Dell DR Series disk backup and disaster recovery solutions

Minimize the time and storage needed to protect production data by using a backup-to-disk appliance as the repository for protected data. The Dell DR Series appliances ensure data recovery and integrity and overcome the toughest backup and disaster recovery challenges. They provide faster backup and restore times, and reduce the amount of storage necessary to protect ever-growing data sets.

By using built–in, block-based deduplication and compression in conjunction with DR Rapid technology, the DR4100, the DR6000 and the DR2000v help you:

- Reduce the storage footprint for backups.
- Enable backup data to remain on disk and online longer.
- Remove the need to use tapes for backup.
- Minimize the amount of data sent over networks to disaster recovery sites.

Simple, affordable solutions

The DR Series systems are extremely efficient, high performance disk-based backup and recovery appliances available in both physical and virtual configurations. The DR Series appliances are simple to deploy and manage, and offer unsurpassed total cost of ownership (TCO) benefits.

Innovative system software and an all-inclusive licensing model provide optimal functionality and help eliminate the hidden costs of future feature upgrades. The DR Series appliances have a simple installation process with intuitive remote setup and management capabilities. In addition, they are available in a range of usable capacity points, making them ideal for small enterprise, remote office environments, and larger enterprise settings.

Harness the power of deduplication

Through the use of innovative Dell deduplication and compression technology, the DR Series systems can help achieve data reduction levels up to 15:1. This reduction in data means that more backup data can be retained longer and within the same footprint.

As disk backup target repositories, the DR Series systems are specifically engineered to handle high-throughput streaming backup workloads, with all deduplication and compression operations being performed inline. This approach minimizes the impact on backup and recovery performance.

Fast and affordable data reduction with the future built in.

Benefits:

- Lowers backup storage costs to as little as $.17/GB using deduplication and compression.
- Decreases TCO with all-inclusive licensing (replication, DR Rapid and future software enhancements).
- Makes disaster recovery more economical compared to standard disk and tape.
- Increases disaster recovery readiness by reducing WAN traffic more than 20x.
- Enhances data protection with built-in software safeguards (early write verify and continuous data protection).
- Incorporates data protection hardware features (NVRAM, surface scans, RAID6 storage, hot spares).

Achieve extensive scalability

The DR4100 and DR6000 offer flexible and seamless capacity expansion using Dell PowerVault MD1200 expansion shelves. The DR4100 appliances start at 2.7TB and scale to as much as 81TB of usable capacity (after RAID) using two MD1200 expansion shelves. For larger enterprises, the DR6000 starts at 9TB and can grow up to 180TB of usable capacity (after RAID). This pay-as-you-grow model allows you to expand capacity based on your business demands and helps alleviate challenges in the backup workflow.

Data backed up to DR Series appliances are handled as virtual shares or containers – eight for the DR2000v, 32 for the DR4100 or 64 for the DR6000. DR appliance software automatically partitions existing capacity of the base unit and all expansion shelves, relieving the user of performing any storage provisioning.

Virtual appliance ideal for protecting small, remote or branch offices

For cost-effective data protection for small, remote or branch offices, the DR2000v is an attractive choice since no additional hardware investments are necessary. This pure software solution delivers all the same benefits of a physical DR appliance, including deduplication, compression, replication and advanced data protection.

The DR2000v is implemented at the remote site for local data protection and recovery. For disaster recovery purposes, the DR2000v replicates deduplicated data remotely to a peer DR4000/41000/6000 appliance. The DR2000v is offered in 1, 2 or 4TB (with a maximum of 8 containers) capacity points and may be ordered in packs of one or ten licenses.

Reap the rewards of business continuity

One of the primary benefits of backup-to-disk appliances is the ability to recover data in the event of disaster. By saving storage space through deduplication and compression, larger amounts of data can be kept online longer and businesses can meet their recovery time and recovery point objectives while also lowering capital and administrative costs.

Through the use of the DR Series replication functionality, the benefits of data deduplication can extend across the enterprise to provide a complete backup and disaster recovery solution for multi-site environments. By replicating only deduplicated data from one DR appliance to another, network bandwidth requirements are reduced and disaster recovery time is optimized.

Replication enables better disaster tolerance without the operational costs associated with transporting tapes off site, and it can be scheduled to occur during nonpeak periods, During replication ingest data is prioritized over replication data to help ensure optimal backup windows.

With the introduction of DR Series software 3.1, Dell has added cascaded replication to allow single or multiple containers to be replicated from a source system, to a primary target and then to a secondary target. In addition, customers can now save time and bandwidth during initial replication configuration by taking advantage of replication seeding which utilizes an external storage device to transfer backup data from the appliance at the source to the appliance at the disaster recovery site.

Management simplicity

As part of the DR series software, the graphical user interface, Global View, is part of the DR4100 or DR6000 and provides an overview of a network of DR physical and virtual appliances, including system stats, hardware and software alerts, storage capacity/savings and important system information such as system and software versions.
Global View allows administrators to monitor a network of up to 64 DR appliances from a single screen for a seamless view of status across the enterprise. The DR Series appliance software automatically monitors the health of the hardware and verifies the integrity of the system software. Critical hardware and software issues can be sent by email for immediate notification.

Flexibility to meet your needs

As purpose-built backup target appliances, the DR Series systems are specifically designed to perform the functions of deduplication and compression. Optimized for this purpose, they support a broad range of leading backup software solutions, such as Dell NetVault Backup and vRanger, as well as Symantec® NetBackup® and Backup Exec®, CommVault® Simpana®, Veeam, EMC Networker, IBM TSM, Oracle RMAN, CA ArcServe, Hewlett Packard® Data Protector®, Bridgehead®, Amanda® and Atempo Time Navigator.[1]

Accelerate backup operations with Dell DR Rapid technology

A distinguishing feature of the DR Series is DR Rapid – a technology offered through a set of plug-ins that comes standard with every appliance. The plug-ins are engineered by Dell and can be installed on the client servers or

[1] *Please see on-line tech specs for additional software certifications.*

Feature	DR4100	DR6000	DR2000v
Form factor	2U	2U	n/a
Internal storage	Redundant OS storage on dedicated disks (inside chassis) 12 3.5" drives, Near Line SAS–hardware RAID 6 configuration (11 drives + 1 hot spare)	Redundant OS storage on dedicated disks (inside chassis) 12 3.5" drives, Near Line SAS–hardware RAID 6 configuration (11 drives + 1 hot spare)	Uses storage disks resident in the server hosting the virtual appliance (VMware ESXi (5.0, 5.1 or 5.5), Microsoft Hyper V (2012, 2012R2)
DR Rapid protocol support	NFS, CIFS, OST and RDA	NFS, CIFS, Rapid NFS, Rapid CIFS, OST and RDA	NFS, CIFS, RDA, OST
Networking	One Network Daughter Card option per node: 4-port 1GbE (base-T) or 2 port 10GbE (base-T or SFP+) + 2 port 1GbE. Plus one optional add-on NIC: 2 port 1GbE (base-T) or 2 port 10GbE (base-T or SFP+).	One Network Daughter Card option per node: 4 port 1GbE (base-T), or 2 port 10GbE (base-T or SFP+) + 2 port 1GbE, or 4 port 10GbE (SFP+) Plus one optional add-on NIC: 2 port 1GbE (base-T) or 2 port 10GbE (base-T or SFP+)	2 x 1GbE ports
Systems management	iDRAC 7 Enterprise	iDRAC 7 Enterprise	n/a
Physical dimensions	2U RAC-mountable chassis or 29.72" (75.5cm) D x 18.99" (48.24cm) W x 3.44" (8.73cm) H with bezel attached	2U RAC-mountable chassis or 29.72" (75.5cm) D x 18.99" (48.24cm) W x 3.44" (8.73cm) H with bezel attached	n/a
Rack weight	32.5kg, (71.5lbs.), maximum configuration	32.5kg, (71.5lbs.), maximum configuration	n/a
License Capacity points	Available in 5 post-RAID configurations: 2.7TB (41TB logical)[5] 5.4TB (81TB logical)[5] 9TB (135TB logical)[5] 18TB (270TB logical)[5] 27TB post-RAID (405TB logical)[5]	Available in 4 post-RAID configurations: 9TB (135TB logical)[5] 18TB (270TB logical)[5] 27TB (405TB logical)[5] 36TB (540TB logical)[5]	Available in 3 post-RAID Configurations: 1 TB, 2 TB and 4TB[9] Each DR4X00 can support up to 32 DR2000v licenses. Each DR6000 can support up to 64 DR2000v licenses.
Expansion unit capacity[8]	9TB post-RAID (135TB logical)[5] 18TB post-RAID (270TB logical)[5] 27TB post-RAID (405TB logical)[5]	9TB post-RAID (135TB logical)[5] 18TB post-RAID (270TB logical)[5] 27TB post-RAID (405TB logical)[5] 36TB post-RAID (540TB logical)[5]	n/a
Wattage	750 W (redundant power supply)	1100 W (redundant power supply)	n/a
Voltage	100 VAC to 240 VAC, auto ranging, 50Hz to 60Hz	100 VAC to 240 VAC, auto ranging, 50Hz to 60Hz	n/a
Heat dissipation	2891 BTU/hr (maximum)	2891 BTU/hr (maximum)	n/a
Regulatory model	E13S Series	E14S Series	n/a
Maximum throughput	7.5TB/hr[6] with RDA (Rapid Data Access); 3.9TB/hr[7]	22TB/hr with Rapid NFS/Rapid CIFS[3] and RDA	1.4TB/hr with RDA or OST[10]
Backup software certifications	Dell AppAssure 5.x (Archive Repository Support only), NetVault Backup, vRanger; CommVault Simpana; Symantec Backup Exec and NetBackup; CA ARCserve; EMC Networker; Veeam; IBM TSM; Oracle RMAN; HP Data Protector; Bridgehead; Amanda, Atempo Time Navigator	Dell AppAssure 5.x (Archive Repository Support only), NetVault Backup, vRanger; CommVault Simpana; Symantec Backup Exec and NetBackup; CA ARCserve; EMC Networker; Veeam; IBM TSM; Oracle RMAN; HP Data Protector; Bridgehead; Amanda, Atempo Time Navigator	Dell AppAssure 5.x (Archive Repository Support only), NetVault Backup, vRanger; CommVault Simpana; Symantec Backup Exec and NetBackup; CA ARCserve; EMC Networker; Veeam; IBM TSM; Oracle RMAN; HP Data Protector; Bridgehead; Amanda, Atempo Time Navigator

[3] *Expected performances when using RDA, Rapid NFS or Rapid CIFS, 10GbE and multiple backup or client server connections*

[5] *All capacity values are calculated using Base 10 (i.e., 1TB = 1,000,000,000,000 bytes). Logical capacity based on overall deduplication ratio average of 15:1.*

[6] *Maximum throughput achieved using Rapid Data Access (RDA) with deduplication at source, 10Gb Ethernet, multiple backup or client servers, and the maximum number of expansion shelf enclosures.*

[7] *Maximum throughput achieved using target side deduplication and eight simultaneous backup clients.*

[8] *Expansion unit must be greater than or equal to size of base unit and requires installation of the required expansion shelf license.*

[9] *Resource requirements: 4 virtual CPU cores, 8 GB RAM, 200GB in addition to VM capacity*

[10] *Throughput achieved for DR2000v using 4 clients x 2 streams*

Edge to Core protection – DR2000v software-based virtual appliance gives you the flexibility to easily protect data residing at local or branch locations

Scalability – Gain more than two Petabytes of logical capacity (based on dedupe ratios of 15:1) with the DR6000

Pay as you grow expansion – Support for up to two (DR4100) or four (DR6000) Dell PowerVault MD1200 expansion shelves (available in 9TB, 18TB, 27TB or 36TB usable capacities after RAID).

media servers connected to a Dell DR Series appliance. They help optimize performance using source-based deduplication and support Symantec OST (RDA for OST), Dell NetVault Backup and vRanger (RDA for NVBU and vRanger), and backup applications using NFS or CIFS (Rapid NFS/Rapid CIFS[2]).

The primary advantage of DR Rapid is it enables the client or media server to be the source of the deduplication process by performing chunking and hash computations before sending unique data blocks to the appliance, thus boosting overall performance.

DR Rapid with Symantec's Open Storage Technology (RDA for OST) supports Symantec Backup Exec or NetBackup. RDA for Dell NetVault Backup enables deeper integration by providing the ability to catalog and log remote copies of data to optimize backup and replication management.

For those backup applications using the NFS or CIFS protocol, DR Rapid includes the industry's first source-side deduplication for NFS and CIFS — Rapid NFS and Rapid CIFS. Similar to the other DR Rapid plug-ins, Rapid NFS and Rapid CIFS sit on either the client servers or media servers and can help boost to as much as 22TB/hour.[3]

Future-proof your data center

The DR Series appliances change the economics of disk-based protection by trimming storage costs, mitigating risk, and reducing complexity in the infrastructure. By accelerating and streamlining the backup process, the Dell DR Series appliances help ensure information restores are delivered in a convenient and accurate manner — in time with business needs.

The deduplication and compression features within the DR Series are cornerstone technologies of Dell's data protection vision. Future products within this architecture will continue to leverage the same deduplication/compression capabilities.

Find the answers

Reduce IT complexity and costs and eliminate inefficiencies by making IT and business solutions work harder for you through Dell Services. The Dell Services team takes a holistic view of your needs and designs data protection solutions for your environment and business objectives while leveraging proven delivery methods, local talent and in-depth domain knowledge for the lowest TCO.[4]

Learn more at dell.com/deduplication

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Dell Software helps customers unlock greater potential through the power of technology—delivering scalable, affordable and simple-to-use solutions that simplify IT and mitigate risk. This software, when combined with Dell hardware and services, drives unmatched efficiency and productivity to accelerate business results. www.dellsoftware.com.

[2] Rapid NFS/Rapid CIFS are available only on the DR6000 at this time

[3] Expected performances when using RDA, Rapid NFS or Rapid CIFS, 10GbE and multiple backup or client server connections

[4] Availability and terms of Dell Services vary by region. For more information, visit www.dell.com/servicedescriptions

Dell Software
5 Polaris Way, Aliso Viejo, CA 92656 | www.dell.com
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