

## Advance your retail data strategy

Use all your data to redefine your delivery models — omnichannel and in-store experiences and more — with Microsoft data platform and Dell Technologies infrastructure



From brick and mortar shops to malls, direct-mail catalogs and e-commerce, the retail experience has evolved dramatically over the years. If customers aren't literally walking through the front door of your store, they're entering virtually via their phones, tablets or PCs — especially in today's environments. An evolving retail market has transformed the customer's shopping experience and your understanding of your customers, including what you can do with this information.

But there's still more to do. While retailers use new technologies to streamline the customer's omnichannel shopping experience, you're also working to differentiate your business and create value through unique delivery models — such as curbside pickup, buy online and pick up in store (BOPIS), and other delivery models.

Similarly, the in-store experience is evolving as retailers branch out to offer customers more, with offerings like wellness services or fulfillment services. You may also be exploring new innovations like smart shopping carts or unique selling models such as retail as a service (RaaS).

In the process of transitioning from product- to customer-centric organizations, many retailers have learned that customer data can translate into critical information that sheds light on personal buying habits, unique preferences and distinct shopping patterns — information that ultimately provides deeper insights for the business.

Much of this information comes from Internet of Things (IoT) and the plethora of mobile devices, scanners, sensors, track and trace, and other retail-specific or supply chain innovations. At the same time, point of sale (POS) is not solely about the purchase. Retailers are collecting a wealth of information with each and every transaction. This information is aggregated, analyzed and used for inventory replenishment, forecasting and a range of other business-critical use cases.

Retailers are also focusing on their employees — working to improve their experience through analytics. Advancements in real-time scheduling or inventory automation free employees to further focus on the customer. It's a win-win situation for all.

Of course, data is at the heart of these examples. Retailers that can harness more of their data and make use of it in innovative ways — while ensuring compliance with the Payment Card Industry Data Security Standard (PCI DSS) and other data regulations — will ultimately have the upper hand. In fact, many retailers are already synthesizing data to inform decision making around margins, product shrinkage, end-of-aisle displays, supply chain efficiencies, inventory optimization and more.

As data volumes rise and different types of structured and unstructured information proliferate in the data center core — and at the edge — retail organizations like yours look for a versatile infrastructure option that can support and optimize the management of **all data**.

## Gather insight from all data with Microsoft SQL Server

Microsoft® SQL Server® is a proven solution in the core and at the edge, where many retailers operate. As data continues to grow and proliferate, it's getting harder and harder to rein in disparate data sources. It's why more retailers are looking for ways to ingest data from multiple sources/formats to gain greater understanding. Microsoft SQL Server 2019 enables you to access the data, wherever it resides, without having to perform inefficient, time-consuming and risky extract, transform and load (ETL) processes. Data virtualization using **SQL Server PolyBase technology**, which accesses and combines both relational and non-relational data residing in different locations, is helping to make that possible.

Data virtualization is the process of abstracting data — rather than copying or moving it — from different sources, locations and formats into a single accessible layer. As data sets grow larger, and it becomes harder to copy or move them around, hitting that data in place is the best option. Administrators can query that information in near real time from a single, unified interface. It's changing the way retail organizations access, ingest and manage their information.

Technology advancements in SQL Server 2019 help simplify and unify your data management platform, providing analytics, resources and insight over all data from a common interface. **SQL Server 2019 Big Data Clusters (BDC)** is a unified big data platform that combines SQL Server, Apache® Spark® and HDFS across a cluster of Kubernetes® nodes. This new architecture includes support for Linux® OSs, database containerization and PolyBase technology.

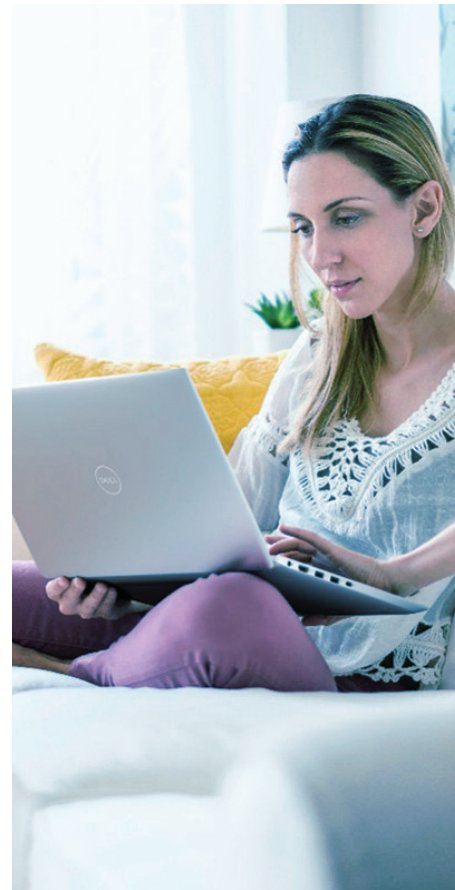


## Dell Technology solutions — optimized for SQL Server and your environment

Data is a precious commodity. With so many critical applications running on SQL Server, you want to make sure your underlying architecture is up to the challenge.

Dell Technologies has the compute, storage, networking and data protection solutions optimized to run Microsoft SQL Server plus consulting services to make it happen. More importantly, these solutions are designed to support your technology environment and business needs today and well into the future.

- The **Dell EMC PowerEdge server family** is the bedrock of the modern data center. Highly adaptable for seamless scaling and equipped to meet real-time analytics and business intelligence demands, PowerEdge delivers optimal experience without excessive overhead. Every PowerEdge server includes end-to-end security spanning the IT security lifecycle from the firmware/hardware level. PowerEdge servers with Intel® Optane™ Persistent Memory can help reduce latency and accelerate insights from the massive amounts of data retail companies manage today — improving the overall customer and researcher experience. PowerEdge servers also utilize Intel Trusted Execution Technology (Intel TXT), which further enhances the built-in securities capabilities by helping to protect against software-based attacks and preserve the confidentiality and integrity of data.
- **Dell EMC storage solutions**, which leverage Intel Xeon® Scalable Processors and Dual Port Intel Optane SSDs, can be right-sized for performance and capacity at initial deployment and scale to meet future needs. This includes inline data efficiencies and integrated copy data management, which provides orchestration and self-service for DBAs.
- **Dell EMC Data Protection solutions** eliminate the complexity of traditional backup software. This makes it easier for SQL Server administrators to protect data and manage backup requirements on their own terms, leveraging the most trusted backup storage software and infrastructure on the market today.
- **Dell EMC Open Networking solutions**, powered by Intel Xeon Scalable processors, are designed for highly distributed SQL Server environments. Our full line of Ethernet switches and software delivers the performance, flexibility, scalability and connectivity required to help enhance the customer experience and enable the collection of data distributed across the data estate — from edge to core to cloud — enabling organizations to query SQL instances from any location.



When supported by a Dell Technologies infrastructure optimized for SQL Server BDC, retailers can deploy scalable Kubernetes clusters using Spark, HDFS containers with Kubernetes, and SQL Server. With Dell EMC Container Storage Interface (CSI) plugins, you can deliver secure, isolated virtualized containers quickly and easily while simplifying provisioning, management and orchestration of container storage. The CSI connections for block and file storage systems allow extensible, secure and reliable data service persistency for big data workloads on containers.

We offer the flexibility and choice to design a solution that aligns with your strategy — whether that's bare metal, a virtualized or containerized environment, on-premises, or as a hybrid cloud. And, with an eye to the future, our solutions are designed to scale as your organization grows and enable you to take advantage of technology enhancements down the road.



## You're never alone with Microsoft, Intel and Dell Technologies

Take your understanding of customer information to the next level. Leverage your data simply, quickly and accurately. Explore exciting new use cases. And push the envelope further in retail.

You do not have to embark on your SQL Server modernization journey alone. Dell Technologies and Microsoft have partnered for over 30 years — from joint development to solution validation to customer support. We have the breadth and depth — from edge to core to cloud — with the services expertise needed to support you every step of the way.

Together, Intel and Dell Technologies are driving innovation and next-generation capabilities with the broadest portfolio of trusted client and enterprise solutions for cloud and data management — enabling businesses to move faster, innovate more, and operate efficiently.

Dell Technologies Consulting Services and data-centric specialty teams can help you plan a solid, foundational set of goals and develop a roadmap for modernization. Our industry experts offer strategic guidance and proven practical capabilities to help you accelerate time to value of your SQL Server objectives. Our team can help your organization meet its full potential with a data strategy designed to meet you where you are, on any platform, with the tools and languages of your choice.

## Contact us today

Discover the advantages of SQL Server 2019 and how Dell Technologies solutions can move you closer to a data strategy that benefits the customers you serve, your daily retail operations, and your overarching business goals.



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