DELL Technologies

The New Data Era Demands Solutions for Energy Efficiency and Sustainability

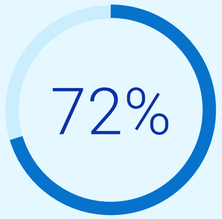
How Dell storage innovations are leading the way

Get Started

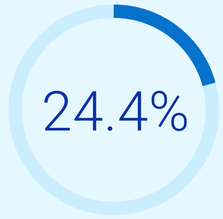
Data is essential

Data continues to grow at an unprecedented rate. Your future competitiveness depends on how quickly you can harness data to propel innovation.

In an era where AI and rapid technological advancements redefine every sector, the demand for energy-efficient storage has never been more critical. Dell innovative storage solutions step up to meet unprecedented challenges in sustainability and resource management. Discover how Dell Technologies is leading the charge in transforming energy efficiency so you can thrive in a smarter, more sustainable future.



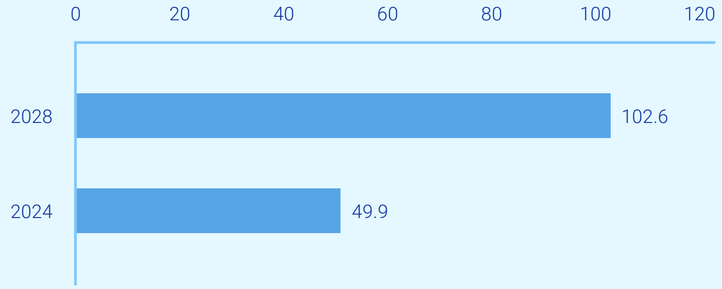
of organizations globally have adopted AI.[1]



data growth rate from 2023 to 2028[2]

2X

increase in storage power demand by 2028[3]



Global energy consumption of storage systems (TWh)

Dell Technologies is a leader in energy-efficient and sustainable technology

Dell Technologies is the leader in energy-efficient IT solutions with more certified ENERGY STAR® and EPEAT platforms than the competition.[5]

Dell Technologies is reducing their carbon footprint so you can reduce yours

Dell Technologies currently invests in sustainable materials, works with responsible supply chain partners and is lowering energy intensity to reduce its product carbon footprint.

Improve your energy efficiency without compromising performance

Dell Technologies has reduced its energy intensity by 76% across its entire portfolio since 2013, including an 83% reduction in Dell PowerEdge servers.[6]

Advanced thermal and airflow innovations lower cost at scale

Dell SmartCool options can significantly reduce overall data center thermals, while Dell SmartFlow technology optimizes airflow through PowerEdge servers, resulting in increased airflow and reduced fan power by up to 52%.

Advanced data reduction technologies lower costs, guaranteed

Dell data-reduction technologies lead the industry with 5:1 guarantees for Dell PowerStore and Dell PowerMax and up to 55:1 for Dell PowerProtect Data Domain, drastically reducing power, cooling and hardware needs.

Sustainable options to offload operations with cloud services

With Dell APEX, users can host solutions in colocation facilities powered by 96% renewable energy.[4]

Sustainability meets innovation with Dell storage

As workloads continue to grow in complexity and size, the energy consumption required to support them has become a pressing concern.

3.5%

of global CO_2 emissions attributed to data centers today[7]

550% increase in AI energy demands projected by 2026[8]

Energy-efficient storage for increased data demands

Market leaders will be those who adopt sustainable and efficient solutions to minimize the environmental impact of data-intensive workloads.

Up to 85%

of a data center's carbon footprint is IT equipment.[7]

Up to 30%

of system power is storage utilization.[9]

64%

of organizations manage at least one petabyte of data.[10]

41%

of organizations manage at least 500 petabytes of data.[10]

Advance energy-efficiency goals with Dell storage

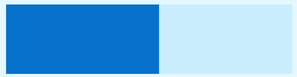
Explore new possibilities in sustainable storage solutions

Energy-efficient storage solutions from Dell Technologies lead the way in tackling challenges from rising energy costs and demands.

PowerStore

Up to 2X

better DRR compared to a major competitor's platform[13]



54% less energy than a major competitor's platform to store the same-size data set[13]

Lower power costs: Daily power costs about the same as your morning latte.[14]

30% more performance[11] and 28% more TBe per watt[12] for dramatic increases in energy efficiency and density.

fewer watts per TBe than a major competitor[15]

Industry's best 5:1 data-reduction guarantee[16]

PowerMax

5:1 data-reduction guarantee[18]

Up to $207K in electricity cost savings[21]

#1 most energy-efficient mission-critical storage in the industry[17]

82% reduction in carbon footprint[20]

80% power savings per terabyte[22]

Up to 2.8X more performance per watt[19]

The industry's **most comprehensive** power monitoring solution for mission-critical storage[23]

PowerProtect

55:1 data reduction guaranteed[24]

Achieve 50% more storage capacity

through advanced virtualization technology, utilizing only half the floor space.[25]

Dell Technologies is leading the charge with energy efficiency transformation

30% reduction

in absolute emissions associated with the use of sold products[26]

Five actions you can take now to optimize energy efficiency and sustainability

1. Audit your infrastructure environment to identify where to accelerate replacement.
2. Consolidate and optimize with modern infrastructure and data reduction to reduce the quantity of systems and the power and cooling requirements.
3. Gain sustainability insights: Reporting, assessments and services provide insights for evaluating and creating a more sustainable IT environment.
4. Leverage inherent sustainable capabilities to better manage, control and optimize energy efficiency and power consumption.
5. Embrace technology upgrades with circularity in mind. Use and retire assets responsibly by promoting reuse and recycling to minimize waste. Our asset recovery services simplify the secure and responsible retirement of legacy IT equipment, unlocking value for future innovation.
6. Contact your sales representative to assess your sustainability goals. Ask about your Get Efficient Assessment today.

Work with an experienced and established leader in technology and energy efficiency, such as Dell Technologies, to help you achieve your sustainability goals.

Learn more

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[1] Quantum Black AI by McKinsey, The state of AI in early 2024: Gen AI adoption spikes and starts to generate value, May 2024.

[2] IDC WW Global DataSphere Structured and Unstructured Data Forecast, 2023–2028.

[3] IDC estimates that the energy consumption from the enterprise storage systems in data centers will double in 2028 compared to 2024. Source: IDC, Datacenter Trends: Sustainable Builds and CO2 Emissions, 1H24 Readout, August 2024.

[4] Equinix, Clean and Renewable Energy, accessed October 2024.

[5] Based on Dell internal analysis, 2024.

[6] Building a more sustainable data center with Dell.

[7] Data Center Post, Tackling Data Center Scope 3 Emissions: The Path to a Sustainable Future, September 2023.

[8] MarketWatch, AI could demand a shocking amount of electricity — check out this chart, May 2024.

[9] C&C Technology Group, Understanding Data Center Energy Consumption, June 2023.

[10] AvePoint, AI & Information Management Report, 2024.

[11] Based on Dell analysis comparing maximum IOPS per Watt for PowerStore 1200 base appliance configurations with PowerStoreOS 3.0 vs. PowerStore 1000 base appliance configuration with PowerStoreOS 2.0. Actual results may vary.

[12] Based on comparing maximum effective PowerStore capacities of 4:1 versus average 5:1 data reduction. Actual results may vary. Refer to Power Sizer for capacity data in your environment.

[13] With Dell PowerStore 1200T. Based on Prowess Consulting Report, commissioned by Dell, May 2024, comparing Dell PowerStore 1200T to a similarly configured storage platform from a major competitor, using Vdbench. Actual results may vary.

[14] Estimate based on Dell analysis using Dell PowerStore 3200Q base appliance power consumption (1056.4 W) and an average electricity price of $.173 per KWH. Source: Electricity per KWH in U.S. city average from U.S. Bureau of Labor Statistics, data accessed in February 2024. For estimation purposes only. Actual costs will vary depending on actual product configuration, usage, operating conditions, power management settings and other factors.

[15] Based on Dell analysis using publicly available specs, May 2024. Estimates comparing maximum effective capacity and peak power consumption for PowerStore 1200 base appliance only (1294 TBe; 1271W) versus Pure Storage FlashArray //X20R4 (314 TBe; 1196W) at data reduction ratios of 5:1. Actual results will vary depending on actual product configuration, usage, operating conditions, power management settings and other factors.

[16] 5:1 average rate guaranteed for reducible data across customer applications. Rates for individual applications may vary. See Future-Proof Program terms and conditions for details.

[17] Based on Dell analysis of published product specs and features impacting power usage of Dell PowerMax versus competitive mainstream arrays supporting open systems and mainframe storage operating at 8PBe, August 2024.

[18] Based on Dell Future-Proof program that offers 5:1 data reduction guarantee based on PowerMax data reduction tools (dedupe and data compression) for open systems storage, August 2024. See terms and conditions for details. Actual data reduction rates will vary. Storage Data Reduction Guarantee: Applicable products include All-Flash Storage products as indicated in the Terms and Conditions. Requires minimum purchase of ProSupport for Infrastructure 4hour or NBD support agreement, a ProSupport Plus for Infrastructure support agreement, a ProSupport One for Data Center 4-hour or NBD support agreement or a valid support contract with a valid Dell support partner. For more information contact your Dell sales representative.

[19] Based on Dell internal testing comparing IOPS per watt for PowerMax 2500 compared with PowerMax 2000 using the 8K random writes workload, August 2024. Performance per watt will vary.

[20] Based on Dell internal analysis of total CO2 emissions over five years for PowerMax 2500 at 8PBe (5kW) versus 6 PowerMax 2000s at 8PBe (27.5kW), April 2024. Calculations are from the U.S. EPA CO2e formula. Actual CO2e reduction will vary..

[21] Based on Dell internal analysis of total electricity cost savings over five years operating PowerMax 2500 at 8PBe (5kW) versus 6 PowerMax 2000s at 8PBe (27.5kW) using $.21 per kWh (U.S. EIA April 2024 report, California Commercial rate). April 2024. Actual cost savings will vary.

[22] Based on Dell internal analysis comparing power (kVA) per effective terabyte of the PowerMax 2500 compared with the PowerMax 2000, April 2024.

[23] Based on Dell internal analysis of the power monitoring capabilities of Dell PowerMax versus the power monitoring capabilities of competitive mainstream arrays supporting open systems and mainframe storage, August 2024.

[24] Storage Data Reduction Guarantee: Applicable products include All-Flash Storage products as indicated in the Terms and Conditions. Requires minimum purchase of ProSupport for Infrastructure 4hour or NBD support agreement, a ProSupport Plus for Infrastructure support agreement, a ProSupport One for Data Center 4-hour or NBD support agreement or a valid support contract with a valid Dell support partner. For more information contact your Dell sales representative.

[25] DD9900 allows for 1.5PBu capacity in a single rack compared to two DD9800s needed for 1PBu.

[26] Dell ESG report, FY2024.