



Help Improve Operational Efficiency with a SUSE* Cloud Solution

SUSE OpenStack Cloud* helps IT organizations meet the increasing demand for agility and speed without vendor lock-in

This solution brief describes how to solve business challenges through investment in innovative technologies.

If you are responsible for...

- **Business strategy:**
You will better understand how an open source private cloud solution will enable you to successfully meet your business outcomes.
- **Technology decisions:**
You will learn how an open source private cloud solution works to deliver IT and business value.

Executive Summary

Rapid technological advances offer organizations across all industries the potential to gain competitive advantage. Yet, while these advances may provide unprecedented opportunities for innovation, they can also create unanticipated conflicts that impede progress. Purpose-built infrastructure, vendor lock-in, and exploding data volumes stifle innovation and put market leadership at risk. To avoid such crises, more IT leaders are implementing open source cloud solutions to meet changing business needs. This is especially true when security and industry compliance requirements are vital considerations. Enterprise open source cloud solutions can help IT organizations achieve or exceed service levels, and they offer the flexibility and scalability businesses need.

SUSE OpenStack Cloud* provides organizations an open source private cloud solution that includes a broad range of capabilities and integration opportunities. Built with Intel® technology and security-focused, high performance computing and storage, SUSE OpenStack Cloud is designed to offer flexibility, operational efficiency, and simplified deployment. With an OpenStack private cloud, IT organizations can help reduce operational costs while increasing innovative agility to make good on the promise of delivering competitive advantage.

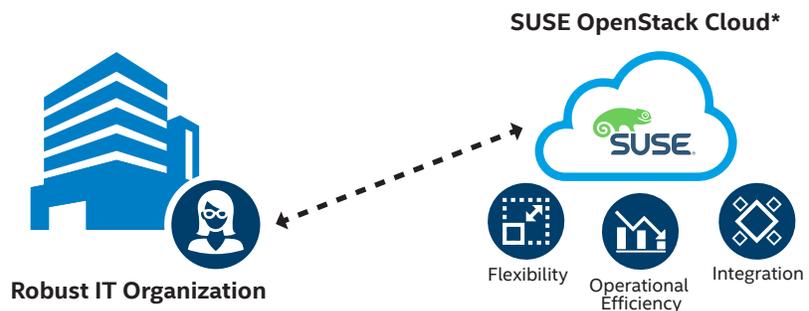


Figure 1. With SUSE OpenStack Cloud*, IT organizations retain total control while increasing flexibility and scalability.

Solution Benefits

With SUSE OpenStack Cloud*, an open source private cloud solution, IT organizations can increase agility while helping to reduce costs. The benefits can include:

- Flexibility
- Scalability
- High performance
- Operational efficiency
- Easy integration with existing infrastructure
- Simplified deployment

Business Challenge: Purpose-Built Systems Hinder Agility

Developing and maintaining a competitive advantage requires agility in a constantly changing, technology-focused landscape. Businesses with existing IT investments are seeking new strategies for rapid responsiveness. Many are slowed by outdated infrastructure, which is costly to replace and can create a lag as businesses constantly try to keep pace with technology changes. These businesses face challenges in the following areas:

- **Longer time-to-market (TTM).** IT organizations need to develop more reliable development lifecycles in less time.
- **Higher cost.** Purpose-built infrastructure locks organizations into vendor-specific technology, which can be costly to purchase and maintain.
- **Less scalability.** The pace of technology changes quickly, making it more difficult and time consuming to innovate with existing systems.
- **Less flexibility.** Proprietary infrastructure often creates compatibility issues, while many solutions include previously unavailable interoperability functionality.

All industries, as well as government, experience the challenges of meeting today's needs. Many also have critical security and compliance requirements. Achieving service levels, reducing expenses, and growing the overall enterprise can be achieved with private cloud solutions. For most organizations, an open source private cloud solution from SUSE* can provide the tools to help overcome challenges.

Solution Value: Scalable, Flexible Enterprise Solutions

Private clouds can effectively use on-premises equipment with higher-than-average utilization due to the underlying virtualization. A SUSE OpenStack* private cloud is designed to help eliminate vendor lock-in, provide on-demand storage and computing, and eliminate workload bottlenecks. The broad community of open source developers increases the range and choice of available solutions and service, and increases interoperability. Given these benefits, organizations can gain returns on their in-house IT resources by implementing an OpenStack private cloud solution.

SUSE OpenStack Cloud* helps increase networking flexibility, improve operational efficiency, and simplify private cloud infrastructure management (see Figure 2). SUSE's Infrastructure-as-a-Service (IaaS) capabilities help IT organizations rapidly deliver business solutions, including integration with enterprise storage and data center solutions. With SUSE OpenStack Cloud, organizations can quickly adopt new solutions without large capital expenditures.

SUSE OpenStack Cloud, built on Intel® technology, offers the following benefits:

- **Flexibility.** With distributed virtual routing, SUSE OpenStack Cloud can increase scalability, performance, and availability by enabling the network to automatically expand as compute nodes are added.
- **Operational efficiency.** SUSE OpenStack Cloud can utilize existing servers running outside the private cloud due to the wide variety of supported hardware. It provides cloud administrators with a single view into cloud operations, dramatically improving the speed of problem resolution.

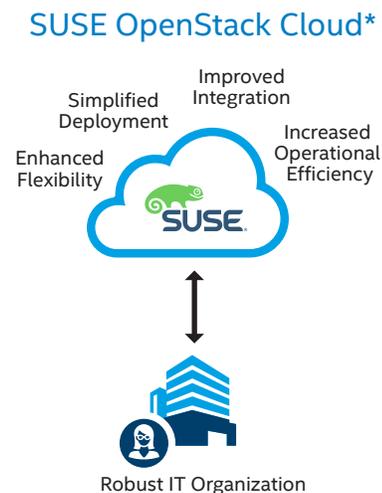


Figure 2. SUSE OpenStack Cloud* can help improve integration, simplify deployment, and increase overall operational efficiency.

- **Scalable storage.** SUSE OpenStack Cloud integrates SUSE Enterprise Storage*, powered by Ceph*, to provide an enhanced platform for unified object, block, and file storage with easy installation.
- **Simplified deployment.** Many workloads require additional services. Standardization on IaaS simplifies and speeds installation by eliminating the need for users to manage and configure these services.

Strategic Partnerships Deliver Enterprise Capabilities

In 2016, Hewlett Packard Enterprises* (HPE*) named SUSE its preferred open source partner for Linux*, SUSE Cloud Foundry*, and OpenStack solutions.¹ HPE, as well as SUSE's other strategic partners, combine to make enterprise private cloud easier to deploy while providing richer capabilities. These partnerships include:

- **HPE.** With HPE Apollo* 4000, 6000, and 8000 Systems, SUSE Linux Enterprise Server* for HPE helps to deliver high performance computing for data-intensive workloads, including big data.
- **Ceph.** SUSE Enterprise Storage, powered by Ceph, helps to provide highly scalable, resilient, and cost-effective storage.
- **SAP HANA*.** Organizations can accelerate analytics and reporting, or run multiple SAP business applications with SAP HANA and SUSE Linux Enterprise Server for SAP.

SUSE's strategic partners work together to create an excellent solution for modern, flexible, and available infrastructure for enterprise-level computing.

Solution Architecture: Delivering High Performance without Compromising Security

Intel's involvement in the open source community nurtures broad collaboration and innovation, resulting in a software-defined infrastructure approach that delivers hundreds of new, more accessible solutions. SUSE OpenStack Cloud, powered by Intel® technology, helps to improve performance and availability without compromising security (see Figure 3).

Intel's security-focused approach to software and hardware design brings the following benefits to cloud solutions:

- **Security.** Intel® Trusted Execution Technology (Intel® TXT) helps to provide cloud operators with automated security and compliance monitoring. Intel® Advanced Encryption Standard–New Instructions (Intel® AES-NI) assists in accelerating encryption and decryption algorithms. Intel® Secure Key helps reduce vulnerability to sophisticated cyber attacks.
- **Performance.** Intel® Xeon® processor family and Intel® Ethernet Gigabit Server Adapters help to deliver reliable, high-performance network, compute, and storage capabilities for virtualized environments.
- **Scalability.** Intel® Solid State Drives (Intel® SSDs) deliver high-performance and stable reliability for data storage; Intel Xeon processors improve high-performance computing; and Intel® Resource Director Technology (Intel® RDT) brings new levels of visibility and control over how shared resources such as last-level cache (LLC) and memory bandwidth are used by applications, virtual machines (VMs), and containers.

SUSE OpenStack Cloud*

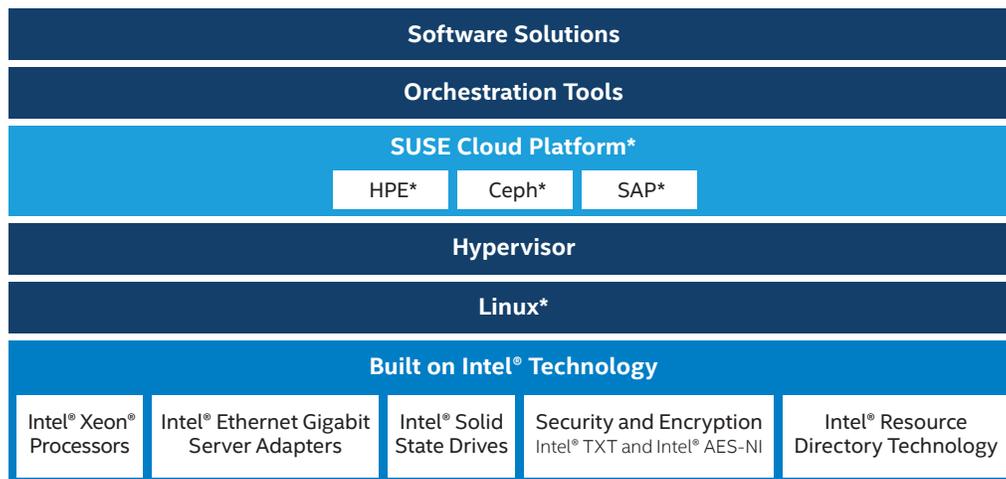


Figure 3. Intel® technology provides high performance with a focus on security for SUSE OpenStack Cloud* IaaS solutions.

Conclusion

To achieve and maintain a competitive advantage, businesses can no longer rely on vendor-specific systems. IT organizations need new solutions that can easily scale and accommodate both on-premises and off-premises infrastructure. SUSE OpenStack Cloud, with its best-in-class partners, helps deliver flexibility, scalability, and a broad range of solutions and capabilities for IT organizations.

Built on Intel technology, SUSE OpenStack Cloud helps IT organizations achieve and keep up with the rapid innovation necessary to succeed in competitive industries. Intel's security-focused, high-performance technologies help to provide the foundation so that IT organizations can focus on improving service levels and meeting business needs while reducing operational costs.

Find the solution that is right for your organization. Contact your Intel representative or visit intel.com/cloud.

Focus on SUSE*

SUSE, a pioneer in open source software founded in 1992, provides reliable, interoperable Linux* and cloud infrastructure solutions. With more than 20 years of engineering excellence, exceptional service, and an unrivaled partner ecosystem, SUSE products and support help businesses manage complexity, reduce cost, and confidently deliver services with greater control and flexibility. Thousands of businesses worldwide rely on SUSE for mission-critical computing and IT management needs.

Learn More

You may also find the following resources useful:

- [SUSE OpenStack Cloud](#)
- [Cloud Solutions Deliver Flexible Choices for Improving Innovation and Capabilities solution brief \(ask your Intel Representative\)](#)

Solution Provided By:



¹ Source: suse.com/newsroom/post/2016/suse-acquires-openstack-iaas-and-cloud-foundry-paas-talent-and-technology-assets-from-hpe-to-accelerate-growth-and-entry-into-new-markets.

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Intel technologies' features and benefits depend on system configuration and may require enabled hardware, software, or service activation. Performance varies depending on system configuration. No computer system can be absolutely secure. Check with your system manufacturer or retailer, or learn more at intel.com.

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