

Get the most from your SQL data foundation

Co-engineered solutions from Red Hat, Lenovo, and Microsoft

Implementing Red Hat products and services on cost-effective, leading-edge Lenovo servers can reduce upfront capital expenditures and recurring operating expenses—savings to stretch your IT budget or bolster overall revenue.

Microsoft SQL Server on open source

Red Hat OpenShift is the first third-party commercially supported Kubernetes distribution by Microsoft.



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Modern businesses need a solid data platform to process large volumes of data rapidly and meet the needs of growing operational and analytical workloads. However, in many organizations, the database foundation is a combination of systems or is locked into a specific development language, operating system, or deployment model (cloud or on premises).

Many business and IT leaders are looking to standardize the operating system, consolidate database servers on a consistent platform, and reduce licensing costs while gaining better insight into the data and infrastructure.

Running the Microsoft SQL Server relational database on the Red Hat® Enterprise Linux® operating system offers those advantages with the flexibility, performance, and enhanced security that businesses demand. Deploy on Lenovo for a complete, co-engineered solution on trusted hardware.

The combined power of leading technology partners

The partnered solution from Red Hat and Lenovo for SQL Server brings together the best of three market leaders:

- *Microsoft SQL Server 2019* delivers a top database platform that supports choice of development languages, data types, operating systems, and deployment on prem or in the cloud.

Microsoft SQL Server 2019 brings these powerful choices to Red Hat platforms by supporting Red Hat Enterprise Linux, Red Hat Virtualization, and Red Hat OpenShift®.

SQL Server 2019 on Linux supports enlightenment mode on Red Hat Enterprise Linux. By taking advantage of the Linux Direct Access API, SQL Server is able to tell Linux to avoid copying data into RAM and instead read or write directly to storage. This provides substantial performance increases in environments where memory is scarce either due to resource availability or software licensing constraints.

- *Lenovo servers, storage, and networking hardware* create the physical infrastructure, whether running on bare-metal hardware, in a virtual machine, or in a container environment—on prem or in the cloud.
- *Lenovo endpoints*—such as smartphones, tablets, laptops, and desktops—give remote users and applications on-demand access to the data to run their applications and analytics.
- *Red Hat Enterprise Linux* provides a stable, flexible, open operating system foundation. It is Microsoft's reference Linux platform for SQL Server Standard and Enterprise editions and is the OS chosen by 90% of Global Fortune 500 companies.¹
- *Red Hat Insights* proactively identifies and remediates security, compliance, and configuration risks in your Red Hat Enterprise Linux environments and is included with your Red Hat Enterprise Linux subscription.

¹ Red Hat client data and Fortune 500 list, June 2018.

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- *Red Hat OpenShift* lets you build, develop, and deploy applications in nearly any public or private infrastructure, and provides support for Microsoft SQL Server and the associated Big Data Clusters capability. Big Data Clusters require Linux containers and Kubernetes as part of the architecture. With Big Data Clusters on Red Hat OpenShift, organizations can more securely deploy and manage a fully supported data analytics solution on a leading containers and Kubernetes platform. With integrated DevOps capabilities, Red Hat OpenShift also allows you to extend DevOps to the entire data analytics and machine learning lifecycle, and allows for collaboration across teams.
- *Red Hat Virtualization* makes it possible to run SQL Server for Linux and SQL Server for Windows workloads in separate and secure partitions of a single physical machine in virtual machines (VMs).
- Optional Red Hat components support automation, infrastructure management, ultra-high availability, and other capabilities to modernize the IT environment.

Red Hat, Lenovo, and Microsoft bring these components together in a tested, proven, validated solution with 24x7 support.

Benefits for database developers and administrators

The SQL Server features you expect. SQL Server on Linux runs the same code as SQL Server on Windows, bringing the SQL Server features you expect to Red Hat Enterprise Linux.

Same tools, new environments. With the native installer and SQL Server command-line tools on Red Hat Enterprise Linux, you can get started within minutes without separate components. You can also run Azure Data Studio on Red Hat Enterprise Linux and connect SQL Server to a variety of third-party tools.

Global support and open source community. Globally collocated support teams offer full life-cycle support and rapid issue resolution for mixed Microsoft and Red Hat environments. Developers also benefit from connecting with an extensive open source community of leading partners, customers, and experts.

Unique performance benefits. Red Hat Enterprise Linux enables Intel Optane DC Persistent Memory and production container support. (Not available when running Microsoft SQL Server 2019 on Microsoft Windows.)

Benefits for IT operations teams

Consistent experience and portability across the hybrid cloud. Together, SQL Server and Red Hat Enterprise Linux provide a consistent experience both on prem and in the public cloud, requiring less effort to run in the location you choose.

Premium performance at lower cost of ownership. From decision support to analytical workloads, Microsoft SQL Server on Red Hat Enterprise Linux consistently performs well in relation to industry benchmarks. This performance also adds value.

More efficient and intelligent insights. Based on more than 25 years of experience with customer support, Red Hat Insights provides predictive operating system analytics with SQL Server-specific rules to identify opportunities for optimizing the data platform and proactively minimizing system risks.

24x7 high availability and business continuity. High-availability features of SQL Server and backup tools coupled with Red Hat High Availability Add-On support quick recovery in the rare event of unplanned downtime.

Lenovo, Red Hat, and Microsoft—Stronger together

From device to data center to cloud, Lenovo and Red Hat deliver integrated hardware and software solutions to customers around the globe.

Microsoft selected Red Hat Enterprise Linux as its reference Linux platform for SQL Server Standard and Enterprise editions, which means that extensive development, co-engineering, and quality testing for SQL Server on Linux take place on Red Hat Enterprise Linux.

With the announcement of Microsoft SQL Server 2019, customers now have the choice of deploying SQL Server on Red Hat Enterprise Linux. This provides many advantages from decreased licensing costs to powerful management and automation tools. When deployed on Lenovo servers, you have a complete, co-engineered solution on trusted hardware. Learn how Lenovo and Red Hat deliver phenomenal value and performance running SQL Server on Red Hat Enterprise Linux.

Learn more

Find out more about [running Microsoft SQL Server on Red Hat Enterprise Linux](#) or contact your Red Hat or Lenovo sales representatives.

About Red Hat



Red Hat is the world's leading provider of enterprise open source software solutions, using a community-powered approach to deliver reliable and high-performing Linux, hybrid cloud, container, and Kubernetes technologies. Red Hat helps customers integrate new and existing IT applications, develop cloud-native applications, standardize on our industry-leading operating system, and automate, secure, and manage complex environments. Award-winning support, training, and consulting services make Red Hat a trusted adviser to the Fortune 500. As a strategic partner to cloud providers, system integrators, application vendors, customers, and open source communities, Red Hat can help organizations prepare for the digital future.



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linkedin.com/company/red-hat

North America
1 888 REDHAT1
www.redhat.com

**Europe, Middle East,
and Africa**
00800 7334 2835
europe@redhat.com

Asia Pacific
+65 6490 4200
apac@redhat.com

Latin America
+54 11 4329 7300
info-latam@redhat.com