

# RED HAT ENTERPRISE LINUX AS A PRINT SERVER

**Print servers are a key part of every organization's IT infrastructure, providing users and applications with access to shared printers. Print servers help where many printers need to be used, especially across multiple office locations.**

A print server lets printers handle multiple job submissions, for example, when 50 people submit requests to a color printer at the same time. A print server lets these jobs be put into a managed queue, so users do not have to use the print queue mechanism (available as part of most operating systems) and leave their computers powered on until print jobs are done or wait until the current job is done before resubmitting their request.

You're familiar with Red Hat products that provide general-purpose environments for server-based software applications or desktop/workstation users. But did you know that Red Hat Enterprise Linux can also be used as a print server?

Sharable higher-end printers can deliver features and quality not available on lower-end machines, such as high-quality color output, job queuing, and input and output handling features.

Without print servers, users often have to be responsible for finding and installing device drivers on each computer they use. And configuring each printer properly can be difficult. Microsoft® Windows® clients may not have authorization to add printers directly. Print servers minimize or avoid these problems.

By allowing users to easily share printers, you can use workgroup and departmental printers, instead of a larger number of individual and small-group machines. Consolidating to a smaller number of higher-performance, higher-quality printers, you can give employees faster, better printing, and more features, while achieving considerable savings in ink, paper, toner cartridges, floor/desk/table space, and maintenance.

The average small or medium business can easily spend \$10,000 - \$20,000 each year on out-sourced color document printing. Even a low-end multifunction color laser printer (<\$1,000-\$3,500) can often reduce these external costs by 33-50%. Shareable printer devices are increasingly multi-function (print, copy, fax, scan), resulting in further consolidation savings.

A print server based on Red Hat Enterprise Linux:  
Allows you to replace older Windows-based machines or expensive-to-maintain Unix®/Solaris® systems with new commodity-priced hardware that delivers high reliability, availability and performance.

Offers out-of-the-box cost-effective solutions to your print serving needs, whether you are using

low-end servers to repurpose older hardware or deploying high-end, high-performance servers to support large user bases, many printers, and high print request volumes.

Reduces the loads on client computers and on file servers, improving their productivity and improving printing performance.

A Linux-based print server can act as a starting point for companies considering migrating to Linux for its reliability, flexibility, cost, and other benefits. For companies already running Linux workstations, network security, or application servers, Linux-based print servers leverage your management tools and staff expertise.

## Features

To support your organization's performance needs, Red Hat Enterprise Linux print servers run on a wide range of hardware. The hardware can be an existing machine that is repurposed, a new commodity-based server, or a high-end, high-performance machine.

Red Hat Enterprise Linux print servers support your organization's performance needs by supporting Windows, MacOS®, Linux and Unix client systems with these components:

- Common UNIX Printing System (CUPS), which works with Linux, Unix, Solaris, MacOS X client systems
- Samba, which works with Windows, Linux, Unix, and MacOS clients. Use Samba networks running Microsoft's Active Directory.

CUPS is intended to be a simple method for setting up network and local printers. Many printers, even inexpensive (\$200+), support CUPS. The printer drivers included with Red Hat Enterprise Linux are more than sufficient for most companies' printing needs.

A Red Hat Enterprise Linux machine running both CUPS and Samba can simultaneously act as a print and file server.

Both CUPS and Samba are mature, well-established technologies. CUPS is the recommended spooler for all Linux distributions. Red Hat Enterprise Linux uses CUPS as its default printing system.

Red Hat Enterprise Linux includes the Printer Configuration Tool (`systemconfigprinter`) for configuring printers. Once your Linux server is configured as a print server, with printers attached and drivers installed, Windows users can browse printer (and file) shares in Network Neighborhood.

A Red Hat Enterprise Linux print server allows the following types of print queues to be configured:

- Locally-connected - a printer attached directly to the computer through a parallel or USB port.
- Networked CUPS (IPP) - a printer that can be accessed over a TCP/IP network via the Internet Printing Protocol, also known as IPP (for example, a printer attached to another Red Hat Linux system running CUPS on the network).

- Networked UNIX (LPD) - a printer attached to a different UNIX system that can be accessed over a TCP/IP network (for example, a printer attached to another Red Hat system running LPD/LPR on the network).
- Networked Windows (SMB) - a printer attached to a different system that is sharing a printer over a SMB (Server Message Block) network (for example, a printer attached to a Windows machine).
- Networked Novell (NCP) - a printer attached to a different system that uses Novell's® NetWare network technology.
- Networked® JetDirect® - a printer connected directly to the network through HP® JetDirect instead of to a computer.

### **Benefits of a Linux-based print server**

Linux systems have consistently earned a reputation for being highly stable and reliable. Most of today's gateway and security appliances use Linux, with the expectation that the user will never have to touch the operating system.

Key benefits of using Linux include:

#### **Price Scaling.**

Linux servers offer low entrance cost in terms of server licenses and no per-client costs as you add more printer-sharing user clients to the network.

#### **Lower associated software costs.**

Windows offers print server capabilities; however, to support several print servers on a medium-size network of several hundred people, Windows will require Active Directory-- which requires server licenses—to be installed before you can provide print sharing.

#### **Comparative high performance.**

While Windows can be fast, its kernel must be large to provide the variety of services users may want to employ. Linux lets system administrators remove services that aren't needed, which eliminates unproductive loads on the hardware.

#### **Easier, more comprehensive maintenance.**

Having source code available means your organization can inspect code. Monitoring, debugging and performance tuning are much easier and more effective. And let's not forget troubleshooting.

#### **Ideal for server consolidation and virtualization.**

Running your print servers on Linux lets you consolidate distributed Windows and Windows server workloads. This helps reduce the cost of maintaining and administering systems.

Linux is also a good candidate for server virtualization using server virtualization utilities such as Xen. Virtualization lets you consolidate multiple print servers, or a print server and other types of servers, on a single, larger machine more securely, and with easier, more

flexible control over performance allocations.

### **Implementation and optimization**

Setting up a Red Hat Enterprise Linux machine as a print server is simple and straightforward. When you do the install, if the printer is attached and powered on, the installation process will select a driver and ask whether you want to configure the printer. At this point, you'd select "print server." If adding a printer to an existing Red Hat Enterprise Linux system, simply enable "sharing" in the printer configuration. "Sharing" means that the system will accept jobs from other machines on the network.

### **Benefits of a Red Hat Enterprise Linux print server**

Red Hat Enterprise Linux offers numerous benefits for IT departments looking to make use of Linux for their server platform. We provide a framework that is a foundation for IT services, including file, print and web serving, that can be used and moved on a range of operating systems and hardware environments.

Red Hat includes utilities, tools, documentation, support, and other value-added services. Red Hat extensively tests all software included in its Enterprise offering. This testing, bundled with support services, adds value to customers, especially to businesses and other organizations where confidence in service and support is as important as the software itself.

### **About Red Hat**

Founded in 1993, Red Hat is the premier Linux and open source provider. Rated as CIO Insight Magazine's Most Valued Vendor for the second consecutive year, Red Hat maintains the highest value and reliability rankings among its customers, and is the most recognized Linux brand in the world.

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