



White Paper

FaxPress™ and FaxPress Premier™ Network Fax Servers
In a RedHat™ Linux Environment

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Executive Summary

Moving from manual faxing to computer-based, network faxing with a Castelle fax server represents one of the most cost-effective, productivity-enhancing improvements available to your organization. Castelle's network fax servers take care of fax jobs more quickly, accurately and inexpensively than any standalone fax machine. Sending a fax with a Castelle fax server takes less than one tenth of the time sending a fax manually does. In fact, the higher your fax volume, the more money, time, and manpower a FaxPress or FaxPress Premier server will save you.

Castelle's two fax server product lines, the FaxPress and the FaxPress Premier, offer every possible computer-based, network fax option: desktop PC faxing, production faxing, fax and email integration, workflow application integration, as well as tools for developing custom fax applications.

The FaxPress and FaxPress Premier product lines provide network fax solutions tailored to meet the needs of the Linux-based organization, whether it's a small business or a large enterprise with thousands of users. The FaxPress product line provides analog fax servers for small and mid-size organizations. The five analog FaxPress servers range from an entry-level, single-line unit to a higher-end, eight-line server, and include the FaxPress SBE (Small Business Edition), FaxPress 2500, FaxPress 5000, FaxPress 7000 and 7500. The FaxPress 8.x Linux installation script, located on the FaxPress 8.x CD, offers straightforward and convenient Linux integration. Or, the FaxPress Linux Installation and Integration Guide, also provided on the FaxPress CD, gives detailed instructions regarding manual integration.

The FaxPress Premier product line provides both analog and digital fax servers designed for mid-size to enterprise-level organizations. The two FaxPress Premier servers, the FaxPress Premier Analog and the FaxPress Premier Digital, provide unmatched scalability for the growing enterprise. The FaxPress Premier Analog, for use with analog phone lines, supports 4 fax lines, with upgrade packages enabling scalable support for 8, 12 or 16 analog fax lines. The FaxPress Premier Digital products provide fax support for fractional T1, T1, E1 and ISDN lines. In a Linux environment, the FaxPress Premier, with its embedded Windows SAK 2.0 OS, functions just like a Windows client.

Companies of all sizes find Castelle's wide range of APIs a convenient way to develop and deploy custom fax applications using their choice of operating systems and programming languages. The companies using Castelle's FaxPress and FaxPress Premier fax servers include government, manufacturing, financial, automotive, travel, insurance and health care organizations. All of them rely on their Castelle fax servers to handle business-critical and potentially sensitive information, where the received document must be uneditable and an exact replica of the original. Sales quotes, invoices, purchase orders, contracts and lab results are just a few examples of the kinds of information Castelle customers prefer to fax using their servers. With computer-based, network faxing, senders know without a doubt whether or not faxes have been delivered successfully. Messages are either sent successfully, or the fax server transmitting the fax alerts the sender.

FaxPress and FaxPress Premier features include:

- Inbound and outbound faxing from within most email applications.
- Document delivery to both fax and email recipients simultaneously
- Faxing straight from desktop applications
- Fax Reporting
- Fax management, transmission tracking, and notification features (i.e. fax history, sender, time sent, destination address, bill-back codes, document delivery status, etc)
- Inbound routing to groups' or individuals' fax or email boxes, shared network folders, or printers
- Scheduled broadcast/batch faxing for reduced document delivery costs
- Fax archiving, eliminating the need to keep faxed copies of documents
- Least-cost fax routing, to minimize telephone charges

Additionally, FaxPress Premier fax servers offer:

- A secure web interface, allowing remote access to end-user and administrative fax functions
- The FaxPress Premier Web Services SDK, giving developers the ability to create their own 128-bit, SSL encrypted custom fax and production fax applications, and also includes sample clients, with source code provided, written in Java, C++, C#, Visual Basic, and Perl.

Castelle's server-based rather than per-user based licensing allows an unlimited number of users at no additional expense. Thanks for including Castelle in the search for your organization's network fax server.

About Linux, SMB and Samba

Linux is a multi-user, Unix-like operating system that includes a graphical user interface, an X Window System, TCP/IP, the Emacs editor, and other components typically found in a comprehensive Unix system. Open and extendible by contributors, Linux allows developers to write programs that can be ported to other operating systems. Linux comes in versions for all the major microprocessor platforms including the Intel, PowerPC, Sparc, and Alpha platforms, plus IBM's S/390. RedHat, Inc. and a number of other companies distribute Linux commercially.

The Server Message Block (SMB) protocol, frequently used to integrate Microsoft desktop/servers with Linux servers, allows client applications to read, create, and update files on the remote server. SMB protocol can be used to communicate with any server program that is set up to receive an SMB client request. Using the SMB protocol, an application (or the user of an application) can access files at a remote server as well as other resources, including printers, mailslots, and named pipes.

Microsoft Windows operating systems since Windows 95 include client and server offer SMB protocol support. For Linux and Unix systems, a shareware SMB program, Samba, is available. Samba is a suite of programs, allowing UNIX-based operating systems to provide SMB service on top of NetBIOS over TCP/IP. Like Linux, Samba is also freely distributed under the GNU General Public License. Samba is provided on CD 1 of the RedHat software or may be downloaded from the official Samba web site at <http://www.samba.org>.

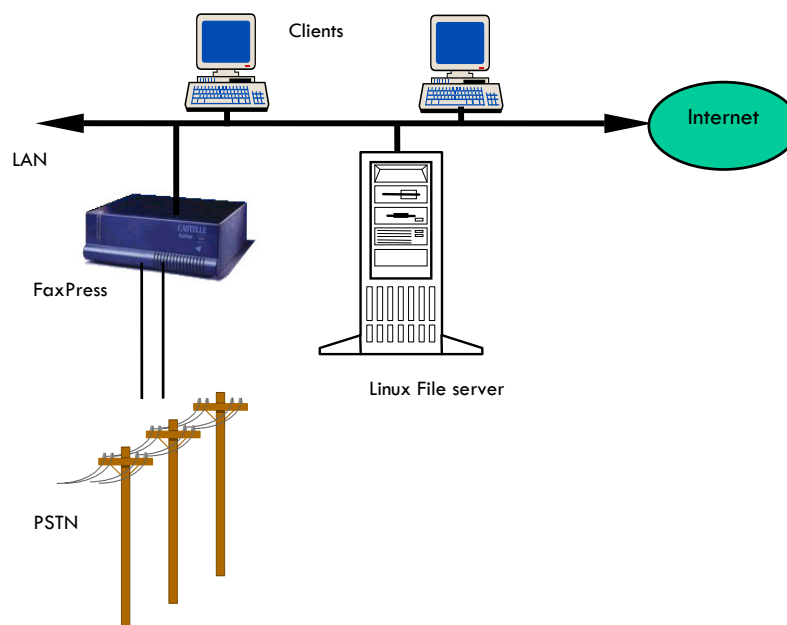
SMB is a very robust protocol, which allows the client to recover in case of a loss of connection to the server. Castelle has long used the SMB protocol to connect to Microsoft networks. This same protocols is now used to allow the FaxPress to connect to a Linux server.

FaxPress Premier in the Linux Environment

With integrated file storage for system and fax data files, a multitasking embedded Windows SAK 2.0 operating system and pre-installed FaxPress Premier server software, the FaxPress Premier Analog and FaxPress Premier Digital behave just like other Windows-based computers in a Linux environment. Enabling SMB on the Linux server and the FaxPress Premier is the only requirement for operating FaxPress Premier in a Linux environment.

FaxPress in the Linux Environment

FaxPress requires 40 MB of disk space on an existing network file server or workstation for the 8.0 server software and file storage. System files required for the FaxPress to boot up, transmit, receive and store faxes, access phone books, cover pages and FaxPress user information are stored on the Linux server in a directory called **castelle**. Since the FaxPress server uses SMB protocol to log on to the Linux server and access the castelle directory files, Samba must be configured for your environment.



The FaxPress client software, installed on user workstations, provides a convenient and intuitive faxing interface for users. Acting as a server on the network, FaxPress provides its client workstations with access to incoming and outgoing faxes, phonebooks, transaction logs and other fax-related data. FaxPress supports users from multiple file servers. Users from any file server can communicate with the FaxPress as long as they have a correctly configured FaxPress user account.

FaxPress and Linux Integration Requirements

Linux server, FaxPress server and network requirements for the FaxPress/Linux integration are as follows:

Linux environment:

PC Hardware capable of running RedHat Linux 6.0 or later: -
Linux Kernel 2.2 or later.
Samba 2.0.3 or later.

FaxPress environment:

FaxPress Server Hardware capable of running FaxPress 6.2 or later.

Network environment:

10/100Base-T network

FaxPress and Linux Integration Procedures

Linux provides a stable platform for the FaxPress server, with minimal configuration required. The server-side FaxPress Linux integration procedure is defined for RedHat Linux 6.0 based on Linux Kernel 2.2 using SMB support provided by Samba version 2.0.3. Although this procedure should work with other distributions and more recent versions of Linux, FaxPress is currently only certified to run under RedHat 6.0 and Samba 2.0.3.

In order for the FaxPress to work with Linux, it must be connected to the same segment as the Linux file server. Both the Linux server and the FaxPress server must also be assigned a static IP address. Samba must be installed and functional on your Linux server, and the Windows clients must be able to login to the Linux server.

The FaxPress setup for Linux involves two steps: First, an intelligent Linux server installation script automates the Linux configuration. (This configuration may also be performed manually.) Next, on a Windows 98/Me, NT or 2000 workstation, a Microsoft Windows verification and FaxPress server software setup is run from the FaxPress 8.x CD.

About the FaxPress Linux Installation Script

The FaxPress install script for Linux, a Unix shell script, is supplied on the FaxPress 8.x CD. Castle recommends using the FaxPress installation script for Linux, although the FaxPress Linux Integration and Installation Guide on the FaxPress 8.x CD also provides step by step instructions for manual configuration. The Linux installation script performs the following functions, which may also be performed manually:

1. Creates a group for the FaxPress server called faxpress. A group is created to allow easy directory privileges to be set for single or multiple FaxPress servers installed on the same Linux server.
2. Creates a FaxPress directory called castelle. A prompt will allow you to specify the location used to create the new directory. The FaxPress will use this directory to store its files necessary for operation.
3. Changes ownership of the castelle directory e.g. /home/castelle to root with group castelle.
4. Changes the access mode of the **castelle** directory to user=rwx, group=rwx other=x.
5. Creates a user account for the FaxPress based on the FaxPress serial number, using the useradd command.
6. Sets a password for the FaxPress serial number user account. The script will set a Unix password and a SMB encrypted password incase users are using Microsoft Windows 95b, 98, NT4 sp3 or above or Windows 2000 clients to login to Samba to complete the verification, file copy and FaxPress server setup. Encrypted passwords are not necessary for the FaxPress to login as FaxPress uses plain text passwords.

7. Creates a share called **castelle**, the install script will edit the `/etc/smb.conf` and append to the end of the file a section for the share. This file can be edited manually either with `vi` as a Unix command or a GUI editor if you prefer.
8. The Samba service will then be restarted. It should only disturb access to Samba for a matter of seconds, causing minimal service disruption, if any. Users will not be logged off.
9. A text file called `linux.log`, created in the Castelle directory, allows the Windows-based setup to configure the FaxPress server. This will also test whether an SMB client can connect to the Castelle share.

Pre-sales Support and Additional Information

If you need additional, more detailed information regarding the FaxPress/Linux integration, feel free to contact Castelle sales. For a comparison of the FaxPress Premier and FaxPress product lines, refer to Castelle's network faxing white paper, **Network Faxing with FaxPress™ and FaxPress Premier™: Which Castelle Fax Server Is Right For You?**

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