

Build an SAP landscape for digital transformation



The business value of Red Hat Enterprise Linux

IDC interviewed 12 organizations that use Red Hat Enterprise Linux to support their business operations. Based on its research, IDC found that these organizations experience¹:

- 40% lower three-year operational costs.
- 20% lower IT infrastructure costs.
- 45% more efficient IT staff operations.
- 68% less unplanned downtime.
- 26% faster deployment of new business applications.

Modernize for success in a digital world

Digital transformation is necessary for companies to compete and thrive in today's world. In fact, 84% of executives see new business opportunities emerging from digital transformation and 70% believe digital transformation is significantly more important now than it was two years ago.² IT organizations are adopting flexible, cost-effective cloud technologies to modernize their business and infrastructure. Wherever possible, they are looking for opportunities to improve performance, availability, and stability – all while reducing operational overhead to accommodate resource constraints.

Companies running SAP® business applications have additional impetus to modernize their infrastructure. The SAP landscape is changing: SAP customers currently running SAP applications and workloads on a non-SAP database must migrate to SAP HANA® and SAP S/4HANA® by 2027. Many organizations are already preparing for this transition while also optimizing their environment to support additional digital transformation initiatives.

Together, Red Hat and Microsoft can help your organization modernize your SAP landscape and overall IT environment to meet your digital transformation goals. Using a reliable, modern cloud-based platform, you can gain business agility, innovate faster, and make informed business decisions in real time.

Red Hat Enterprise Linux for SAP Solutions with Microsoft Azure

Red Hat and Microsoft are leading providers of enterprise-grade environments, platforms, and tools. The two companies offer an ideal high-performance, stable, cloud-based platform to support your SAP environment while preparing you for digital transformation.

The result of a long-standing collaborative engineering relationship between Red Hat and SAP, [Red Hat® Enterprise Linux® for SAP Solutions](#) is built on the same foundation as the world's leading enterprise Linux platform, [Red Hat Enterprise Linux](#). It combines the reliability, scalability, and performance of Linux with technologies that meet specific requirements for running SAP workloads. Red Hat Enterprise Linux for SAP Solutions delivers stability, speed, and elasticity for your SAP environment.

[Microsoft Azure](#) provides a powerful and scalable cloud foundation to support the most memory-intensive SAP HANA workloads. It offers a broad selection of compute resources, including SAP HANA Large Instances. These purpose-built, SAP HANA-certified instances are fully managed with a 99.99% availability for a high availability pair service level agreement (SLA). With up to 20TB of RAM per node for scale-up OLTP (online transaction processing) workloads like SAP S/4HANA and SAP Business Suite powered by SAP HANA and up to 120TB of RAM for scale-out OLAP (online analytical processing) scenarios like SAP Business Warehouse, SAP HANA Large Instances have the memory capacity required to run the largest workloads.



facebook.com/redhatinc
@redhat
linkedin.com/company/red-hat

redhat.com

¹ IDC White Paper, sponsored by Red Hat, "The Business Value of Red Hat Enterprise Linux," November 2017. Document #US41284716.

² Harvard Business Review, sponsored by Red Hat, "Rethinking Digital Transformation," March 2020.

Additionally, Red Hat, SAP, and Microsoft offer a simplified, hassle-free support model that covers your entire environment with comprehensive, integrated, global service. Contact any of the companies with a related issue. Red Hat, SAP, and Microsoft work together to identify the problem and resolve it quickly and efficiently.

Requirements and considerations for SAP S/4HANA

SAP HANA is an in-memory platform for running transactional applications and analytics from a single copy of data. Even so, applications must be specifically written to make use of this power. SAP S/4HANA takes full advantage of SAP HANA's architecture. Not only does SAP S/4HANA run in-memory, it also eliminates the need for lengthy processes, such as financial reconciliation, by using a single copy of data. Rather than relying on sales reports or projections from a data warehouse, SAP S/4HANA computes analytics in real time from live data.

SAP S/4HANA offers a new, modern way of integrating your operational and analytical worlds. With SAP S/4HANA, operations teams have access to analytical context to help them improve SAP performance and efficiencies. To realize these benefits, however, you need to first upgrade to the latest versions of business applications, then migrate your database to SAP HANA, and, finally, migrate existing SAP applications to SAP S/4HANA. When these requirements are considered, the 2027 migration deadline does not seem far away.

Because SAP S/4HANA supports transactional applications as well as analytics from a single copy of data, it increases demands on your infrastructure. Preparing your SAP landscape through IT optimization can make the transition to SAP S/4HANA smoother and more efficient.

The following sections outline requirements and considerations when preparing for SAP HANA and SAP S/4HANA migration.

Linux platform

Regardless of which operating system you currently use to run SAP applications, the transition to SAP HANA and SAP S/4HANA can be made easier by standardizing on a single operating system. Standardizing also improves stability, which is essential for core business applications.

SAP has chosen two enterprise distributions of Linux as the operating system for SAP HANA and SAP S/4HANA. As a leading operating system for servers and other large-scale systems, Linux provides the power, flexibility, and reliability needed for critical applications. 100% of today's 500 fastest supercomputers run a Linux distribution.³

It matters which Linux distribution you choose for your SAP environment. Red Hat Enterprise Linux for SAP Solutions provides a reliable and scalable foundation for your SAP operations. It also includes specific features and optimizations for SAP environments to provide better performance and stability. Additionally, Red Hat provides production-grade support and services to ensure business continuity.

³ TOP500 list as of June 2020. Retrieved from top500.org/statistics/list as of July 17, 2020.

Availability and stability

Your SAP workloads are critical for your business. Downtime – planned or unplanned – can negatively impact operations. Red Hat Enterprise Linux provides a reliable, stable operating environment for your SAP landscape. Red Hat Enterprise Linux High Availability Add-On – included with Red Hat Enterprise Linux for SAP Solutions – provides failover orchestration across your environment to keep your SAP workloads up and running at all times. High availability is supported across Microsoft Azure instances with non-software-based fencing. Microsoft Azure also allows you to create load-balanced, multi-SID (SAP System Identification) clusters for increased availability and automated failover. You can install multiple SAP ASCS (ABAP SAP Central Service) and ERS (enqueue replication server) instances with different SIDs in a single Pacemaker cluster to reduce costs without compromising availability. Support for Azure NetApp Files provides an additional option for fast, reliable, storage-efficient backup, recovery, and cloning.

Finally, Red Hat Update Services provides up to four years of support – including security patches and critical fixes – for select minor releases of Red Hat Enterprise Linux. When you upgrade to a new minor release, binary compatibility and kernel stability ensure that your system remains stable and that both SAP and custom applications continue to execute smoothly.

Management and automation

A modern approach to systems management uses enhanced analytics and environment-specific knowledge. Because SAP environments are complex, the move to SAP HANA and SAP S/4HANA requires visibility and insight into your environment and operations. To achieve this and optimize performance and system health, you need a tool that can use data analytics to predict workload needs and automate management of your SAP environment.

Red Hat and Microsoft offer advanced management tools and capabilities to help you manage your SAP environment more effectively. Included with Red Hat Enterprise Linux for SAP Solutions, the [Red Hat Insights](#) Software-as-a-Service offering collects analytics about your environment to proactively identify and remediate threats to security, availability, stability, and performance. Through integrated services and features, Microsoft Azure lets you simplify resource management; monitor, collect, and analyze performance and use data; automate cloud management; and detect and diagnose application issues. You can also use the [SAP Landscape Management \(LaMa\) Connector for Azure](#) to manage your SAP landscape directly from the Microsoft Azure console.

Security and compliance

Your critical systems must be secure and up-to-date at all times. Many issues within SAP environments arise because services do not have the most current security patches and updates. Control of security updates and system patches is essential as you move to SAP HANA and SAP S/4HANA. Automated detection and notification capabilities can alert you of systems and software that require updates, improving system security and compliance.

Red Hat and Microsoft deliver a security-focused foundation for your SAP environment. Red Hat Enterprise Linux includes advanced security features to protect your environment and your business. Live kernel patching for critical and important common vulnerabilities and exposures (CVEs) helps you reduce unplanned downtime from reinstalls and reboots without compromising security. Integration with [Red Hat Satellite](#) and Red Hat Insights delivers increased monitoring and

remediation capabilities and proactive compliance controls. Plus, Red Hat's dedicated Product Security team continually scans for and responds to emerging threats, providing patches for most vulnerabilities within one day of public knowledge.

At the cloud level, Microsoft Azure also delivers integrated security services and features – including active directory synchronization, key-based access, multi-factor authentication, and unified cloud security management – that work in conjunction with Red Hat products across your environment. Additionally, rigorous third-party audits verify compliance of Microsoft Azure with strict security controls mandated by a broad set of international and industry-specific standards.

Optimized performance

Migration provides you with an opportunity to optimize your environment to achieve the best possible performance. SAP HANA requires massive amounts of data to be held in-memory. Accordingly, the settings and parameters of the underlying operating system must be appropriately tuned for maximum performance.

Red Hat Enterprise Linux for SAP Solutions and Microsoft Azure provide a high-performance foundation for your SAP operations. Red Hat Enterprise Linux for SAP Solutions includes SAP-specific features and optimizations to meet the performance demands of complex SAP environments. Microsoft Azure fully supports a broad array of SAP applications across development, test, and production environments. Tuned, purpose-built hardware and SAP HANA-certified virtual machines deliver unparalleled workload performance. And, with SAP HANA Large Instances, Microsoft Azure supports memory-intensive SAP HANA workloads with ease.

Scalability

In addition to high performance, database scalability is required to support large datasets. SAP HANA can handle several hundred terabytes of data, and its performance depends on the scalability and performance of both the operating system and the underlying infrastructure.

Red Hat and Microsoft provide massive, dynamic scalability for your SAP environment. Add more resources in minutes to meet demand. With Microsoft Azure, you can scale your SAP HANA workloads up to 20TB for OLTP and 60TB for OLAP, enabling the largest SAP HANA workloads.

Define your path to digital transformation

Digital transformation is a journey that takes time. Red Hat and Microsoft help you modernize on your schedule and deliver flexibility without sacrificing stability. As many organizations move to the cloud, they also consider moving to a container- and microservices-based platform like [Red Hat OpenShift®](#). These platforms let you refactor legacy applications and custom extensions that integrate with your SAP environment to operate more flexibly and efficiently. They also provide a foundation for new, cloud-native and containerized applications and workloads, like SAP Data Intelligence and machine learning.

Together, Red Hat OpenShift with Microsoft Azure form an enterprise-grade, containerized, hybrid cloud environment. You can choose to deploy Red Hat OpenShift Container Platform on Microsoft Azure yourself or take advantage of the [Azure Red Hat OpenShift](#) managed service. All of this adds up to increased workload portability and deployment options. Place your applications on your choice of infrastructure to optimize performance, costs, scalability, and security and move them as needed.



“Our Red Hat stack on Microsoft Azure, a proven solution for cloud services, has enabled us become faster and create a hybrid cloud infrastructure that meets our needs.”⁴

Johannes Hansen

Senior Director Application Development & User Experience, Digital Fleet Solutions, Lufthansa Technik AG

⁴ Red Hat press release. “[Lufthansa Technik Builds its Digital Future with Red Hat](#),” May 7, 2018.

Learn more

Red Hat and Microsoft work closely with SAP to deliver a high-performance, security-focused foundation for SAP environments. Deploying SAP HANA and SAP S/4HANA on Red Hat Enterprise Linux for SAP Solutions and Microsoft Azure can help you support today's business needs while preparing for future change and success in the digital economy. Learn more about Red Hat, Microsoft, and SAP products and partnerships at the following web pages.

- SAP S/4HANA: sap.com/s4hana
- Red Hat Enterprise Linux for SAP Solutions: redhat.com/en/topics/linux/sap-hana-and-linux
- Microsoft Azure: azure.microsoft.com/en-us/overview/linux-on-azure/red-hat
- Red Hat and Microsoft partnership: redhat.com/en/microsoft
- Red Hat and SAP: redhat.com/sap

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.



facebook.com/redhatinc
@redhat
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