## Dell PowerScale vs. Qumulo Core

### Dell PowerScale

- **Scale-out** up to 252 nodes and 186PB¹ capacity
  - Up to 2.5x greater node scale-out and up to 5x greater raw capacity scale-out to support massive unstructured data growth and infrastructure consolidation.

- **Adaptable data resiliency**
  - Data protection levels across the cluster can be custom-tailored to workloads and data lifecycle to help improve data efficiency.

- **Uptime tolerance for up to four node failures**
  - Tolerance of up to four simultaneous node failures enables robust availability as clusters scale to multi-PB range.

- **Comprehensive in-line data reduction**
  - Capabilities for zero block removal, in-line deduplication, and in-line compression result in smaller storage footprint, which can reduce power and cooling requirements and lower overall per-TB storage cost. Also, by reducing the amount of physical data written to storage devices, in-line data reduction helps to reduce flash-drive wear rates and extend the life of solid-state media.

- **API-integrated cyber-security**
  - Ransomware Defender offers real-time event processing with user behavior analytics and automated actions to help detect and halt ransomware attacks. Integrated operational airgap cyber-vault capabilities help to isolate recovery data from attackers.

- **Automated tiering of cold or infrequently accessed data to cloud archival repositories**
  - Policy-driven tiering extends PowerScale namespace to any S3-compatible cloud archival repositories, enabling a single, intelligent framework for managing both active and inactive data. Archive data in the cloud is still visible and retrievable from within PowerScale OneFS.

- **Flexible incremental cluster scaling**
  - Capability to non-disruptively add or remove nodes as well as retire and re-purpose nodes. Ability to seamlessly mix node types and generations within a cluster.

- **Adaptable, multi-level data resiliency within a cluster**
  - Data protection levels can be custom-tailored to workloads and policy-managed to adapt to data lifecycle so data resiliency and data efficiency can be concurrently optimized within a cluster.

### Qumulo Core

- **Scale-out** up to 100 nodes and 36PB capacity
  - Limited scale constrains ability to support growth and infrastructure consolidation.

- **Unchangeable data resiliency**
  - Fixed and homogeneous data protection levels across the cluster can decrease data efficiency.

- **Uptime tolerance for just one node failure**
  - Tolerance of only one node failure results in less robust availability as clusters scale.

- **No data reduction**
  - No capabilities for zero block removal, deduplication, or compression.

- **No API-integrated cyber-security**
  - Reliance on outside software providers for cyber-security can add complexity and cost.

- **Manual copy of cold or infrequently accessed data to cloud archival repositories**
  - No policy-based capability to tier inactive data to cloud S3 archival repositories. Manually copying data to S3 archival storage (only AWS is supported) can be labor-intensive at scale. Archival data copied to cloud S3 repositories is not visible or retrievable from within Qumulo Core.

- **Limited cluster scaling flexibility**
  - No software capability to non-disruptively remove nodes or retire and re-purpose nodes.

- **Homogeneous data resiliency level within a cluster**
  - Just one data protection level can be enabled in a cluster, which can force compromise between data resiliency and data efficiency.

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¹ Capacity available in PowerScale F900. Maximum cluster capacity varies by model.

Comparison based on publicly available information, July 2022.

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