AI inference optimized</li> </ul>                                         | <p><b>Use cases</b></p> <ul style="list-style-type: none"> <li>• VDI performance optimized</li> <li>• Video encoding/decoding</li> <li>• AI training and inference</li> </ul> |
| <p><b>Model</b></p> <p>NVIDIA A16 (or similar)</p>                                                            | <p><b>Model</b></p> <p>NVIDIA A30 (or similar)</p>                                                                                                                    | <p><b>Model</b></p> <p>NVIDIA A40 (or similar)</p>                                                                                                                            |
| <p>Built on NVIDIA Ampere architecture, providing double the user density compared to previous generation</p> | <p>Includes multi-Instance GPU (MIG) to partition the GPU, allowing each fully isolated GPU instance with its own high-bandwidth memory, cache, and compute cores</p> | <p>Built on NVIDIA Ampere architecture and PCIe Generation 4 (64 GB/s) to double the bandwidth of previous PCIe Generation 3</p>                                              |

## Node specifications

|                                                        |                                                                                                                                     |                                                                                                                                            |                                                                |
|--------------------------------------------------------|-------------------------------------------------------------------------------------------------------------------------------------|--------------------------------------------------------------------------------------------------------------------------------------------|----------------------------------------------------------------|
| Node type                                              |  <b>Compute optimized</b><br>(4GB memory/CPU core) |  <b>Memory optimized</b><br>(16GB memory/CPU core)      |                                                                |
|                                                        |  <b>General purpose</b><br>(8GB memory/CPU core)   |  <b>Large scale optimized</b><br>(32GB memory/CPU core) |                                                                |
| Cores per node option <sup>2</sup>                     | 16, 32, 64                                                                                                                          |                                                                                                                                            |                                                                |
| Processor per node option <sup>3</sup>                 | 1, 2                                                                                                                                |                                                                                                                                            |                                                                |
| Compute performance tier                               | Value                                                                                                                               | Balanced                                                                                                                                   | Performance optimized                                          |
| Processor level                                        | 3rd Generation Intel Xeon Scalable Processors Silver or Gold                                                                        | 3rd Generation Intel Xeon Scalable Processors Gold or Platinum                                                                             | 3rd Generation Intel Xeon Scalable Processors Gold or Platinum |
| Processor frequency <sup>4</sup> (base/all core turbo) | 2-2.4Ghz                                                                                                                            | 2.2-2.9Ghz                                                                                                                                 | 2.6-3.1Ghz                                                     |
| Disk groups and cache (per host)                       | 2 x 1.6TB MU NVMe                                                                                                                   |                                                                                                                                            |                                                                |
| Capacity storage (per node)                            | 11.5TB RI SATA, 23TB RI SATA, 46TB RI vSAS, 61TB RI vSAS                                                                            |                                                                                                                                            |                                                                |
| Network interfaces                                     | 4x25GbE (SFP), 4x10GbE (Base-T), 4x10GbE (SFP) <sup>5</sup>                                                                         |                                                                                                                                            |                                                                |
| Min node quantity                                      | 3                                                                                                                                   |                                                                                                                                            |                                                                |
| Max node quantity 1 phase power (per rack)             | without GPU – 10x1U, with GPU – 5x2U                                                                                                |                                                                                                                                            |                                                                |
| Max node quantity 3 phase power (per rack)             | without GPU – 19 x 1U, with GPU – 11x2U                                                                                             |                                                                                                                                            |                                                                |

## Powerful performance built for VMware workloads, with VMware

APEX Private Cloud is designed with today's mission-critical workloads in mind and delivers multiple compute and storage options to cover a wide variety of nodes. VxRail, powered by Dell PowerEdge server platforms and VxRail HCI System Software, delivers deep integration across the VMware ecosystem. This means you can rapidly deploy secure on-premises cloud infrastructure and take advantage of a full stack single-click lifecycle management experience. At the same time, this significantly simplifies operations and ensures clusters are in continuously validated states so that your cloud infrastructure is always up to date.

Adopting the next generation technology that includes the 3rd Generation Intel® Xeon® Scalable Processors, PCIe gen4 based NVMe cache, and higher bandwidth SAS controllers, APEX Private Cloud delivers a powerful platform that is faster with lower latency to support increasing workload requirements and evolving business goals.



2. Compute Optimized nodes only have 32, 64 cores per node option

3. Selection of GPU usage and cores per node determines the processor per node options for a given configuration

4. The processor base and core turbo frequencies depend on the node type, cores per node, processors per host, and compute performance tier chosen

5. Available only for Customer provided rack and switch deployment option

## Flexible deployment option



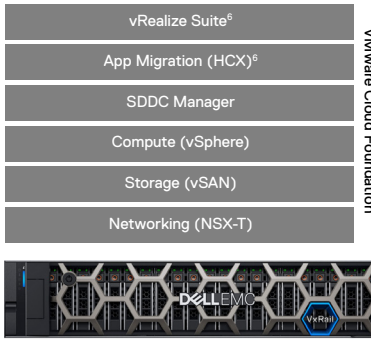
APEX Private Cloud offers further flexibility for you to utilize your own rack enclosure, top-of-rack switches, PDUs, etc. You can choose a Pre-Defined Integrated Rack from Dell or leverage existing rack space with on-site integration. A set of questions during the pre-sales phase will help you get started for this provide-your-own-rack option. The questions include confirming rack size, compliance with Dell's thermal requirements for VxRail, and sufficient PDU outlets to power your configuration.

## Dell integrated infrastructure

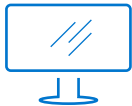
|                                      |                                                                                                                                                      |
|--------------------------------------|------------------------------------------------------------------------------------------------------------------------------------------------------|
| Rack                                 | 42U (600mm wide x 1,200mm deep)                                                                                                                      |
| Network fabric                       | 1 x management switch<br>4 x 25Gbps host network interfaces<br>Redundant top of rack switches<br>4Tbps (full duplex) non-blocking switching capacity |
| Customer facing uplinks              | 1-4 x 10/25/40Gb or 100GB per ToR (optical)                                                                                                          |
| Power connections: AMER              | 4xNEMA L6-30 (200-240v) single phase<br>4xNEMA L21-30 (200-240V) three phase                                                                         |
| Power connections: EMEA              | 4 x IEC 309 32a single phase<br>4 x IEC 309 16A three phase                                                                                          |
| Ambient operating temperature        | 10°C to 30°C<br>50°F to 86°F                                                                                                                         |
| Storage temperature range            | -40°C to +65°C<br>-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: 1,402 pounds (636kg)<br>Max weight - three phase: 1,950 pounds (885kg)                                                    |

## Dell APEX supports your entire cloud journey

Delivering infrastructure designed to support you wherever you are in your cloud journey. Dell APEX offers multiple options that enable you to choose the best infrastructure aligning to your organization's IT strategy. Easily start small and scale up in a phased approach that matches your application needs.

|                         | Dell APEX Compute                                                                                                                                                                                                                                                                                                           | Dell APEX Private Cloud                                                                                                                                                                                                      | Dell APEX Hybrid Cloud for VMware                                                                                                                                                                                            |
|-------------------------|-----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| <b>Management model</b> | Customer managed; Dell owned infrastructure                                                                                                                                                                                                                                                                                 |                                                                                                                                                                                                                              |                                                                                                                                                                                                                              |
| <b>Dell provides</b>    | Asset-level hardware and software support with 24/7 break-fix assistance and parts replacement                                                                                                                                                                                                                              |                                                                                                                                                                                                                              |                                                                                                                                                                                                                              |
| <b>APEX Compute/HCI</b> | <p>Bare metal compute resources supporting your choice of operating system or hypervisor for virtualized or container-based environments</p> <p>Deploy the operating system or hypervisor of your choice</p>  <p><b>Dell PowerEdge</b></p> | <p>Start small and scale up with infrastructure for VMware workloads at your data center and edge locations</p>  <p><b>Dell VxRail</b></p> | <p>Delivering a consistent and secure cloud experience for VMware workloads across multicloud environments</p>  <p><b>Dell VxRail</b></p> |

6. Included in VMware Cloud Foundation Enterprise only



Learn more about  
Dell APEX

[dell.com/apex](https://dell.com/apex)



Contact a Dell  
Technologies Expert

[dell.com/contact](https://dell.com/contact)



Join the  
conversation

[#DellAPEX](https://twitter.com/DellAPEX)