

**E-Guide**

# Server OS Buyer's Guide

Vendor-neutral tips for choosing the best server operating system for your organization

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**Traditionally, choosing a server operating system meant simply selecting between Windows or Linux. However, now organizations have a plethora of choices and customization options, making it more critical than ever to utilize the right one to stay competitive.**

*Fortunately, this brand-new guide can help— inside, explore the pros and cons of each server OS option and review a long list of key considerations you must keep in mind when making your decision.*

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## Choosing the best server OS: Linux vs. Windows comparisons

**By: Logan G. Harbaugh**

In a way, server operating systems are simpler than workstation OSes. They don't need to support as wide a variety of accessories and generally don't need to run as wide a variety of applications. On the other hand, the applications they run, such as databases, Web servers, email servers, collaborative applications and application servers, can stress both the server OS and the hardware. So choosing the best server operating system can be a trial.

Ten years ago, there were two main choices for a server OS running on commodity hardware: Novell's NetWare 4 and Microsoft's Windows NT. Today, Windows 2008 is still a solid choice, and although NetWare has disappeared into history, Novell's version of Linux is a good choice as well. On the proprietary side, the options are much the same as they were 10 years ago: Unix variants that run on proprietary hardware from Sun, IBM, SGI and others.

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Choosing the best server operating system depends largely on a server's function. The easiest choice for a file-and-print server that supports Windows clients running Microsoft Office is Windows 2003 or 2008. While it's possible to support Windows file shares and run a server collaboration application that supports Outlook on a Linux server, it's more complex to set up and run smoothly. On the other hand, a file server supporting Linux workstations or an outward-facing Web server or application server is no more difficult to set up on Linux than on Windows and will probably be more secure in the default configuration and less of a pain to maintain over time.

### **Windows vs. Linux: Installation, maintenance and security**

Both Windows and Linux offer pros and cons. Windows is easy to install and run in its default mode, includes an array of drivers for virtually any type of hardware and has the widest variety of software available. On the other hand, it suffers from frequent security problems and requires critical patches that usually involve rebooting. It is also expensive, from the initial purchase price of the OS and applications to the ongoing maintenance required to keep it stable and updated. Linux requires careful consideration of available hardware drivers that are appropriate for your hardware (including the motherboard) and whether newly released hardware (such as Intel i7 motherboards) is supported for. It also requires more knowledge to install and run the OS and applications. But at the same time, Linux is generally more stable and secure than Windows, especially the Enterprise editions available from Red Hat and Novell, which use kernel versions that are long-standing enough to have become completely stable.

### **Other OS considerations: Pricing, support and specialized options**

Both Windows and Linux offer a sometimes bewildering variety of options. On the Microsoft side, we have Windows Server 2003 in Standard, Enterprise and Datacenter editions, with 32- and 64-bit versions of each, in addition to specialized options like the SMB edition (for small and medium-sized businesses). Windows Server 2008 presents similar options. Pricing can vary dramatically depending on the number of copies purchased and

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whether you sign up for the yearly maintenance agreement or the Enterprise-volume licensing plan. Linux has an even greater variety of options. Server-oriented versions of Linux are available from vendors such as Red Hat and Novell SUSE with 24/7 support and other options. Less expensive versions can be found at Xandros, MEPIS and CentOS, among others, while free versions such as Debian, Ubuntu and Red Hat's Fedora offer a low-cost way to get started.

From the most to least expensive, the biggest difference between Linux versions is not the quality of the software or the available drivers, but rather the support. If you're willing to dig into online support forums, you may find that you can get quicker support for some free versions than you can with commercially supported versions. But it is reassuring to have a 24/7 support number to call, especially in a corporate environment. Buying hardware and an OS together can also guarantee that all installed hardware is supported. Otherwise, it may require research to ensure that the motherboard, chipset, RAID adapter, network adapter, Fibre Channel host bus adapter and other elements are supported by the Linux version you're considering.

There are other non-Linux options for commodity servers, including BeOS, OpenSolaris and several Berkley Software Distribution variants. These server OS options offer better protection against hackers and security, but they are even more limited than Linux in terms of hardware and software supported by the OS.

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## Compare popular Linux distributions for servers

**By: Sander van Vugt**

There is no single best Linux distribution for every enterprise's servers. It all depends on what your company needs.

Today, Linux is more than a free OS to mess around with -- it runs core business applications. When comparing the most popular Linux distributions, corporate Linux users care about support throughout the stack, not just an attractive feature set.

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Server administrators worry about the maintenance lifetime and support on an OS. Maintenance lifetime is the length of time that the Linux distribution provider patches and updates the product. Support comes in three different forms: support for applications, support for hardware and support for troubleshooting. Linux users in an enterprise data center willingly pay for the best maintenance and support.

### Free Linux distributions

Any company can run a free and open source Linux distribution in an enterprise environment, but most have serious restrictions. In particular, the maintenance lifetime of most free distributions is limited. The popular OpenSUSE distribution, for instance, has an 18-month lifecycle, meaning that a security issue that occurs 24 months after the initial release date will go un-patched. And it takes about 18 months to get a Linux distribution approved for use in the corporate world. Distributions with such a short life cycle aren't even worth considering.

Also avoid distributions with maintenance periods that might change. An enterprise-grade Linux distribution needs to be well organized. If it only relies on an open source project, the project might split up or be acquired by a vendor, eliminating your support lifetime.

### Settle your software differences -- ask for support

The popular supported enterprise Linux distributions are Red Hat Enterprise Linux (RHEL), Ubuntu Long Term Support (LTS) from Canonical, SUSE Linux Enterprise Server (SLES) and Oracle Unbreakable Kernel.

It's not really about software differences when selecting the best Linux distribution for your organization. All Linux operating systems use more or less the same open source components, especially where it really matters.

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What does make a difference is support on these features. Verify that the main features your enterprise uses are supported by -- not just technically feasible on -- the distribution. For example: Your server infrastructure relies on Linux container virtualization (LXC). SLES offers LXC to run many instances of the operating system on the same kernel. LXC isn't supported on RHEL, so even if technically you can run it, Red Hat would not offer support for the containers.

An enterprise Linux distribution must offer stable software for the version your organization uses. Check the distribution's website to see if the latest version of a software package is included by default. These lists change frequently so check whenever you are making an OS decision, even if you checked the lists a few months prior.

Enterprise Linux distribution pricing can be confusing: You don't pay for the software, but for the support, which differs for each distribution. Ubuntu offers free patches, whereas other vendors charge for such support. All vendors offer a base support package through full-scale premium support. Oracle or Red Hat support tend to cost the most, but the price you pay in the end depends on many circumstances.

**Red Hat Enterprise Linux.** Red Hat has an estimated market share between 65% and 80% of enterprise distributions. RHEL entered many data centers via support deals with hardware and software vendors, an approach emulated by other Linux distributions.

The company employs more developers than other supported-Linux vendors. Therefore, Red Hat plays an important role in many open source projects. If your company wants to adopt cutting-edge open source platforms, it makes sense to standardize on Red Hat.

Red Hat offers many products that can be used to provide a complete open source infrastructure, notably Red Hat Enterprise Virtualization and Red Hat Cloud. Red Hat also provides the JBoss middleware platform, which corporate IT teams use to develop applications.

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Red Hat makes it hard to access its software for free, so it has spawned rip-off distributions like CentOS and Scientific Linux. Now that Red Hat controls CentOS, its future as a free recompiled Red Hat operating system is uncertain.

**SUSE Linux Enterprise Server.** SUSE estimates that about 25% of corporate Linux users run its SLES distribution, making it the second-largest supported Linux OS.

SUSE focuses on specific business verticals and partners with other major industry vendors like SAP and VMware. VMware customers get SLES free with VMware ESXi, and SUSE is the preferred platform for SAP. Microsoft also endorses SLES for its customers that need to use Linux, and has renewed that support through 2016. That interoperability partnership started in 2006 and led to Microsoft introducing SUSE Linux to its customer Wal-Mart Stores Inc.

From a technical perspective, SUSE Linux is more accessible than the other supported Linux distributions. SUSE is also the most administrator-friendly. Its integrated YaST platform makes complicated management tasks on Linux easy to perform. SUSE is the main developer on Pacemaker High Availability, the standard tool for high-availability clusters in all current Linux distributions.

Unlike Red Hat, SUSE doesn't offer its own virtualization platform. It does offer SUSE Cloud, which is based on OpenStack, and SUSE Manager, which helps patch and manage dozens of SUSE and Red Hat deployments from a centralized interface.

**Ubuntu LTS.** Ubuntu started as a free distribution. Canonical, the company backing Ubuntu, came along later to offer professional services around the distribution. Companies that want to run Ubuntu LTS in a supported environment should contract with Canonical, but those that are solely interested in using the software and getting updates for a guaranteed amount of time can download and install Ubuntu for free.

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When installing Ubuntu as a server platform, use the Long Term Support version. Patches will be available for at least seven years for LTS, where the availability of patches for regular versions, which come out on a faster update cycle, is much more limited.

Ubuntu's desktop OS is famously easy to use, but that is not so with the server version. Most management tasks are performed the hard way, by modifying configuration files, running commands and starting processes. For some users, this is a real disappointment.

Ubuntu is based on Debian Linux, a distribution popular with developers and in educational environments. Debian doesn't offer enterprise support, but by using Ubuntu LTS, customers can get it anyway.

**Oracle Linux.** Oracle's Unbreakable Kernel started by modifying the open source RHEL software to make a platform for Oracle databases.

Apart from companies that are running Oracle databases, Oracle's distribution hasn't been a huge success. It typically comes into the data center if the database administrator decides which Linux OS to use. Even still, many companies already have a Linux policy and a standard distribution that predates Oracle's open source initiative. This means plenty of Oracle databases still run on SUSE and Red Hat distributions, where it is supported.

Apart from Oracle VM, a Xen-based virtualization platform, Oracle doesn't have many open source products to complete its platform. Oracle also owns the Solaris operating system, which makes Oracle Linux less important.

### And the winner is?

Red Hat is the best choice for companies that need a server platform to run their own applications. It's also the winner for many companies because it's the biggest and strongest brand. Even if, from a technical or integration perspective, a company might be better off using SLES or Oracle Unbreakable Kernel, they stick with RHEL because it's reliable software from a reliable company. Ubuntu's parent company Canonical seems to have a



hard time convincing Fortune 500 businesses of its prowess, limiting adoption there.

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Sure, RHEL is the most popular Linux distribution, but are you in an Oracle shop and only care about running Oracle databases? Then Oracle Linux is the best choice for you. Do you want a sharp price, easy administration and a Linux OS that integrates well with Microsoft environments? Look into SLES.



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