

DD VE Overview and Benefits

Simple, Flexible, and Efficient

- Configure and deploy in minutes
- Differentiating features of Data Domain like an average deduplication rate of up to 55:1
- Grow as you scale in 1TB increments
- Run on any commodity server, converged, and hyper-converged

Virtualized and Cloud Environments

- Multiple hypervisors support: VMware ESXi, Microsoft Hyper-V, and KVM
- Run in AWS, AWS GovCloud, Azure, Azure Government Cloud, Google Cloud Platform, and VMware Cloud on AWS
- Support up to 96TB instances

Transactional and Operational Efficiencies

- Ability to write or backup data into the object store directly in addition to block storage
- Can support AWS S3 and Azure Hot Blob object stores

Manageability

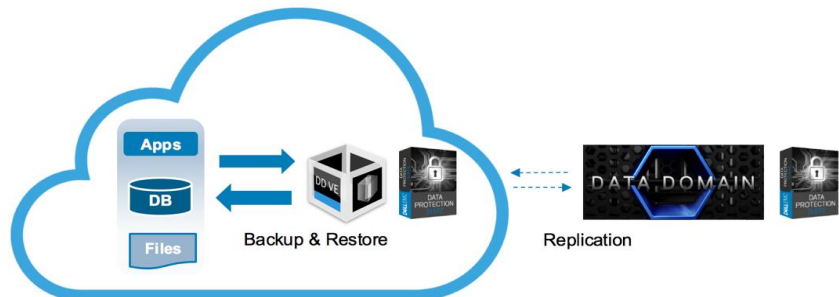
- Single point of management with Dell EMC Data Domain Management Center (DD MC)
- Configure and deploy using VMware vSphere and Microsoft Hyper-V Manager

DELL EMC DATA DOMAIN VIRTUAL EDITION

Software-Defined Data Protection

Dell EMC Data Domain appliances deliver the most trusted protection storage in the market. Data Domain appliances deliver industry-leading deduplication, scalability, reliability, performance, unparalleled data integrity to ensure reliable recovery, and a broad ecosystem of backup and archive applications.

Data Domain Virtual Edition (DD VE) is a software-defined data protection solution of Data Domain, thereby maintaining all the core differentiating features of Data Domain appliances. DD VE is fast and simple to download, deploy, and configure. DD VE can be up and running in minutes on any standard server, converged or hyper-converged. DD VE delivers increased transactional and operational efficiencies, reliability and lower TCO by utilizing object storage in addition to block storage.



DD VE enables data protection in the cloud for applications running in the cloud. DD VE in the cloud allows for both backup and replication. Data can be moved to an on-premise Data Domain and backup to the cloud, or even backup and replicate data between two instances of DD VE running in the cloud or on-premise. This allows multiple DD VE instances to be spun up in other regions and backup and replicate the data over to keep everything consistent.

DD VE scales up to 96TB per instance and you can pay as you grow in as little as 1TB increments and distribute this capacity in multiple instances as needed across the environment.

Powerful Management

Dell EMC Data Domain Management Center (DD MC), can provide the same dashboard-based resource management, monitoring and reporting center for the physical Data Domain appliances as well as DD VE. DD MC is now available as a free download without the need of any license.

DD MC provides an aggregated management for multiple Data Domain appliances (physical and virtual). DD MC can view capacity and replication management as well as manage health, secure multi-tenancy and status resource monitoring.

Data Protection for Virtualized Environments

DD VE can provide data protection to multiple virtual server environments based on VMware ESXi, VMware vSphere, Microsoft Hyper-V, and KVM. DD VE can protect data, backup and restore between virtual machines on the same server, across multiple servers or in the cloud. It can serve protection across multi-tenant environments too.

DD VE supports the following hypervisor versions:

VMware ESXi: Version 5.5, 6.0, 6.5, 9.0 and after

VMware vSphere: Version 5.5, 6.0, 6.5, 9.0 and after

Microsoft Hyper-V: Microsoft Windows Server 2012 R2, Windows Server 2016

KVM Linux distributions from Ubuntu, RedHat, SUSE, and CentOS

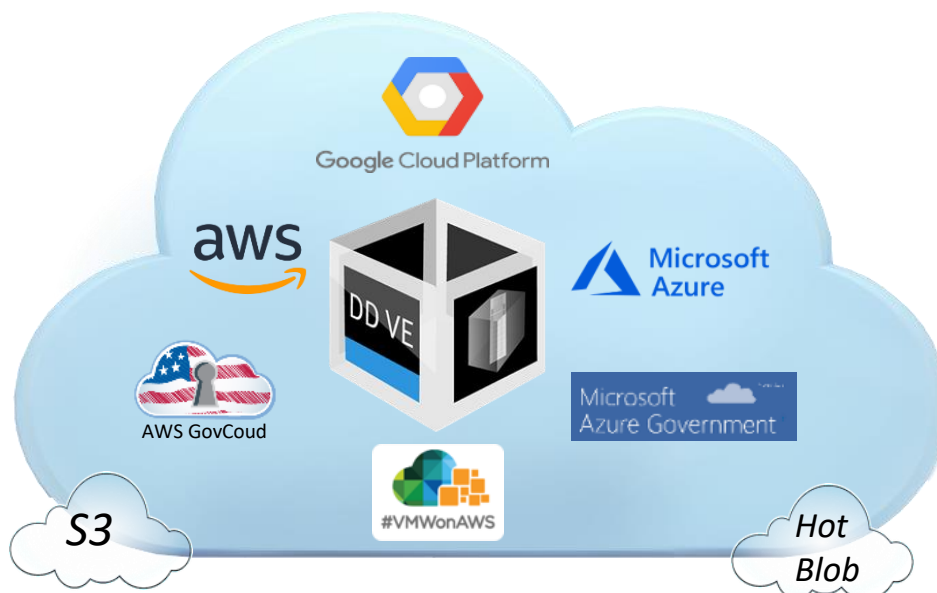
DD VE can be deployed and configured by VMware vSphere, Hyper-V Manager, and respective KVM Linux distributions manager.

Take Full Advantage of Cloud Efficiencies

DD VE can protect applications running in any cloud environment – AWS, Azure, Google Cloud Platform, AWS GovCloud, Azure Government Cloud, and VMware Cloud on AWS. DD VE can scale up to 96TB per instance. DD VE can be downloaded from the AWS and Azure marketplace, as well as orderable via Dell EMC.

Efficient utilization of cloud storage

DD VE can increase transactional and operational efficiencies in addition to providing significant cost savings, by providing the ability to write data or backup into the cloud object store directly. These object stores can belong to AWS S3 Standard or Microsoft Azure Hot Blob. In this way, you can also ensure increased reliability and larger capacity in the cloud.



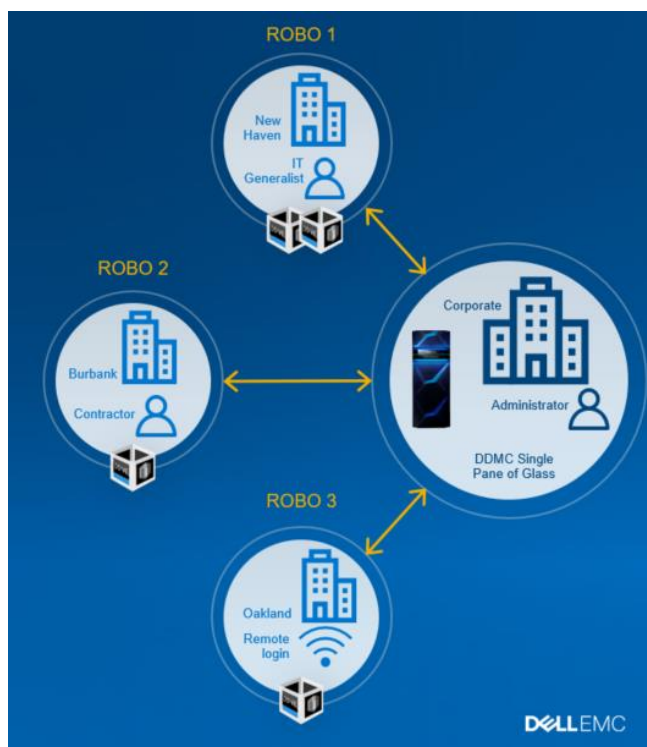
DD VE Use Cases in the cloud

DD VE delivers the benefits of Data Domain's industry-leading protection storage with the agility, flexibility, and efficiency of a software-defined Data Domain solution. Some of the use cases are:

- Remote office / back office (ROBO) environments
- Protecting databases, workloads, and applications
- Replication to a public cloud

Remote office / back office (ROBO) environments

Many enterprises that have remote offices all over the world face the challenge of managing, monitoring, and protecting data in such environments. Data Domain appliances working in parallel with DD VE can help meet these data protection challenges.



With a Data Domain appliance at the main datacenter and a DD VE at each branch office, you get the assurance that your data at these branch offices is protected. The entire data protection environment can be managed centrally with the Data Domain Management Center. If a branch office has a failure or must shut down, you have the peace of mind that the protected data is not lost. DD VE will divert that data into another remote office or stores it on-premises. In addition, you gain the flexibility to grow in capacity cost effectively as your needs increase in increments of 1TB.

Protecting new workloads and applications

DD VE can cost effectively extend its benefits like deduplication, scalability, and flexibility to new workloads and applications, including MySQL, mongoDB, Cassandra, EDB Postgres and others. Extending DD VE protection to new applications is very simple and designed to be easily accomplished by backup admins, IT generalists or those specializing in databases or platforms.

DD VE is hardware agnostic

DD VE can run on any commodity server as well as higher performing servers like Dell EMC PowerEdge or a converged platform like Dell EMC VxRail.

DD VE on PowerEdge Server

DD VE is delivered in pre-tested configurations for ROBO environments as an example, thereby making it fast and simple to deploy. It can grow as the demand increases and is reliable for protecting a variety of workloads and applications as mentioned earlier.

DD VE on VxRail

DD VE can extend its software-defined data protection benefits to converged environments too. DD VE can be deployed on a VxRail platform in minutes and can be replicated to any datacenter. DD VE offers the simplicity and flexibility to protect, backup, and restore data in converged environments. You can get end-to-end data protection with the deployment of Data Domain or DD VE along with Data Protection Suite for VMware on Dell EMC VxRail platforms.



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Dell EMC PowerProtect DataDomain數據保護專用存儲設備

[\(/Brand/Info/5\)](#)

DataDomain 操作系統 (DDOS) 是為 Dell EMC PowerProtect DD 系列數據保護專用存儲設備提供支持的智能技術。它所具有的敏捷性、安全性和可靠性支持PowerProtect DD 為備份、歸檔和災難恢復提供高速、可擴展且業界卓越的多雲數據存儲。DDOS 可與現有基礎架構無縫集成，從而輕鬆搭配主流備份和歸檔應用程序使用，它還能與 Dell EMC PowerProtect Data Manager 和 Data Protection Suite 相結合來提供卓越的性能。

Dell EMC PowerProtect DD 系列

數據保護專用存儲設備

出色的保護存儲設備

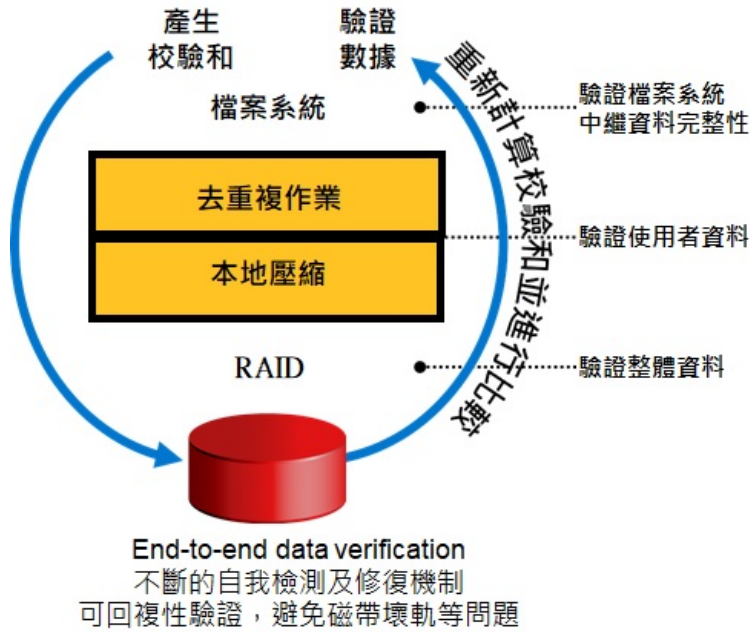
借助 Dell EMC PowerProtect DD 系列數據保護專用存儲設備，組織可以在多元化環境中大規模保護、管理和恢復數據。PowerProtect DD 系列數據保護專用存儲設備是 Dell EMC Data Domain 數據保護專用存儲設備的下一代產品，現在正在為從邊緣到核心再到雲端的數據管理設定標準。PowerProtect DD 提供生態系統支持、效率、全面且功能強大的數據保護以及支持雲的功能，這些都是客戶對於 Data Domain 所期望和欣賞的功能，而且現在提升到更高的水平。快速、安全且高效的數據保護PowerProtect DD 可降低數據遺失風險，並利用受保護數據的價值，同時滿足日益嚴格的 SLA(Service Level Agreement)要求和不斷增加的 ROI(Return On Investment)。DDOS 則能助力 PowerProtect DD 將備份速度提高多達 38%，將恢復速度提高多達 36%，並實現更高的壓縮級別。這種經過改進的壓縮級別能將邏輯容量增加多達 30%。現在，PowerProtect DD 可在單個機架中縱向擴展到 1.25 PB 的物理容量，從而盡可能減少佔用空間，並將電力和冷卻成本降低多達 35%。通過採用更密集的磁碟機，PowerProtect DD 將所需的機架空間減少多達 39%。PowerProtect DD 提供多達 2 PB 的額外邏輯容量用於雲中的長期保留，所有這些都在採用 Dell EMC 雲端的單一機架中實現。PowerProtect DD 能在單個機架中實現高可用性，因此可以在極偶然的發生硬件故障的情況下減少停機時間，從而進一步降低總擁有成本。PowerProtectDD 還提供高速網絡連接，且支持 25GbE 和 100GbE 網絡適配器。

即時訪問和即時恢復

即時訪問和即時恢復可為虛擬機提供高達 60,000 IOPS 的高性能，而且能夠同時快速訪問多達 64 台虛擬機*。即時訪問和即時恢復支持即時訪問所含 PowerProtect DD SSD 驅動器上備份映像中的數據，可最大限度縮短平均修復(MTTR)，從而節省時間。它還可通過管理數據保護專用存儲設備上的數據來節省主存儲空間，以及通過更好地利用數據保護以及生產環境中的物理資源來降低成本。在虛擬化環境中發生任何故障或災難恢復時，PowerProtect DD 可以在數據保護專用存儲設備中立即運行面向生產的虛擬機。這樣一來，客戶就可以繼續進行日常事務，而不會產生任何停機，同時還可將發生故障的虛擬機恢復到生產環境。

資料無損結構

資料無損結構內置在 DDOS 和PowerProtect DD 系列數據保護專用存儲設備中，可提供業界卓越的數據丟失防護。讀寫驗證可防止在數據接收和檢索過程中出現數據完整性問題，並可自動恢復數據的完整性。同時 RAID-6 和熱備份可以針對磁碟故障提供防護。在備份過程中捕獲和修正 I/O 錯誤可以避免重複的備份作業，確保備份按時完成並滿足服務級別協議。此外，與其他企業陣列或文件系統不同，連續故障檢測和自我修復功能可確保 PowerProtect DD 上的數據在其生命週期內可恢復。



Dell EMC PowerProtect DD 系列產品

PowerProtect DD (Data Domain) 產品家族

小型企業/ROBO

中型企業

大型企業

	Virtual Edition	DD3300	DD6300	DD6900	DD9400	DD9900
速度 (DD Boost)	Up to 11.2TB/hr for 96TB	Up to 7.0TB/hr	Up to 24TB/hr	Up to 33TB/hr	Up to 57TB/hr	Up to 94TB/hr
邏輯容量	Up to 4.8PB	200TB-1.6PB	1.8-8.9 PB	2.4-14.4PB	9.6-38.4PB	28.8-62.5PB
可用容量	0.5 – 96TB	4-32TB	14-178 TB	48TB-288TB	192TB-768TB	576TB-1.25PB

¹ Total capacity on Active Tier only
² Total capacity with DD Cloud Tier software for long-term retention

無縫集成

PowerProtect DD 可與現有基礎架構輕鬆集成，從而便利地搭配主流備份和歸檔應用程序使用，它還能與 PowerProtect Data Manager 和 Data Protection Suite 相結合來提供卓越的性能。由於PowerProtect DD 同時支持包括NFS、CIFS、VTL、NDMP 和DD Boost™ 等多種訪問方法，因此可以在同一 PowerProtect DD 數據保護專用存儲設備中同時支持所有應用程序和應用工具，從而實現更高程度的保護存儲整合。同一個系統，既可以作為文件服務器（通過乙太網路提供NFS或CIFS訪問），也可以作為光纖通道虛擬磁帶庫(VTL)、乙太網路NDMP 磁帶服務器，或是使用DD Boost™等應用程序特定介面的磁碟目標。經鑑定，DD VTL 可用於主流的開放式系統和 IBMi 企業備份應用程序。

卓越的多雲保護

PowerProtect DD 可簡化和提高運營效率，提供您的雲環境（私有雲、公有雲和混合雲環境）發展所需的彈性和規模。PowerProtect DD 還支持非常廣泛的雲生態系統（AWS、Azure、VMware Cloud、Google Cloud Platform 和阿里雲），能以更低的成本提供出色的雲端數據保護。PowerProtect DD 通過 Dell EMC 雲層在本機將已消除重複數據的數據分層到任何云環境，以實現長期保留。

PowerProtect DD 軟件加載

DD Boost

DD Boost 軟件提供與備份應用程序和數據庫應用工具的高級別集成，從而增強了性能和簡易性。Dell EMC 還提供了 DD Boost 文件系統插件 (BoostFS) 與 DD Boost，以獲得更大的應用程序支持，對於使用 NFS/CIFS 進行數據保護的應用程序，能充分發揮 DD Boost 的優勢。DD Boost 能讓備份服務器或應用程序客戶端僅將唯一數據段通過網絡發送到系統，而不是將所有數據都發送到系統，再進行重複數據消除處理。

DD Replicator

DD Replicator 軟件可提供基於策略的自動化網路高效型加密複製，以實現災難恢復和多站點備份與歸檔整合。DD Replicator 軟件通過 WAN 僅異地複製已壓縮且進行了重複數據消除的數據。將多個站點複製到同一目標系統時，跨站點重複數據消除可進一步減少帶寬需求。這將提高所有站點間的網路效率，並減少每日網路頻寬需求，使基於網路的複製更快速、可靠和經濟效益。為了滿足廣泛的災難恢復需求，DD Replicator 提供了靈活的複製拓撲，例如完整系統鏡像、雙向、多對一、一對多複製。

PowerProtect DD Virtual Edition

PowerProtect DD Virtual Edition (DDVE) 利用 DDOS 的強大功能在本地和雲中提供軟件定義的保護存儲。下載、部署和配置 DDVE 都非常快速和簡單，幾分鐘之內便可啟動並正常運行。DDVE 可以部署在標準虛擬化系統或超融合系統上，它不僅在VMware vSphere、Microsoft Hyper-V 和KVM 上運行，還可通過 AWS、AWS GovCloud、VMware Cloud、Azure、Azure Government Cloud 和Google Cloud Platform在雲中運行。DDVE 還通過了 VxRail 和 Dell PowerEdge 服務器的認證。部署期間，可以運行評估工具來檢查底層基礎架構並確保其滿足建議的要求。在雲中，一個 DDVE 實例可以擴展到多達 96 TB。容量可以在系統之間輕鬆移動，並且可以按 1 TB 的增量進行擴展，以便您根據業務需求進行擴展。DDVE 不僅保留了 DDOS 核心功能，還包括 DD Boost、DD Encryption 和 DD Replicator。DDVE 可通過 DD System Manager 進行配置和管理，多個 DDVE 實例可通過 PowerProtect DD Management Center 在本地和雲端進行集中管理。

操作簡易性

PowerProtect DD 安裝和管理都非常簡便，因而可降低管理和運營成本。管理員可以通過命令行使用 SSH 或通過 DD System Manager（瀏覽器圖形用戶界面）訪問 DDOS。可以通過 PowerProtect DD Management Center 在單一界面中管理和監視多個 PowerProtect DD 數據保護專用存儲設備。通過自定義的控制面板，可以查看狀態，並能深入查看系統級詳細信息。基於角色的訪問可以在組織內針對不同的專業技能級別分配用戶角色，實現不同級別的訪問。簡單的

可描述性以及 SNMP 監視功能為管理帶來了更大的靈活性。此外，PowerProtect DD 還具有自動 Call Home 的系統報告功能，此功能可向 Dell EMC 支持部門和一系列選定的管理員提供有關完整系統狀態的電子郵件通知。這種非侵入式警報和數據收集功能實現了主動預防性支持和服務而無需管理員干預，進一步簡化了日常管理。



相關解決方案

- Dell EMC PowerProtect Data Manager 新一代雲數據保護 (/Solution/Detail?solutionid=61)
- DELL EMC Networker (/Solution/Detail?solutionid=144)
- Dell EMC Data Protection Suite 軟體家族 (/Solution/Detail?solutionid=145)
- Dell EMC Data Protection Solutions 資料保護解決方案 (/Solution/Detail?solutionid=147)



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