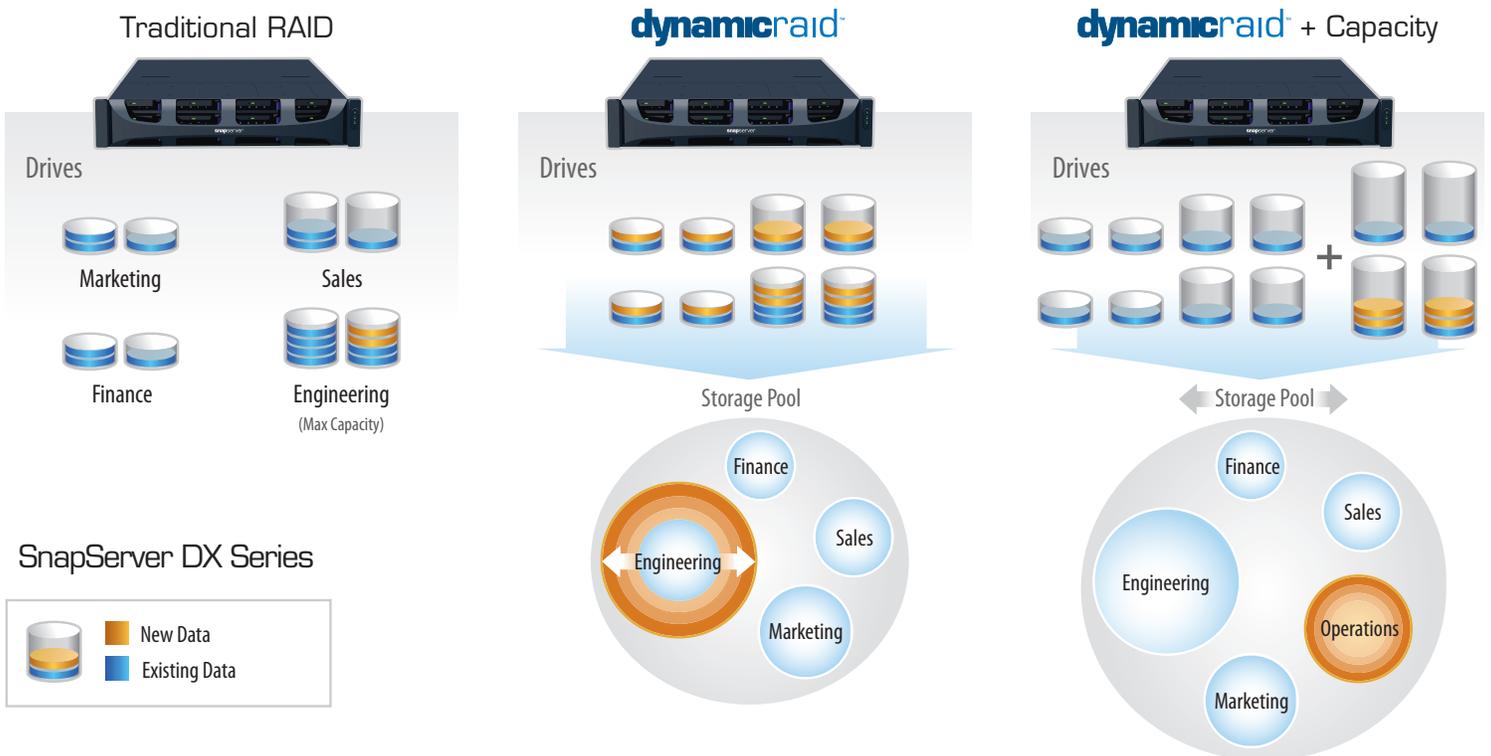# SnapServer DynamicRAID

RAID technology has become ubiquitous among storage systems for data protection and business continuity. Traditional RAID levels such as RAID 5 and 6 have made data protection easy from an IT perspective; however the provisioning of a traditional RAID array can create difficulties during RAID expansion and volume management. Overland Storage introduces the next generation of RAID technology with the SnapServer DX Series and DynamicRAID; storage that you do not have to provision.

Based on existing RAID technologies, DynamicRAID streamlines the storage management experience. Simply choose DynamicRAID with single or dual parity during SnapServer initial configuration, insert hard drives and the SnapServer will automatically configure the RAID array and optimize the parity according to the number of drives inserted into the system. The added hard drives will create a usable storage pool that can be divided into volumes for different applications or user groups.

In traditional RAID, storage volumes are linked to individual RAID sets, limiting their capacity to grow and require manual intervention to keep pace with provisioning needs. The SnapServer DX Series NAS volumes are virtual; meaning they can be managed independently of the physical storage. All of the volumes created on the SnapServer share the capacity of the storage pool and can be resized dynamically at any time, or set without any limits at all. Optionally, the SnapServer volumes can have quotas that can be adjusted at any time to limit capacity to individuals, groups or applications. To add storage space when volumes are near capacity, simply add new hard drives or replace smaller capacity drives with larger capacity drives, and the storage pool will immediately increase in size, causing the overall capacities of the volumes to increase as well.

With DynamicRAID, adding drives to existing SnapServers is easy. Insert drives and add them to an existing DynamicRAID array with availability in seconds. Mix and match drives of differing sizes and integrate them into an existing array without losing valuable space due to drive size mismatches. Optionally, migrate between single and dual parity allowing for more usable space, or more data redundancy.

Traditional RAID

Drives

Marketing   Sales

Finance   Engineering
(Max Capacity)

SnapServer DX Series

New Data
Existing Data

dynamicraid

Drives

Storage Pool

Finance

Sales

Engineering

Marketing

dynamicraid + Capacity

Drives

+

Storage Pool

Finance

Sales

Engineering

Operations

Marketing

Take advantage of the DynamicRAID features of the SnapServer DX Series and let the SnapServer optimize the storage in your IT environment and provide many future growth options for expanding networks.

DynamicRAID Vs. Traditional RAID

FEATURES	DynamicRAID	Traditional RAID
RAID Levels	Single-Parity; Dual-Parity (Parity can be changed Dynamically)	RAID 0, 1, 5, 6 and 10 (Change in RAID requires RAID deletion and recreation)
RAID Creation	Automatic (after selection of single- or dual-parity protection and snapshot reserve space)	Manual (must select drives and RAID level)
RAID Expansion	Add new drives to existing DynamicRAID arrays	N/A
Mixed Drive Capacities	Additional capacity on drives can be utilized (within the constraints of single- or dual-parity protection)	Additional capacity on drives is not utilized (only the capacity of the smallest drive in a RAID set is used)
Mixed Drive Types	All drives in a given Storage Pool must be homogeneous (All SATA or All SAS 15K)	Drives of different types can be mixed in a head unit or expansion unit (with different RAID sets and volumes)
Dynamic Volumes	Volumes grow and shrink on demand	N/A
Snapshots	Snapshots are by Storage Pool and can be mounted for individual file recovery	Snapshots are by volume; can be mounted for individual file recovery; and used for volume roll-back
Volume Size	Limited by the Storage Pool inside a single SnapServer chassis	Limited by the storage in the head unit and all expansions
Quotas	Quotas can be specified by Volume	User and Group Quotas supported by Volume

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