signal65

PERC Hardware RAID Evolution

Performance Revolution for Dell PowerEdge Servers

PERC 11 to PERC 13: Transforming Enterprise Storage Performance

PERC 11 Series		PERC 13 Series	
Read IOPS	3.0M	Read IOPS	12.9M
Write IOPS	240K	Write IOPS	2.6M
Read Bandwidth	14.4 GB/s	Read Bandwidth	56 GB/s
Write Bandwidth	5.1 GB/s	Write Bandwidth	51 GB/s
Write Latency	200+ µs	Write Latency	6 µs
Rebuild Time (9TB)	12 hours	Rebuild Time (9TB)	1.5 hours
Rebuild IOPS	43K	Rebuild IOPS	9.8M

Key Performance Improvements

4X Read Performance Boost

11X Write Performance Improvement

33X Faster System Responsiveness

227X Better Rebuild Perfromance

8X Faster RAID Rebuild Time

Data Preparation

Ingesting: High BW Write

Cleaning: High BW Read, High IOPs Write

Model Training

Feeding GPUs: High BW and High IOPs Reads

Checkpointing: High BW Write and Read

Model Inference

Loading Models: High BW Read

Vector Database: High IOPs Read

Critical Advantages for Mission-Critical Applications

Rebuild Performance Excellence

227X improvement in rebuild IOPS (43K ▸ 9.8M) ensures business continuity during drive failures with minimal performance impact on production workloads.

Ultra-Low System Responsiveness

33X latency reduction (200µs ▸ 6µs) enables real-time application performance critical for AI inference and high-frequency trading systems.

Executive Summary

PERC 13's revolutionary rebuild performance and system responsiveness make it the definitive choice for mission-critical applications where downtime costs thousands per minute and microsecond latencies directly impact business outcomes.

Source: Signal65 Performance Analysis, February 2025

Test Configuration: Dell PowerEdge R7725, 16×3TB NVMe drives, 4×RAID 5 volumes

Visit signal65.com for a more detailed breakdown and full report.

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