



Hewlett Packard
Enterprise



Migrate from UNIX to SUSE Linux Enterprise Server

Three-stage approach for boosting availability and reducing costs for your business-critical applications

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Today's enterprises leverage mobile, social, and Big Data applications to grow their business and gain a competitive advantage. Get more from these apps by migrating from UNIX® to SUSE® Linux® Enterprise Server, running on x86 HPE ProLiant servers.

Your lines of business make important operational decisions based on information gathered from mobile, social, and Big Data applications. Traditional mission-critical workloads such as enterprise resource planning (ERP) also play a critical role in decision-making. As an IT provider, your job is to deliver these services cost-effectively and ensure the supporting systems remain always on and available.

Hewlett Packard Enterprise delivers industry-standard SUSE Linux Enterprise Server solutions that give your IT organization the flexibility to consolidate on the best server platforms for your workloads. These solutions deliver the reliability, scalability, availability, and security you need for the mission-critical databases and SAP® applications often deployed on UNIX servers.

In this paper, HPE recommends a three-step approach for organizations considering migrating applications from UNIX to SUSE Linux Enterprise Server running on HPE ProLiant server.

Organize your migration in stages

To reduce software licensing, space, energy, and system management costs, your IT organization can migrate legacy UNIX systems onto a common standards-based HPE ProLiant server platform. Whether your servers are approaching the end of their lifecycle or you are standardizing on open source applications for cloud deployment, consider the following three-stage approach for migrating workloads from UNIX to Linux and HPE ProLiant.

Stage 1: Develop a migration plan

Before diving into moving workloads, you need a complete picture of what is technically possible. You also need to know whether the costs are justified, how your hardware choices affect those costs, and if your IT staff is ready for the migration.

Verify that you can migrate all your software

When moving applications to Linux, the first step is to look beyond the applications to verify that you can migrate the complete software stack. SUSE Linux Enterprise Server supports hundreds of hardware systems and devices. In fact, SUSE Linux Enterprise Server includes the drivers for many of the devices it supports. Visit drivers.suse.com for a list of drivers that ship with SUSE Linux Enterprise Server. Visit suse.com/yessearch to see if SUSE supports your hardware.

You should also verify there is Linux support for the applications you use for server and storage systems management, especially if you have service-level agreements with your lines of business. In addition, you should verify the middleware used to support databases, web environments, and other application support functions are available on Linux. SUSE supports a broad set of systems management tools and middleware. You can search to find yours by visiting suse.com/susePSC/home.

Understand the end-to-end scope and costs of porting applications

The next step in the planning phase is to ensure you understand the scope and costs of porting your applications from UNIX to Linux. Many business applications such as enterprise resource planning (ERP), supply chain management (SCM), and customer relationship management (CRM) already run on Linux platforms, so no porting is required. In fact, SUSE maintains strong partnerships with companies like SAP to deliver optimized enterprise solutions for mission-critical workloads.

For applications that require porting from UNIX to Linux, HPE can help. Work with your HPE representative to identify the right application migration services for your HPE server platforms.

Choose your hardware platform

While you plan for migrating workloads to Linux, you might also consider upgrading your server platform. If your servers are aging, the time might be right to move to one of the HPE ProLiant platforms. These advanced systems go beyond the server to imagine new possibilities for compute—the vast pool of processing resources that can be located anywhere, scaled to any workload, and made available at all times to fuel business growth.

To learn which HPE ProLiant servers support SUSE Linux Enterprise Server, visit the [HPE Servers Support & Certification Matrices](#).

Be sure your IT staff is ready for Linux

The third step in the planning phase is to ensure you have the buy-in from and training for your IT staff. As the UNIX market declines, your systems administrators can develop Linux skills that increase their ability to remain current with the latest technologies and innovations. Your UNIX staff can easily apply their existing knowledge as they transition to working with Linux environments. For information on Linux training and certifications, visit training.suse.com.

Stage 2: Migrate selected applications

When the planning phase is complete, you're ready to begin the actual migration. Be sure to carefully prioritize the applications you want to migrate, standardize your software builds, and then deploy the builds in a test environment.

Select the applications to migrate

After you prioritize the applications you want to migrate, you can set up a test environment for them. Choose simple applications for the first few migrations, which will help balance the business requirements for reducing costs with achieving migration success. We suggest you start with an application that already runs on Linux while your staff ramps up their skills. In some cases, expiring hardware leases or software maintenance renewals might dictate which applications you migrate first.

Create standard builds for the software stack

Save yourself time and effort by creating standard builds. Doing so will provide a consistent approach to provisioning the same workloads in the future. We recommend using RPM to help simplify the setup, implementation, and maintenance of the Linux software stack. A standard, documented process for installing, upgrading, configuring, and removing each software package can help reduce setup and maintenance time.

For SAP applications, SUSE Linux Enterprise Server for SAP Applications delivers an installation wizard with automation features that can reduce deployment times from days to hours.

For mission-critical application migrations, the builds must include high-availability capabilities for both planned and unplanned downtime. SUSE Linux Enterprise High Availability Extension, added to SUSE Linux Enterprise Server, provides an easy-to-use interface that enables your IT staff to set up clusters with physical and virtual server systems. SUSE Linux Enterprise High Availability Extension works in conjunction with high-availability solutions for HPE servers to leverage platform-specific features and capabilities. When the operating system, clustering software, and hardware capabilities are fully compatible, your IT staff will spend less time troubleshooting high-availability issues.

Deploy the pilot program

Using the RPM packages, you can develop repeatable installation processes for the software stack. Be sure to include any recent updates or patches as part of the process. Carefully document any provisioning process and correct it according to lessons learned during the initial setup. SUSE Studio™ will help your IT staff use RPM packages to quickly build, configure, and deploy workloads on an HPE server platforms. Regardless of whether your workloads are physical or virtual, you can easily deploy them to the cloud now or in the future with very few (if any) configuration changes.

Stage 3: Validate your results

As budgets continue to shrink, it's important to demonstrate the value of IT projects to the business. This is especially true with migration projects, which often involve a significant initial investment of both time and resources. To effectively validate you will realize the desired improvements in capital expenditures, operational costs, and downtime, you need to start with a baseline for your current operations.

Get a baseline for your current costs

To demonstrate savings over your existing UNIX system, you need to calculate what you spend on that system. Consider the following:

- Average yearly capital expenditure for new servers
- The cost of running and maintaining those servers; for example, electrical power and cooling
- License fees for the operating system software and the applications
- Maintenance or support contracts for your software

Before moving workloads, you should also:

- Create a complete picture of what is technically possible
- Know whether the costs are justified
- Confirm that your IT staff is ready
- Measure the costs related to your IT staff; these costs include the amount each staff member costs and how much of that staff member's time (on average) is spent maintaining or working on the system

Get a baseline for your service availability and downtime

You probably already know the level of service your UNIX systems provide your organization. If not, you should collect this historical data for a short time before starting your migration. The data can be very helpful in proving the value of your new investments in Linux.

When establishing a baseline, make sure to include the amount of time mission-critical services are available. Services consultants and market analysts can often provide guidance on typical costs of downtime; you can use these figures as a starting point and adjust them to fit your organization.

Calculate the cost of your SUSE Linux Enterprise Server platform

Once you have a baseline for your existing system, calculating the same costs for your new Linux system is relatively straightforward. As with calculating your baseline, consider the estimated capital expenditure for HPE ProLiant servers and the cost of maintaining those servers. If you're purchasing new hardware, HPE can help you understand these potential costs.

Because SUSE Linux Enterprise Server is open source, your software expenses will follow a slightly different model. You will purchase a SUSE Linux Enterprise Server subscription, rather than a UNIX software license. For your new solution, you need to calculate the costs of application licenses, software maintenance and support, and staff time spent maintaining the solution.

Include consulting and training costs

Depending on the skills available to your organization, you might need outside consultants to help architect your solution or assist during the migration. These costs can be significant; but once annualized over the course of three years (or another reasonable term), the costs are often offset by other savings. Be sure to factor in the costs to retrain your IT staff on the new Linux system. Because UNIX and Linux are similar, training expenses for a UNIX staff will likely be less than for a staff with no UNIX or Linux experience.

Make the comparison

Now that you have figures for your baseline UNIX system and your new Linux system, you can compare them to measure the new system's success. You can use these numbers to validate your organization's investment in Linux and new HPE servers, as well as illustrate the value of IT to the business. The numbers can also guide you in planning for future migrations or expansions in your data center.

Use cases

To see how other organizations accomplished their moves from UNIX to Linux, and learn how this move can help you, consider a SUSE customer that saved more than \$700,000 USD by choosing Linux over UNIX.

Customer success: SAP on Linux instead of UNIX

Peerless Clothing, Inc. produces men's tailored clothing for designer labels. Peerless Clothing supplies clothing to almost every major department and specialty store retailer in the United States. Peerless had been growing rapidly and was finding its UNIX platform inflexible. The company wanted to introduce new SAP applications, such as NetWeaver, SAP Business Warehouse applications, SAP Enterprise Portal, and SAP Knowledge Management.

"Moving our UNIX environment to Linux made a lot of sense because our staff didn't require a lot of retraining," said Joffrey Bienvenue, IS infrastructure and operations manager at Peerless Clothing.

Reference guide

Staff training costs weren't the only expenses that Peerless avoided by choosing SUSE Linux Enterprise Server. "SAP systems require a lot of memory, so had we gone with a UNIX-based platform, we would have been forced to make a significant investment in new hardware," said Bienvenue. "SUSE Linux Enterprise Server allows us to leverage inexpensive midrange commodity hardware, and by using VMware® to virtualize our Linux servers, we can quickly respond to the needs of the business by adding new servers in no time."

Peerless Clothing's decision has paid off by saving the company at least \$700,000 USD, compared to the cost of a UNIX solution. By virtualizing its servers, the company has also reduced its hardware by 90 percent and can now deploy new servers in a matter of hours. [Additional results on the Peerless Clothing migration can be found reading the full success story.](#)



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