Sales Guide

Better Microsoft SQL Server® Solutions with Lenovo

Purpose

This sales guide is designed to help sales professionals effectively position and sell Lenovo database solutions for Microsoft SQL Server. Business discovery questions, value proposition, and key benefit messaging will help you position Lenovo's solutions and effectively target and qualify leads. Use this guide in tandem with other sales enablement assets, including the Sales Playbook, FAQ, Conversation Card, and Customer Deck.

In addition to all-up value differentiation, the guide steps you through the components and qualifying process for two sales opportunities: Data Warehouse and Online Transaction Processing (OLTP) solutions.

Call to Action

+ Identify target accounts with your Intel BDM to present Lenovo/Intel Select SQL Server OLTP solutions
+ It is highly likely that customers and prospects you work with have deployed SQL Server to some degree. Reach out to all of them to discuss their plans to move to SQL Server 2017
+ Learn what your customers' plans are regarding SQL Server 2008 (extended support ends on July 9, 2019)
+ Upsell opportunities from SQL Server engagements: Expand data conversation beyond database to Big Data and ThinkAgile SX for Microsoft Azure Stack

With more than 50% of SQL Server customers running 2008 R2 or older, and with extended support for these customers ending in July 2019, now is the ideal time to talk to customers about modernizing database servers and services. Piggyback on Microsoft business transformation initiatives targeting SQL Server customers running legacy versions of SQL Server (driving SQL Server 2017 migrations), plus target opportunities to upsell Big Data and MS Azure Stack for Hybrid Cloud services.

Lenovo

Our Customer Story

The rapid growth of technology, and the proliferation of mobile devices, has resulted in unprecedented growth in data and online transactions. As the volume and velocity of data increases, extracting meaningful insight in a timely manner and supporting online transactions has become more complex. Opportunities are being missed and effort is being wasted. To compete, businesses in the 21st century are demanding the tools to derive true value from their data.

Lenovo Database Solutions for Microsoft SQL Server bring together the right mix of hardware infrastructure, software, and services to optimize a wide range of data warehouse and transactional database use cases. The configurations integrate a variety of Lenovo ThinkSystem servers, storage, and infrastructure products combined with the capabilities of Microsoft SQL Server 2016/2017 Enterprise and Standard Editions to provide the following benefits:

+ Improved time to value with pre-tested hardware configurations
  + Microsoft Data Warehouse Fast Track
  + Intel Select SQL Server OLTP
+ Optimized SQL Server deployment with a significant reduction in hardware testing and tuning
+ Reduced total cost of ownership through better price and performance, rapid deployment, and advanced hardware
+ Consolidated storage and matched IT investment-to-information-value with several high-performance storage options

What trends are driving demand for modern database servers and services?

Total server and storage revenue for RDBMS (Relational Data Base System) workloads, like SQL Server, grew by an estimated $9.1B in 2016 to $9.9B in 2017. Server revenue grew from an estimated $3B to $3.2B, and storage revenue from $6.1B to $6.7B in that timeframe. It's estimated that 37% of WW database servers run Microsoft SQL Server, with **>50% running SQL Server 2008 R2 or older.** Additionally, it is estimated that SQL Server will become the most popular enterprise database in 2018 (source).

Databases are still being deployed on-premises for performance and business-critical requirements

Customers running Windows-based servers are also likely running SQL Server databases.

+ SQL Server's ease of use, availability, and tight integration with the Windows operating system makes it an easy choice
+ SQL Server 2017 helps enterprises build mission-critical applications with high-performance, in-memory security technology across OLTP (online transaction processing), data warehousing, business intelligence, and analytics

End of support means no access to critical security updates

Extended support for SQL Server 2008 R2 ends on July 9, 2019.

+ Opens the potential for business interruptions and can also mean higher maintenance costs
+ Maintaining legacy servers, firewalls, intrusion systems, and other related systems quickly becomes expensive
+ When support ends, the customer's organization will likely fail to meet regulatory compliance

Factors that drive investments in updated database servers and services

+ Extended support for SQL Server 2008 R2 ends on July 9, 2019
+ Exponential data growth, straining business infrastructure
+ 24 x 7 RAS requirements
+ SQL Server proliferation
+ Demand to leverage existing SQL Server tools but expand to new data sets
+ The need to implement or scale a data warehouse quickly

Start a Conversation about SQL Server Solutions

Lenovo's solutions for Microsoft SQL Server solutions benefit nearly any SMB, medium-sized organization, or large enterprise across verticals. For example:

+ **Healthcare** organizations can benefit from significant **improvements in business transactions**, such as extreme performance that meets SLA requirements by retiring traditional HDD-based SAN
+ **Media and broadcasting** can benefit from **high-density database consolidation**, reducing data center costs
+ **Retail** can accelerate **business analytics** by combining Microsoft SQL Server and Lenovo high-end servers

Stakeholders and buying triggers

During your conversations with the stakeholders identified below, focus your conversation on the areas they are concerned about.

Chief Data Officer (CDO) and CIO

+ Driving new solutions for value and revenue generation across the entire business
+ Standardization and centralization of data governance and polices
+ Data security and trust

BDMs (Business Analysts, VPs, GMs)

+ Platforms that deliver business outcomes and fast ROI for their segments
+ Established business leadership through innovation
+ Solutions tailored to their vertical

Data Engineers

+ Best in class and established products
+ Scalability and ease of integration
+ Overall platform and its future
+ Skill set
+ Familiarity with OSS

DBAs

+ Capacity planning, installation, configuration, database design, migration, performance monitoring, security, troubleshooting, backup and data recovery
+ Long-term viability and compliance
+ Ensuring database products meet basic enterprise needs

App Dev Leads

+ Agility
+ Developer productivity
+ Leveraging existing skills, tools, and processes
+ Adopting new cutting-edge technologies to create new experiences

Enterprise Architect

+ Long-term viability and maintainability of code/platform
+ Integration and interoperability
+ Technical architectures, features

Qualifying Questions

Your line of questions can help pinpoint the set of solution components that best fit the prospect's needs. Here are a few suggested starter questions you can ask business and technical stakeholders. Reference the Sales Playbook for a detailed set of qualifying questions.

Steer the conversation when speaking with **sponsors — LOB, sales, marketing and C-level executives:**

If you hear...

+ We use Microsoft SQL Server for mission-critical applications
+ We are planning to consolidate multiple SQL Server instances to reduce our operational costs
+ My team has plans to migrate to SQL Server 2016/2017
+ I am running business intelligence applications
+ Real-time data analysis is crucial to my organization
+ We are experiencing massive data growth, so we need a highly scalable solution
+ We are unhappy with the current performance of our applications

...consider the following questions

+ Is your team running business intelligence applications?
+ Is real-time data analysis (especially business intelligence) crucial to your organization in maintaining competitive advantage (understanding trends, buyer patterns, sales, etc.)
+ Why are you moving to SQL Server 2016/2017? What are you looking to accomplish?
+ Is your team building a data warehousing solution?
+ Are you aware of the data warehouse work Lenovo has done with Microsoft?
+ Are you experiencing massive growth in the amount of data that is coming into your organization?
+ Do you need a highly scalable solution?

Based on a positive response, propose this Lenovo solution:

+ Lenovo offers more Data Warehouse Fast Track solutions than any other server provider. Let's see what might make the most sense for you
+ Lenovo leads in critical TPC-E, TPC-H, and TPC-DS benchmarks. Let's look at how you too can find the best performing, price-to-performance database solution

Qualifying Questions (continued)

Steer the conversation when speaking with **influencers — DBAs and IT managers:**

If you hear...

+ We use Microsoft SQL Server for mission-critical applications
+ We are planning to consolidate multiple SQL Server instances to reduce our operational costs
+ My team has plans to migrate to SQL Server 2016/2017
+ I am running business intelligence applications
+ Real-time data analysis is crucial to my organization
+ We are experiencing massive data growth, so we need a highly scalable solution
+ We are unhappy with the current performance of our applications

...consider the following questions

+ Do you use Microsoft SQL Server for mission-critical applications?
+ Do you need flexibility in how/where you deploy your applications?
+ Why are you moving to SQL Server 2016/2017? What are you looking to accomplish?
+ Would consolidating multiple SQL Server instances reduce operational costs?
+ Are you building a data warehousing solution?
+ Do you have the need to analyze exponentially more data than ever before?
+ Is your infrastructure (are your solutions) highly scalable?
+ Are you unhappy with the current performance of your applications?

Based on a positive response, propose this Lenovo solution:

+ Lenovo offers more Data Warehouse Fast Track solutions than any other server provider. Let's see what might make the most sense for you
+ Lenovo leads in critical TPC-E, TPC-H, and TPC-DS benchmarks. Let's look at how you too can find the best performing, price-to-performance database solution

Qualifying Questions (continued)

If you hear...

+ Our order entry systems need an upgrade. Performance is lagging
+ We are unhappy with the performance of our online financial transactions
+ Sales is not happy with our CRM performance
+ Retail sales systems are causing customer satisfaction complaints

...consider the following questions

+ What database is currently supporting your order entry (or CRM, online financial systems, retail sales systems)?
+ Are you looking to upgrade your current database platform?
+ What is causing the performance problems of your OLTP systems?

Based on a positive response, propose this Lenovo solution:

+ Are you familiar with Lenovo's SQL Server offerings and solutions? We work closely with Microsoft to ensure optimal price-to-performance
+ Working with Intel and Microsoft, Lenovo has certified OLTP solutions that may help address your needs. Would you like to arrange time to review?

Lenovo

Solution Components

Lenovo database solutions for Microsoft SQL Server focus on two sales opportunities: Data Warehouse Fast Track (DWFT) for SQL Server and Online Transaction Processing (OLTP).

Data Warehouse solutions

Microsoft Data Warehouse Fast Track (DWFT) for SQL Server

The Microsoft Data Warehouse Fast Track (DWFT) for SQL Server Program is designed to reduce the time necessary for enterprise leaders to build configurations that solve data warehousing issues. Lenovo has teamed with Microsoft to create DWFT solutions for Microsoft SQL Server, using not only its enterprise servers, but also a variety of System x servers to cover a wide range of data warehouse sizes.

These tested and optimized configurations for data warehousing workloads:

+ Balance CPU, I/O, and storage with SQL Server DBMS
+ Improve time to value and optimized performance with balanced, pre-tested hardware configurations
+ Reduce hardware testing requirements and lessen the need for immediate tuning
+ Reduce total cost of ownership, thanks to better price and performance, rapid deployment, and certified performance rating from Microsoft and Lenovo

Lenovo has more Data Warehouse Fast Track configurations than any other Microsoft partner:

	Lenovo Components	Target Customer Deployment
9TB Data Warehouse Offering	+ Based on SR630 1U rack servers + 6142 processors and 128GB memory + Samsung SATA SSDs + SQL Server 2017 + Relative Performance: + Row Store Throughput: 91 + Column Store Throughput: 183 + Max. User Data Capacity: 12TB + Max. User Data Capacity: 12TB	+ Entry-level data warehouse solution + ODS – Operational Data Store + Organizations looking to store operational data and run small business analytics at a smaller scale + Budget around $10,000 for hardware + High-volume play
44TB Data Warehouse Offering	+ Based on SR650 2U rack servers + 8180 processors and 768GB memory + 3.84 TB NVMe PCIe Flash Adapters + SQL Server 2017 + Relative Performance: + Row Store Throughput: 342 + Column Store Throughput: 620 + Max. User Data Capacity: 54TB	+ Mid-range-level data warehouse, typically up to 100TB solution needed + Datamart + Organizations looking to consolidate all data into one data store for a single organization or group (i.e. Marketing) + High-performance data warehouse + Budget around $100,000 for hardware

Data Warehouse solutions

Microsoft Data Warehouse Fast Track (DWFT) for SQL Server

	Lenovo Components	Target Customer Deployment
50TB Data Warehouse Offering	+ Based on ThinkSystem SN550 servers (2 for Active-Active and Active-Passive) + 4110 8C processors and 768GB memory + ThinkSystem DS6200 Storage Array with eight 3.84TB SSDs + Lenovo Flex System FC5022 16GB SAN Switch + SQL Server 2017	+ High-availability + Disaster recovery and read-scale balancing + Small to medium organizations + Support for large data volumes in data warehouse up to 50TB in size + Require greater scalability

60TB Data Warehouse Offering	+ Based on clustered 2x x3650 M5 rack server
	+ E5-2690 v4 processors and 768GB memory
	+ IBM V9000 All Flash Array storage
	+ SQL Server 2016
	+ Relative Performance:
	  + Row Store Throughput: 212
	  + Column Store Throughput: 276
	  + Max. User Data Capacity: 60TB
		+ High-availability solutions
		+ Customers who cannot afford downtime of business-critical applications
		+ Price/performance-focused

90TB Data Warehouse Offering	+ Based on ThinkSystem SR950 4U rack server
	+ 8180 processors and 1536GB memory
	+ Eight 3.84 TB NVMe Enterprise Mainstream AIC Flash Adapters
	+ SQL Server 2017
	+ Relative Performance
	  + Row Store Throughput: 501
	  + Column Store Throughput: 720
	  + Max. User Data Capacity: 102TB
		+ High-end-level data warehouse, typically up to 100TB solution needed
		+ Datamart
		+ Organizations looking to consolidate all data into one data store for a single organization or group (i.e. Marketing)
		+ High-performance data warehouse

Online Transaction Processing (OLTP)

When deployed on Lenovo ThinkSystem servers, Microsoft SQL Server is an optimal transactional system to process small, quick, interactive workloads that require a fast response time. Lenovo's Microsoft SQL Server OLTP solutions combine high-performance and cost-effective server platforms with Microsoft SQL Server 2016 Standard Edition and Enterprise Edition. To deliver the uptime performance businesses demand in today's competitive operational environment, these solutions are deployed in two-server, high-availability configurations.

	Lenovo Components		Lenovo Components
Base	+ SR630 – 6136/192GB + 3.84 NVMe SSDs + 800GB SAS SSDs + 4 million TPM + Microsoft SQL Server 2016 Standard Edition	**Base Plus**	+ SR650 – 8153/384GB + 3.84 NVMe SSDs + 800GB SAS SSDs + 6.5 million TPM + SQL Server 2016 Enterprise Edition

Hyperconverged Solutions

Nutanix	+ Based on # 4 HX7510 server model + E5-2699 V4 processors and 512GB memory + 4 x 800GB SAS SSDs, 20 x 1.8GB SAS HDDs + Relative performance: 8 virtual machines – 24 million transactions + SQL Server 2016 Enterprise Edition	VMware vSAN	+ Based on # 4 SR650 server model + 8176 processors and 768GB RAM Hybrid: 4 x 800GB SAS SSDs, 20 x 1.8GB SAS HDDs + Hybrid: 4 x 800GB SAS SSDs, 20 x 1.8GB SAS HDDs + All Flash: 4 x 800GB SAS SSDs, 2 0 x 1.8GB SAS HDDs + SQL Server 2016 Enterprise Edition + Relative performance: Hybrid: 8VMs: 12 million transactions per minute; All Flash: 8VMs: 13 million transactions per minute

Positioning

Data Warehousing

Elevator Pitch

Microsoft Data Warehouse Fast Track (DWFT) for SQL Server on Lenovo ThinkSystem servers improve time to value for your data warehouse (DW) needs with new, scalable reference architecture for Microsoft SQL Server 2016/2017. This standard solution uses high-performance System x3850 X6, x3950 X6 and System X servers with a scalable (4- or 8-way) design, delivering fast, agile, resilient performance for mission-critical database and analytics.

Microsoft Data Warehouse Fast Track program makes it easy to reduce costs, save time, and reduce risk with reliable, pre-tested hardware and best practices for data warehousing. This solution helps you:

+ Improve time to value with pre-tested hardware configurations
+ Reduce hardware testing and lessen the need for immediate tuning
+ Reduce total cost of ownership through better price and performance, rapid deployment, and advanced hardware
+ Optimize performance with pretested ThinkSystem hardware configurations
+ Consolidate storage and match IT investment-to-information-value with System x High IOPS MLC adapters

Value Messages

+ Transform business with predictive insights: Enhance investments with an advanced analytics engine
+ Derive value from any type of data: Expand data warehouse to unlock big data
+ Leverage the cloud to transform an existing workload: Access cloud scale, agility and cost benefits
+ Modernize customers' entire data warehouse by consolidating to a single, powerful solution
+ #1 TPC-H, TPC-E, and TPC-DS performance benchmarks
+ Fast Track Data Warehouse expertise in cloud computing, business analytics, desktop virtualization, business applications
+ Leadership presence in SAP HANA market

Positioning

OLTP

Elevator Pitch

As one of the fastest growing transactional database platforms, Microsoft SQL Server deployments are becoming increasingly critical to organizations. They are used in everything from enterprise operational databases to business mission-critical applications, including enterprise online sales transactions, finance management, and business intelligence. When deployed on Lenovo ThinkSystem servers, Microsoft SQL Server is the optimal transactional database for these applications, with breakthrough transactional performance, end-to-end protection, simplified management, and support for high-availability requirements.

To address these demanding database applications, Lenovo has developed two transactional database solutions. Both solutions utilize Microsoft SQL Server 2016 database software, deployed on Microsoft Windows Server 2016 operating system without server virtualization. Both solutions are based on the Intel Select Solution specifications, and performance results have been verified by Intel.

One solution is based on the Lenovo ThinkSystem SR650 server, and is deployed with the Microsoft SQL Server 2016 Enterprise Edition. The other solution is based on the Lenovo ThinkSystem SR630 server, and is deployed with the Microsoft SQL Server 2016 Standard Edition. The server configurations in both solutions are optimized to deliver extreme transactional database performance. To maximize application reliability, both solutions are deployed in a two-server, high-availability configuration.

These Lenovo database configurations for Microsoft SQL Server OLTP are methodically tested and tuned to save you months of configuration, setup, testing, and tuning.

Value Messages

+ Optimized system that is tuned, tested, and approved as an Intel Select solution
+ Buy all the hardware that you need from only one vendor, including servers, storage, and networking
+ Select from different levels of performance, scalability, and price to suit your business needs
+ Reduce time to value with pre-tested hardware configurations
+ Reduce TCO through better performance, rapid deployment, and advanced hardware
+ Optimize cost and performance with ThinkSystem SR650 and ThinkSystem SR630 configurations that have been verified by Intel via the Intel Select program
+ Available with Microsoft SQL Server Standard Edition and Enterprise Edition
+ Consolidation through HCI solutions
  + ThinkAgile HX (Nutanix)
  + ThinkAgile VX (VMware vSAN)

Benchmarks

Lenovo and SQL Server: Record-breaking Performance

#1 TPC-H: Data Warehouse

The Microsoft SQL Server DWFT configurations utilize parts of TPC-H benchmark testing from tpc.org to assess platform performance. Below are the results of these TPC-H benchmark tests for Lenovo database configurations for Microsoft SQL Server:

+ TPC-H 30TB Benchmark Result: Lenovo becomes the first company to publish a non-clustered TPC-H @30,000GB benchmark performance result (SR950 – MS SQL 2017, 1336109.9 Qph; 16% higher performance than #2)
+ TPC-H 10TB Benchmark Result: Lenovo becomes the first company to publish a non-clustered TPC-H @10,000GB benchmark performance result (3950 X6, 11,059 tpsE; no competition)

Record-setting price/performance with in-memory technology

Workload	Performance	3-Year TCO
TPC-H	5.3% better than HPE	12% less than HPE
TPC-E	10% better than Fujitsu's	15% less than Fujitsu's

#1 TPC-E: Transaction Workload

+ Lowest $USD/transaction per second per E benchmark (tpsE), first to break the $100 USD/tpsE price barrier on TPC-E, with $93.48 USD/tpsE2, 16% lower than the previous low of $111.65 USD/tpsE
+ Highest TPC-E performance for any 2-socket system with 6,598.36 tpsE
+ The result: lower overall costs, while still achieving the performance required to process customer transactions

Positioning (continued)

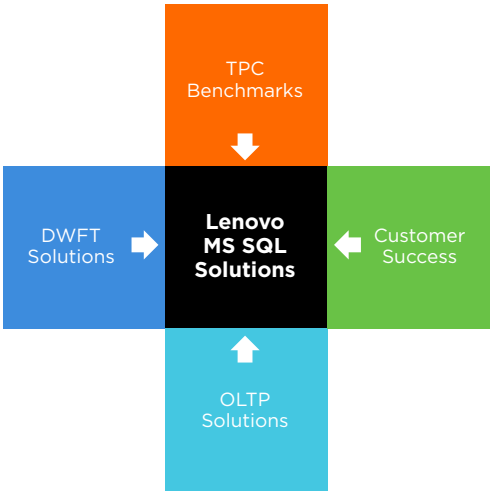
Why Choose Lenovo for Microsoft SQL Server?

Leader in Data Warehouse Solutions

+ Industry first with DWFT 2017 solutions
+ Broadest portfolio of certified DWFT solutions (Basic, Standard, Advanced)
+ Higher performance (NVMe, SSDs)
+ Flexibility — high availability

Flexibility of OLTP Solutions

+ First in industry certified with Intel Select
+ Intel Select (SR630, SR650)
+ Consolidation through SDI solutions
  + Nutanix 7510



Leader in MS SQL Benchmarks

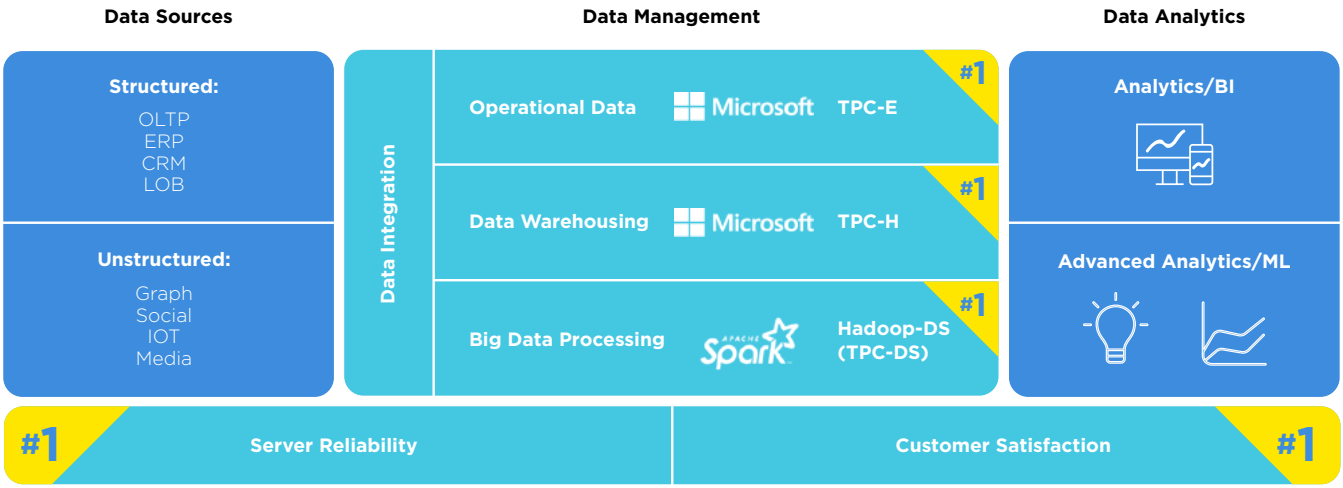
+ #1 TPC-E (SR650, 3950 X6)
+ #1 TPC-H
+ 10TB – SR950
+ 30TB – 3950 X6

Trusted by Customers

+ Deployment
+ Accelerating OLTP & DWFT workloads

Positioning (continued)

Lenovo E2E Data Architecture Advantage



Resources

For general product information, visit Lenovo Server Microsoft Solutions on Lenovo.com.

Customer-facing Assets

Database Portfolio

+ Big Data Webpage
+ TPC-H 10TB Benchmark Result
+ TPC-H 30TB Benchmark Result

Microsoft Data Warehouse Fast Track Solutions from Lenovo

+ Microsoft DWFT SQL 6TB DB Configuration Brief
+ Microsoft DWFT SQL 9TB DB Configuration Brief
+ Microsoft DWFT SQL 22TB DB Configuration Brief
+ Microsoft DWFT SQL 40TB DB Configuration Brief
+ Microsoft DWFT SQL 44TB DB Configuration Brief
+ Microsoft DWFT SQL 45TB DB Configuration Brief
+ Microsoft DWFT SQL 60TB DB Configuration Brief
+ Microsoft DWFT SQL 90TB DB Configuration Brief
+ Microsoft DWFT SQL 145TB DB Configuration Brief

Intel Select Solutions – Lenovo Database Configurations for SQL Server OLTP

+ Lenovo Database Configurations for Microsoft SQL Server OLTP

Lenovo Database Configuration for Microsoft SQL Server OLTP on Flex System with DS6200

+ Configuration Brief
+ Reference Architecture

Lenovo Database Validated Design for Microsoft SQL Server OLTP on ThinkAgile HX

+ Design Brief (ThinkSystem)
+ Reference Architecture (ThinkSystem)
+ Design Brief (System x)
+ Reference Architecture (System x)

Sales Enablement Assets

+ Build Better Microsoft SQL Server Solutions with Lenovo — Sales Playbook
+ Build Better Microsoft SQL Server Solutions with Lenovo — Sales Conversation Card
+ Build Better Microsoft SQL Server Solutions with Lenovo — Sales Training Brainshark
+ Microsoft SQL Server Solutions from Lenovo — Customer Deck

Lenovo Sales Employees can find the above enablement assets in The Pub.

Lenovo Channel Partners can access the sales enablement items from the Lenovo Partner Network or from their Lenovo Channel Account Manager.