Planning for a smooth UNIX-to-Linux migration

By Yogesh Devi

Migrating from the UNIX® OS to the Linux® OS helps reduce capital and operating costs while increasing IT flexibility and scalability. Find out more about how to determine the right time to make the move and what to look for in a migration vendor.

What is driving the migration from UNIX to Linux? According to researchers at the University of Leeds, a mere 5 percent minority can influence a crowd's direction; the remaining 95 percent follow without realizing it.[1] On the other hand, convergence theory postulates that individuals who want to act in a certain way come together in a crowd. No matter how psychologists may look at it, the fact is that a growing number of like-minded IT professionals have converged on the path of Linux migration—prompting many organizations to take a closer look. And when they do, convincing cost-efficiencies are spurring them on. Beyond the strategic reasons for migrating to Linux, important considerations include how to determine the best time to move forward and what to look for in a migration vendor.

Why migrate to Linux?

Several compelling reasons point toward the migration from UNIX to Linux (see Figure 1). First and foremost, shrinking IT budgets have led organizations to examine the cost advantages of an x86-based Linux system over a RISC-based UNIX system. Consider capital costs: for comparable performance, the cost of industry-standard systems—such as Dell™ PowerEdge™ servers running Linux—can be significantly lower than that of RISC-based servers running proprietary UNIX variants. Replacing legacy RISC-based servers with potentially fewer, more energy-efficient x86-based servers also helps drive down data center expansion costs. Operating costs are an additional consideration: running Linux on x86-based systems helps reduce system maintenance, software licensing, staffing, and energy costs compared to a typical RISC-based deployment.

The open Linux platform enables organizations to simplify their operations, enhance flexibility, and avoid vendor lock-in. It also provides a scalable, cost-effective platform for cloud computing–based environments.

When is the best time to migrate?

For some, it's no longer a question of whether to migrate—it's a question of when. Although there are no ready-made answers, the following questions can help organizations determine when the time has come:

- Are legacy systems coming to end of life?
- Are legacy systems too expensive to maintain?
- Do performance and scalability meet current and projected needs?
- Are operating costs too high?
- Are IT systems inflexible, hampering innovation?

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[1] "Consensus decision making in human crowds," by John R. G. Dyer et al., in *Animal Behaviour* 75, 2008.

"Linux migration provides a way for organizations to move beyond the challenges of maintaining legacy UNIX systems toward the scalability, flexibility, and cost-efficiency of an open, x86-based Linux system."

- Is time to market too long?
- Are operational processes becoming too complex?

A considerable amount of calculation goes into deciding whether organizations should take the plunge. In the end, it boils down to a reasonable risk-reward ratio. A good yardstick is the return on investment (ROI) that can be expected from this migration within a fixed time frame. The aim is to realize a positive ROI at or before a reasonable time horizon—say two to three years—from the start of the migration. If a vendor can categorically determine this horizon, then an organization should consider migrating.

Who should help in the migration?
Converting an existing IT infrastructure to the Linux platform can divert IT staff from mission-critical tasks, and unexpected obstacles may hinder the process. Organizations looking to simplify the migration process can benefit from the assistance of an experienced vendor.

Vendor-agnostic services
Vendor-agnostic vendor: this term is not intended to be an oxymoron. It is important for organizations to find a vendor who will provide best-of-breed, standards-based technology and service without lock-in to proprietary hardware, software, operating systems, or services. The vendor should be committed to industry standards such as Portable Operating System Interface for UNIX (POSIX) and the Linux Standard Base.

Breadth and depth of experience
Look for a vendor with experience that spans the migration spectrum, from large-scale, enterprise-wide migrations involving multiple applications to individual projects for single applications. This experience indicates that the vendor likely has the necessary technical and strategic know-how and has gained both breadth and depth of knowledge. Also consider vendors who can solve support issues in-house.

Experienced vendors will have migrated to the Linux OS from many UNIX variants, including the Oracle® Solaris, IBM® AIX®, HP-UX, SCO OpenServer, and NCR UNIX SVR4 operating systems. Furthermore, they should offer a choice of Linux distributions from vendors such as Red Hat® Enterprise Linux and Novell® SUSE® Linux Enterprise, and communities such as Community Enterprise Operating System (CentOS) and Ubuntu.

Meticulous methodologies

Meticulous planning and strong project governance are key requirements for a smooth migration, and these can stem only from established, well-developed methodologies. Sound methodologies enable successful assessment, design, implementation, and maintenance of migrated environments.

Apart from solid methodologies, the vendor should provide a balanced mix of practice leads, consultants, program managers, and architects—preferably ones with a strong network of industry partners such as Intel, Red Hat, Novell, Accenture, and BMC. Moreover, the vendor should be able to maintain servers, storage, and software under a single umbrella.

Established best practices for migration

Vendors with established migration practices bring to the table consulting methodologies that factor in a whole gamut of considerations. They address specific customer pain points and present a comprehensive solution that spans the systems development life cycle (SDLC), which includes assessment, planning, design, migration, and deployment.

A vendor's repertoire of best practices should account for migration-induced changes and their effects. These elements—which should not be overlooked because they can affect the time-horizon calculation for a positive ROI—include the following:
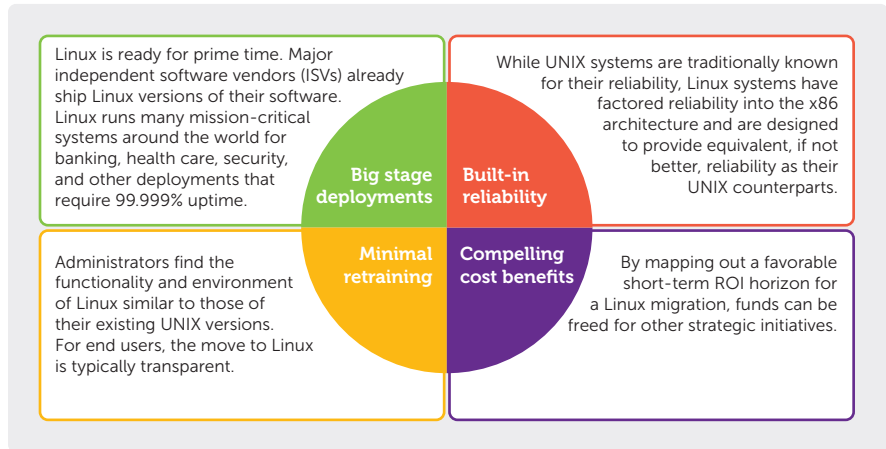

Figure 1. Considerations for moving to Linux

Linux is ready for prime time. Major independent software vendors (ISVs) already ship Linux versions of their software. Linux runs many mission-critical systems around the world for banking, health care, security, and other deployments that require 99.999% uptime.

Big stage deployments

Built-in reliability

While UNIX systems are traditionally known for their reliability, Linux systems have factored reliability into the x86 architecture and are designed to provide equivalent, if not better, reliability as their UNIX counterparts.

Administrators find the functionality and environment of Linux similar to those of their existing UNIX versions. For end users, the move to Linux is typically transparent.

Minimal retraining

Compelling cost benefits

By mapping out a favorable short-term ROI horizon for a Linux migration, funds can be freed for other strategic initiatives.

cost of reconnecting interfaces broken by migration, impact of migration on the user community, leverage obtained by the salvage value of the hardware, reduced energy consumption for cooling, and other migration-induced changes.

Why it makes sense to converge on an open, cost-effective platform

Convergence has brought together IT professionals driven by the common goal of Linux migration and the promise of an enhanced IT infrastructure—making a case for the operational and cost benefits of the migration. To help plan a successful UNIX-to-Linux migration, organizations can explore the alternatives with vendors offering broad-based experience and deep expertise. Linux

migration provides a way for organizations to move beyond the challenges of maintaining legacy UNIX systems toward the scalability, flexibility, and cost-efficiency of an open, x86-based Linux system. PS

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