

Boost database performance and reliability

Red Hat Enterprise Linux 8 delivers a trusted foundation for your database



Red Hat Enterprise Linux 8 includes new tools and features to increase database performance, security, and manageability:

- New optimization profiles
- Improved network and storage stacks
- Network-bound disk encryption (NBDE)
- Consistent cryptographic policies
- Transport Layer Security (TLS) 1.3 support
- Session recording
- Web console
- Access to Red Hat Insights



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Modern, digital business relies on data

Organizations are increasingly using data to run applications, inform processes, and gain insight. To support these initiatives, applications and users need fast, reliable access to the right data at all times. As a result, database reliability, security, and performance are critical for digital businesses.

Red Hat® Enterprise Linux® 8 provides a certified, stable, and security-focused operating system for your data infrastructure and operations. It is a trusted, optimized platform for the databases your business relies on, as well as machine learning workloads and independent software vendor (ISV) applications for connecting databases and managing data. Certification for commercial databases – including [SAP® HANA®](#) and [Microsoft SQL Server](#) – lets you deploy with confidence. And your subscription includes widely used open source databases like PostgreSQL and MariaDB.

Red Hat Enterprise Linux 8 adds several new tools and features to increase the performance, security, and manageability of your databases.

Faster performance

New optimization profiles and improved storage and network stacks speed database performance.

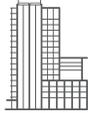
- Updated tuned profiles let you easily optimize database workloads. You can use a single command to automate server configuration and tuning for your choice of database type and workload.
- Storage block devices use multiqueue scheduling to take advantage of the bandwidth available from modern, flash-based storage technologies.
- An updated TCP/IP (Transmission Control Protocol/Internet Protocol) stack delivers faster network performance.
- A new BBR (Bottleneck Bandwidth and Round-trip propagation time) congestion algorithm improves performance on network links with high packet loss or link latencies.

Red Hat Enterprise Linux 8 also includes several database-specific enhancements. XFS forced unit access (FUA) subsystem enhancements for Microsoft SQL Server reduce write request input/output traffic by around 50% for write-intensive workloads.¹ Support for more than 100TB of memory provides greater performance for in-memory databases like SAP HANA. File system Direct Access (DAX) mode for [SAP HANA](#) and [Microsoft SQL Server](#) accelerates database performance when using persistent memory devices.

Increased security

Updated security controls to help you better protect your data and systems. Support for NBDE simplifies protection of data at rest. New system-wide cryptographic profiles – legacy, default, future, and FIPS140 (Federal Information Processing Standard Publication 140-2) – make it easier to manage and automate cryptographic settings, reducing the risk of errors. Rather than configuring libraries manually, you can use a single command to change cryptographic settings across your environment.

¹ Microsoft, "SQL Server On Linux: Forced Unit Access (Fua) Internals," December 18, 2018.
blogs.msdn.microsoft.com/bobsq/2018/12/18/sql-server-on-linux-forced-unit-access-fua-internals/.



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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Red Hat Enterprise Linux 8 was completely redesigned to implement TLS 1.3 throughout. All applications were recompiled to use the new protocol. Red Hat Enterprise Linux 8 supports TLS 1.3 in the OpenSSL 1.1.1, GNUTLS (GNU Transport Layer Security), and NSS (Network Security Services) cryptographic libraries. This provides faster, more secure transport and prevents man-in-the-middle and replay attacks, even when the observer has the encryption key.

Additionally, Red Hat Enterprise Linux 8 provides terminal session recording integrated with auditing. This feature records both the input (optional) and output of users' shell sessions – including text window resizing and timing – and correlates them with the environment and state of the system. This provides full auditability of changes and easier, more complete compliance, security monitoring, and debugging.

Easier management

Unified management and monitoring tools to help you administer your databases systems more easily and avoid downtime. A new management console features a web-based, mobile-friendly graphical user interface (GUI) that simplifies management operations and eases adoption for new Linux users. You can perform day-to-day management operations – like viewing performance statistics, inspecting logs, configuring networks and storage, starting and stopping services, and managing subscriptions – all from a unified interface.

Finally, every Red Hat Enterprise Linux subscription now includes access to [Red Hat Insights](#). Red Hat Insights delivers predictive operating system analytics that help you rapidly identify and remediate threats to security, performance, availability, and stability. Specific rules target common problems in popular database environments. Proactive automated issue resolution helps to ensure that your environment is operating optimally to avoid problems and unplanned downtime.

Learn more

Data is at the core of modern digital IT and business operations. Red Hat Enterprise Linux can help you increase the performance, manageability, and security of critical database workloads.

[Learn more at redhat.com/en/technologies/linux-platforms/enterprise-linux.](https://redhat.com/en/technologies/linux-platforms/enterprise-linux)