



Solution Brief

Microsoft Analytics Platform System by Dell

- Up to 100X performance increase over SMP database architecture
- Appliance that offers SQL Massively Parallel Processing (MPP) + Hadoop (optional) in one solution
- Scale from 21 TB to 6 PB
- Highly available and fault-tolerant design
- Implementation, training and enablement services available to jumpstart your production workloads

Built for Big Data, offering next-generation performance at scale and engineered for optimal value

Organizations that have highly demanding data warehousing workloads want a comprehensive and economical solution to meet their Big Data and business intelligence needs. Microsoft and Dell have partnered to offer such a solution: the Microsoft Analytics Platform System by Dell. The Analytics Platform System (APS) includes Microsoft SQL Server Parallel Data Warehouse (PDW) software and Polybase for integration of Hadoop data on a certified hardware platform, as well as robust tools for aggregating, managing and querying data at blazing speed. Microsoft and Dell offer a unified support model, with Microsoft acting as your single point of contact for all patches, upgrades and issues.

This complete data warehousing solution spans desktop systems, data marts and the enterprise data warehouse—all while operating seamlessly with Microsoft business intelligence tools.

Scalable and affordable power

Dell custom builds your APS appliance with the number of nodes (up to 54) and the types of disks that meet your requirements. The solution is configured and installed for you in your data center.

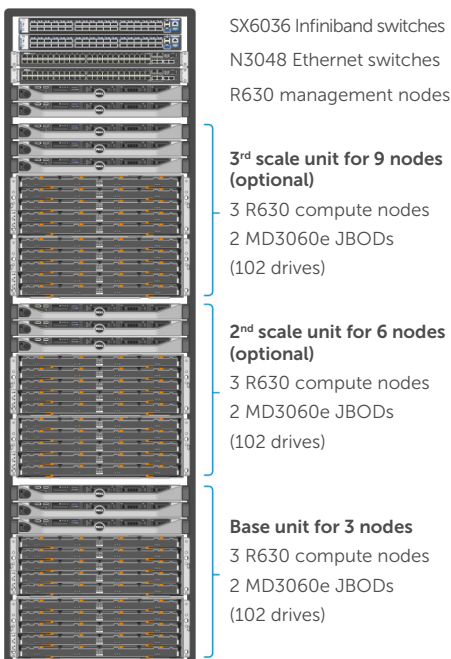
Based on the newest 13th-generation Dell PowerEdge servers, the Dell APS appliance meets your needs for built-in redundancy and high performance with low energy consumption. Each multiprocessor server node is specifically designed to provide optimal performance with minimal requirements for physical space, power and cooling. Storage nodes in the Dell APS appliance offer enterprise performance at low cost.

Simplified data warehousing

Through extensive co-engineering and testing, Microsoft and Dell together are providing powerful and efficient data warehousing and Hadoop solutions on a certified hardware platform.

Key features

- **Dell design:** The Dell appliance is based on Dell PowerEdge R630 servers that have as many as nine compute nodes per rack and can scale to as many as six racks. Raw disk capacity scales easily from 21 terabytes to 1.2 petabytes, or up to 6 petabytes compressed. Dell has designed the entire appliance with robust redundancy throughout for high availability. Each scale unit is composed of three compute nodes to provide the most fault-tolerant Analytics Platform System solution currently available
- **One-call comprehensive support:** Customer support calls go to Microsoft APS Support. Microsoft communicates with Dell for hardware solutions through a specialized Dell warranty queue to resolve issues quickly.



- **Symmetry with SQL Server:** Microsoft has added features to unify the query and administrative experiences of the Analytics Platform System with those of SQL Server 2014 Enterprise Edition.
- **Complete business intelligence solution:** With the Analytics Platform System, you can use familiar tools such as Microsoft Excel, Report Builder and Power View to create compelling visualizations for making important business decisions.
- **Ready to use:** As a prebuilt appliance with optimized software, APS by Dell allows organizations to focus on developing solutions rapidly rather than building their environments from scratch.
- **Easy data management:** The Analytics Platform System integrates with SQL Server Integration Services, allowing data architects to use a familiar ETL tool to move data into the appliance.

Technical implementation

The technical implementation and capabilities of the Analytics Platform System have been greatly enhanced to take advantage of Windows Server 2012 platform capabilities.

Non-relational data support

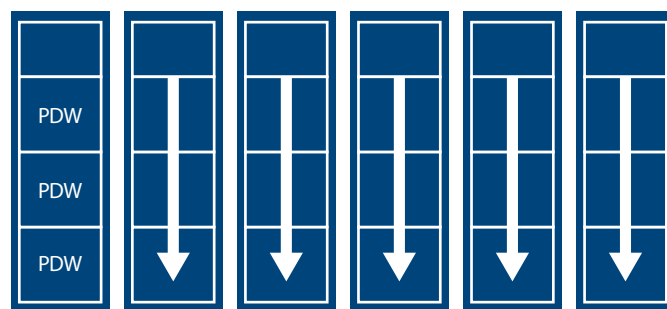
PolyBase is the next-generation execution engine for querying, transforming and indexing relational data and non-relational Hadoop data. PolyBase seamlessly manages data where it originates and allows for SQL language-based queries of data stored in SQL Server and Hadoop clusters, on-premises or in the cloud.

Software architecture

- **In-Memory Columnstore:** The Analytics Platform System uses In-Memory Columnstore, which reorients data in a column rather than in a traditional row store to deliver next-generation performance (as much as 100 times faster) and higher compression of data (as much as 15 times greater).
- **Massively parallel processing:** The Analytics Platform System uses the SQL Server PDW massively parallel processing (MPP) engine. Through parallel execution, the MPP shared-nothing architecture provides the highest performance at scale and can accommodate a high rate of concurrency during complex query processing.

Summary

Microsoft and Dell make it easier to deploy a complete data warehousing solution that meets an organization's most complex Big Data and business intelligence needs. The APS by Dell appliance is prebuilt with software, hardware and networking components already installed. This solution provides high-speed parallel query processing, highly scalable data storage, integration with Hadoop and high-speed data transfer for the most demanding data warehousing workloads.



21 TB → 6 PB

Scaling out with Analytics Platform System

Dell Value Add with APS

Expert services to get you started

- **Dell Basic Jumpstart Services for APS:** We provide training on the appliance and an architectural design and implementation roadmap, along with lab sessions to demonstrate these principles using your data.
- **Dell Enhanced Jumpstart Services for APS:** We build on the Basic Jumpstart Services to explore migration from another platform, integration of data from disparate sources, query optimization between APS and Hadoop data or advanced analytics and data visualization for your end users.

Dell Statistica

Derive insights from the relational and non-relational data stored on APS and other sources to analyze, manage, visualize and mine data with Dell Statistica, which simplifies predictive modeling and can turn data into your biggest competitive advantage.

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To learn more about the Microsoft Analytics Platform System by Dell, visit dell.com/microsoft

