

Dell VxRail

Designed for VMware, with VMware, to enhance VMware

Dell VxRail™, the only jointly engineered hyperconverged infrastructure system with VMware, is the easiest and fastest way to extend a VMware environment. Powered by VMware vSAN™ and managed through the VMware vCenter interface, VxRail provides existing VMware customers a consistent operating experience. As the foundation for Dell Technologies Cloud, VxRail is the first hyperconverged system fully integrated with VMware Cloud Foundation SDDC Manager to deliver one, complete, automated platform.

VxRail is a distributed system consisting of common modular building blocks powered by the best-in-class VxRail HCI System Software that allows customers to start small and grow, scaling capacity and performance easily and non-disruptively from 2 to 64 nodes in a cluster. Single-node scaling and storage capacity expansion provide a simple, predictable, cost-effective “pay-as-you-grow” approach for future growth as needed.

VxRail HCI System Software ensures workloads are always up and running with intelligent lifecycle management (LCM) that non-disruptively automates upgrades, patches, node additions and node retirement to ensure that VxRail infrastructure maintains a continuously validated state. SaaS multi-cluster management can further enhance operational efficiency by leveraging infrastructure machine learning to aggregate performance metrics and detailed health reports into CloudIQ, providing a single global view of a customer’s VxRail environment. And, coupled with a broad set of public RESTful APIs, VxRail is uniquely positioned as the platform of choice for greater cloud and IT automation extensibility.

Built on PowerEdge servers with a choice of Intel® Xeon® Scalable or AMD EPYC™ processors, VxRail is configurable with multiple compute, memory, storage, network and graphics options to cover a wide variety of applications and workloads, and is continuously adopting new technologies like NVMe storage, 100 Gb/s networking, SmartDPUs, and NVIDIA Data Center GPUs to deliver application performance, availability, and diversity for the workloads of tomorrow. And with redundancy built in at every opportunity – from the RAID 1 “BOSS”, high-efficiency redundant power supplies, and multiple networking ports – VxRail delivers 99.9999% high availability.

With the fast adoption of digital transformation and the proliferation of 5G networks, workloads are expanding outside of traditional core data centers, creating an immediate need for a small footprint, low-cost, easy-to-manage infrastructure option. This is especially true for retail, telecommunications, manufacturing, and ROBO customers, whose data collection and data processing needs are increasingly happening at the edge. Customers already benefitting from the simplicity and automation that VxRail provides in the core data center can leverage VxRail satellite nodes, a single node deployment option, to extend these same benefits to the edge.

VxRail comes stacked with mission-critical data services at no additional charge. Data protection technologies such as a starter set of licenses for Dell RecoverPoint for VMs is included, with the option of adding Data Protection Suite for VMware and Data Domain Virtual Edition (DD VE) for larger environments that require more comprehensive data protection.

VxRail is backed by Dell Technologies’ world-class support, offering a single point of contact for both hardware and software components and includes Dell Secure Connect Gateway for call-home and proactive two-way remote connection for remote monitoring, diagnosis, and repair to ensure maximum availability.



VxRail Deployment Flexibility

VxRail with vSAN Original Storage Architecture (OSA)

VxRail with vSAN OSA describes VxRail deployed with original vSAN architecture, configured as a two-tier diskgroup based storage system comprised of dedicated cache and capacity disks, and is supported on all VxRail platforms and configurations.

VxRail with vSAN Express Storage Architecture (ESA)

VxRail with vSAN ESA is an optional, alternative vSAN architecture optimized for high performing, modern hardware. VxRail deployed with VMware's Express Storage Architecture employs a single-tier, all-NVMe storage architecture whose high performance can parallelize I/Os with low CPU overhead. This in turn offers simplified storage device management that allows for adaptive data resiliency and enables RAID-1 performance at RAID-6 capacity.

VMware Cloud Foundation on VxRail

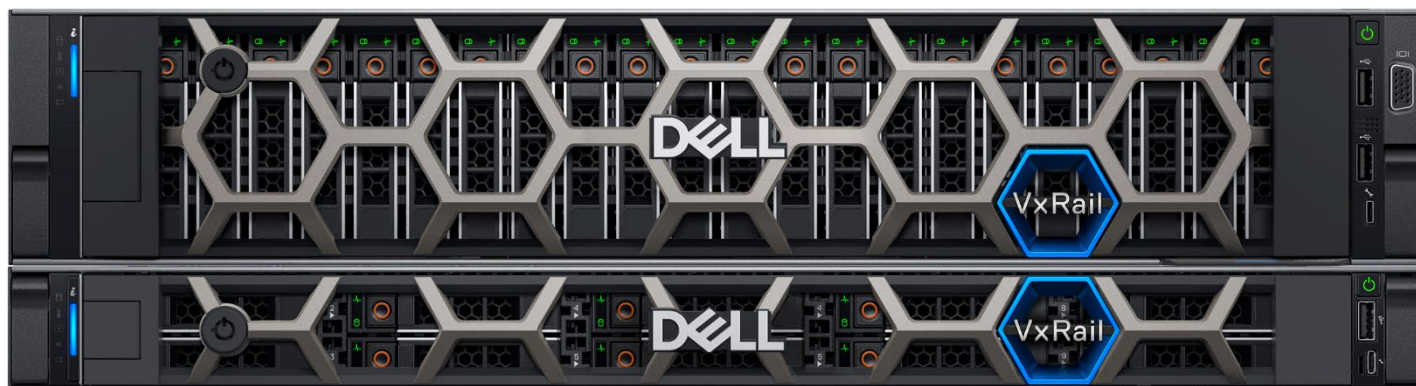
VMware Cloud Foundation on VxRail delivers a simple and direct path to the hybrid cloud and Kubernetes at cloud scale with one complete automated platform, supporting simultaneous VM and container-based workloads on industry-leading Dell PowerEdge server and Dell Storage across multiple cloud environments. The platform delivers a set of software defined services for compute (with vSphere and vCenter), storage (with vSAN and Dell Storage), networking (with NSX), security, cloud management (with vRealize Suite), End User Computing Services (with VMware Horizon and App Volumes), and container-based cloud native platform services (with VMware vSphere 7 with Kubernetes and Tanzu Kubernetes Grid in both private or public environments, making it an ideal operational hub for hybrid cloud.

VxRail dynamic nodes

VxRail dynamic node clusters are compute-only vSphere clusters that allow users to scale compute and storage independently based on workload needs. The Dell storage portfolio, including Dell PowerFlex, PowerStore-T, PowerMax, and Unity XT, can be leveraged as primary storage. VxRail and VCF on VxRail solutions can support dynamic node deployments in a three-tier vSphere architecture to support mission critical data-centric workloads, like financial services and healthcare applications. VxRail dynamic nodes can also extend to VMware vSAN HCI Mesh environments where remote vSAN datastores can also be used as primary storage for dynamic node clusters.

VxRail satellite nodes

VxRail satellite nodes enable customers to implement a low-cost single node option and benefit from the same VxRail automation, testing and optimization, unique lifecycle management, and deep VMware integration increasing operational efficiencies and standardization across edge locations, without the use of vSAN.



| Node | E660 | | | |
|---|---|-----------|--------------------------------------|---|
| Chassis | R650 10 x 2.5" drive bays | | | |
| vSAN type | OSA | | | ESA |
| Storage type | All Flash | Hybrid | All NVMe | All NVMe |
| CPU | Single or dual Intel Xeon Scalable Gen 3 | | Dual Intel Xeon Scalable Gen 3 | |
| Memory | 64 GB to 4096 GB | | 128 GB to 8192 GB | 512 GB to 4096 GB |
| Storage class memory | 256 GB to 8192 GB Intel Optane 200 Series | | | |
| Cache drives | Up to 1600 GB SAS 400 or 800 GB Optane 1600 GB NVMe | | 400 or 800 GB Optane 1600 GB NVMe | N/A |
| Storage capacity | 61 TB SAS or 30 TB SATA | 19 TB SAS | 123 TB | 19.2TB to 64TB |
| Onboard networking | Dual or quad 25 GbE or Dual or quad 10 GbE | | | Dual or quad 25 GbE |
| Networking | Up to 2x: Dual 100GbE or Up to 3x: Dual or quad 25 GbE or Up to 3x: Dual or quad 10 GbE | | | Up to 2x: Dual 100GbE or Up to 3x: Dual or quad 25 GbE |
| Fibre channel | Up to 3x QLogic or Emulex dual port 16Gb / 32Gb HBA | | | |
| GPU | Up to 3x NVIDIA A2 | | | |
| DPU* | Nvidia Bluefield-2 25Gb AMD Pensando 25Gb and 100Gb | N/A | | |
| *At this time, GPUs and DPUs are mutually exclusive | | | | |

| Node | E665 | | |
|----------------------|---|-------------------------------------|-------------|
| Chassis | R6515 with 10 x 2.5" drive bays | R6515 with 8 x 2.5" drive bays | |
| Type | All NVMe | All Flash | Hybrid |
| CPU | Single 2 nd or 3 rd Generation AMD EPYC | | |
| Memory | 64 GB to 1024GB | | |
| Storage class memory | N/A | | |
| Cache drives | 400 or 800 GB Optane 1600 GB NVMe | Up to 1600 GB SAS | |
| Storage capacity | Up to 123 TB | Up to 46 TB SAS Up to 23 TB SATA | Up to 14 TB |
| Onboard networking | Dual 25 GbE or Dual 10 GbE | | |
| Networking | Single: Dual 25 GbE or Single: Dual 10 GbE | | |
| Fibre channel | QLogic or Emulex dual port 16Gb / 32Gb HBA | | |
| GPU | N/A | | |

| Node | P670 | | | P580N |
|----------------------|---|--|--|---|
| Chassis | R750 24 x 2.5" drive bays R750 28 x 2.5" drive bays | R750 24 x 2.5" drive bays | | R840 24 x 2.5" drive bays |
| vSAN type | OSA | | ESA | OSA |
| Storage type | All-flash | All-NVMe | | |
| CPU | Single or dual Intel Xeon Scalable Gen 3 | Dual Intel Xeon Scalable Gen 3 | | Quad Intel Xeon Scalable Gen 2 |
| Memory | 64 GB to 4096 GB | 128 GB to 4096 GB | 512 GB to 4096 GB | 384 GB to 6144 GB |
| Storage class memory | 128 GB to 8192 GB Intel Optane 200 Series | 256 GB to 8192 GB Intel Optane 200 Series | | 2048 GB to 12288 GB Intel Optane 100 Series |
| Cache drives | Up to 1600 GB SAS 400 or 800 GB Optane 1600 GB NVMe | 400 or 800 GB Optane 1600 GB NVMe | N/A | 400 or 800 GB Optane 1600 GB NVMe |
| Storage capacity | Up to 184 TB | Up to 322 TB | Up to 153 TB | Up to 306 TB |
| Onboard networking | Dual or quad 25 GbE or Dual or quad 10 GbE | | Dual or quad 25 GbE | Dual 25 GbE or Dual or quad 10 GbE |
| Networking | Up to 2x: Dual 100GbE or Up to 3x: Dual or quad 25 GbE or Up to 3x: Dual or quad 10 GbE | | Up to 2x: Dual 100GbE or Up to 3x: Dual or quad 25 GbE | Up to 2x: Dual 100GbE or Up to 3x: Dual 25 GbE or Up to 3x: Dual or quad 10 GbE |
| Fibre channel | QLogic or Emulex dual port 16Gb / 32Gb HBA | | | |
| GPU | N/A | Up to 2x: NVIDIA A2 or Up to 2x: A100 or Up to 2x: A40 or Up to 2x: A30 or Up to 2x: A16 | Up to 2x: NVIDIA A2 or Up to 2x: A100 or Up to 2x: A40 or Up to 2x: A30 or Up to 2x: A16 | N/A |
| DPU | Nvidia Bluefield-2 25Gb AMD Pensando 25Gb and 100Gb | N/A | N/A | N/A |

| Node | P675 | |
|----------------------|---|---|
| Chassis | R7515 with 24 x 2.5" drive bays | |
| Type | All NVMe | All flash |
| CPU | Single 2 nd or 3 rd Generation AMD EPYC | |
| Memory | 64 GB to 2048 GB | |
| Storage class memory | N/A | |
| Cache | 400 or 800 GB Optane 1600 GB NVMe | Up to 1600 GB SAS |
| Storage capacity | Up to 307 TB | Up to 153 TB SAS or Up to 76 TB SATA |
| Onboard networking | Dual 25 GbE or Dual 10 GbE | |
| Networking | Single: Dual 100GbE or Up to 3x: Dual 25 GbE or Up to 3x: Dual or quad 10 GbE | |
| Fibre channel | QLogic or Emulex dual port 16Gb / 32Gb HBA | |
| GPU | Up to 3x: NVIDIA A2 or Single: NVIDIA A16 or Single: NVIDIA A30 | |

| Node | V670 |
|---|---|
| Chassis | R750 with 24 x 2.5" drive bays |
| Type | All flash |
| CPU | Dual Intel Xeon Scalable Gen 3 |
| Memory | 128 GB to 4096 GB |
| Storage class memory | 256 GB to 8192 GB Intel Optane 200 Series |
| Cache | 800 or 1600 GB SAS 400 or 800 GB Optane 1600 GB NVMe |
| Storage capacity | 161 TB SAS |
| Onboard networking | Dual or quad 25 GbE or Dual or quad 10 GbE |
| Networking | Up to 2x: Dual 100GbE or Up to 3x: Dual or quad 25 GbE or Up to 3x: Dual or quad 10 GbE |
| Fibre channel | QLogic or Emulex dual port 16Gb / 32Gb HBA |
| GPU | Up to 2x A100 40GB or 80GB or Up to 2x A40 or Up to 2x A30 or Up to 2x A16 or Up to 6x A2 |
| DPU* | Nvidia Bluefield-2 25Gb AMD Pensando 25Gb and 100Gb |
| *At this time, GPUs and DPUs are mutually exclusive | |

| Node | S670 |
|----------------------|--|
| Chassis | R750 with 12 x 3.5" front drive bays plus 4 x 2.5" rear drive bays |
| Type | Hybrid |
| CPU | Single or dual Intel Xeon Scalable Gen 3 |
| Memory | 64 GB to 4096 GB |
| Storage class memory | N/A |
| Cache drives | Up to 1600 GB SAS 400 or 800 GB Optane 1600 GB NVMe |
| Storage capacity | Up to 144 TB NL SAS |
| Onboard networking | Dual or quad 25 GbE or Dual or quad 10 GbE |
| Networking | Up to 3x: Dual or quad 25 GbE or Up to 3x: Dual or quad 10 GbE |
| Fibre channel | QLogic or Emulex dual port 16Gb / 32Gb HBA |
| GPU | N/A |

VxRail dynamic nodes

| Node | E660F | P670F | V670F |
|----------------------|---|-------|--|
| Chassis | R650 | R750 | |
| CPU | Single or dual Intel Xeon Scalable Gen 3 | | Dual Intel Xeon Scalable Gen 3 |
| Memory | 64 GB to 4096 GB | | 128 GB to 4096 GB |
| Storage class memory | 128 GB to 8192 GB Intel Optane 200 Series | | |
| Storage capacity | N/A external storage required | | |
| Onboard networking | Dual or quad 25 GbE or Dual or quad 10 GbE | | |
| Networking | Up to 2x: Dual 100GbE or Up to 3x: Dual or quad 25GbE or Up to 3x: Dual or quad 10GbE | | |
| Fibre channel | QLogic or Emulex dual port 16Gb / 32Gb HBA | | |
| GPU | Up to 3x NVIDIA A2 | N/A | Up to 2x A100 or Up to 2x A40 or Up to 2x A30 or Up to 2x A16 or Up to 6x A2 |

VxRail satellite nodes

| Node | E660 | E660F | V670F |
|------------------------|---|---------------|--|
| Chassis | R650 with 10 x 2.5" drive bays | | with 24 x 2.5" drive bays |
| Type | Hybrid | All flash | |
| CPU | Single or dual Intel Xeon Scalable Gen 3 | | Dual Intel Xeon Scalable Gen 3 |
| Memory | 64 GB to 4096 GB | | 128 GB to 4096 GB |
| Storage class memory | 128 GB to 8192 GB Intel Optane 200 Series | | 256 GB to 8192 GB Intel Optane 200 Series |
| Storage controller | HBA355i or PERC H755 with RAID 1, 5, 6, 10, 50, 60 | | |
| Local storage capacity | SAS HDD 24 TB | SAS SSD 76 TB | SAS SSD 184 TB |
| Onboard networking | Dual or quad 25 GbE or Dual or quad 10 GbE | | |
| Networking | Up to 2x: Dual 100GbE or Up to 3x: Dual or quad 25 GbE or Up to 3x: Dual or quad 10 GbE | | |
| Fibre channel | QLogic or Emulex dual port 16Gb / 32Gb HBA | | |
| GPU | Up to 3x NVIDIA A2 | | Up to 2x A100 or Up to 2x A40 or Up to 2x A30 or Up to 2x A16 or Up to 6x A2 |

Specifications and dimensions

| | |
|---|--|
| VxRail Owner's Manuals and Technical Specifications | VxRail E660, E660F and E660N Technical Specifications VxRail P670F, V670F and S670 Technical Specifications VxRail E665, E665F and E665N Technical Specifications VxRail P675F and P675N Technical Specifications VxRail P580N Series Owner's Manual |
|---|--|

Dell Technologies Services for Dell VxRail*

Deployment Services

| | |
|--------------------------------------|--|
| ProDeploy for Enterprise | Accelerate technology adoption with expert deployment designed for your environment. Includes a site readiness review, 24x7 deployment hours, onsite or remote installation, disposal of packaging materials, remote installation and configuration of system software and information transfer to technical support team. |
| ProDeploy Plus for Enterprise | Accelerate even the most complex deployments. Includes all the above, plus a designated Support Service Manager, onsite installation & configuration of system software, 30-days post deployment configuration assistance, and training credits for Dell Education Services. |
| Residency Services | Specialized, certified VxRail experts to help you quickly adopt and integrate VxRail Hyperconverged Infrastructure. Option for onsite, remote, and short-term engagements. |
| Data Migration for Enterprise | Consistent, repeatable, dependable process to plan and manage data migration projects. Migrate data from existing Dell hardware, from third party hardware, and from onsite or public clouds. |
| Data Protection services | Implementation of Data protection Suite for VMware, Configuration for Data Domain Virtual Edition, or Implementation of RecoverPoint for Virtual Machines. |
| Stretched Cluster services | Implementation of stretched clusters, which provide a redundant system to help prevent data lost due to system failures or catastrophic events. |
| Top-of-Rack switch | Installation & Implementation for Top-of-Rack switch |

Support Services

| | |
|--|--|
| ProSupport for Enterprise | One source for comprehensive data center hardware and software support. Includes 24x7 remote technical support, next business day or 4hr mission critical onsite support, 3 rd party collaborative assistance, access to software updates. |
| ProSupport Plus for Enterprise | Single source of system-level support. Includes all the above, plus priority access to specialized support experts, predictive detection of hardware failures, 3 rd party software support, and assigned service account manager, proactive assessments and recommendations, and proactive systems maintenance. |
| ProSupport One for Enterprise | Offers flexible site-wide support for large and distributed data centers with more than 1,000 assets. When you choose ProSupport One for Data Center, you'll get: <ul style="list-style-type: none"> • Designated senior ProSupport One technical and field engineers who are trained on your environment and configurations • Flexible on-site support and parts options that fit your operational model • A tailored support plan for your operations staff |
| Optimize for Infrastructure | Year-round guidance on the operational health of your systems. Year-round, in-depth analysis and strategic guidance to keep your systems optimized and configured for continuous peak performance |
| Keep Your Hard Drive/Keep your Component for Enterprise | Maintain control of your highly sensitive data by retaining possession of failed drives or components when receiving replacements without incurring additional costs |
| Data Sanitization and Data Destruction for Enterprise | Secure data on retired, returned, or redeployed systems. Data Sanitization renders data unrecoverable through a process of overwriting the data. Data Destruction physically destroys the device. |
| Technical Account Manager service | TAMs for VxRail can be purchased to help in areas like Infrastructure Guidance and/or Designated Remote Support. |
| Onsite Diagnosis | Onsite troubleshooting on your behalf by a skilled technician to any site <ul style="list-style-type: none"> • Skip phone-based hardware troubleshooting and have a technician dispatched directly to your site • Save time and resources, let our experts troubleshoot and diagnose hardware issues for you <p>Avoid the need to reallocate IT staff to satellite locations or unmanned data centers</p> |
| Hardware Upgrade services | Installation of physical and logical components of hardware upgrades. Includes node expansions (adding nodes to an existing cluster), storage expansions (adding drives to existing VxRail nodes) and hardware expansions (adding hardware components to existing VxRail nodes). |

*Availability and terms of Dell Technologies Services may vary by region and by product.



[Learn more](#) about Dell VxRail



[Contact](#) a Dell Expert



[View more](#) resources



Join the conversation with #VxRail