

INFOBrief

Dell Laser Printing in Non-Microsoft Environments

Scope

This document is intended to provide a general understanding of Dell laser printer compatibility and support for non-Microsoft environments. This includes the Linux, UNIX, Novell, and Macintosh operating systems. It also provides an overview of the SAP and Citrix application environments. Details for where to find appropriate drivers are also outlined.

This information only pertains to Dell laser printers. Inkjet and other technologies are not included. Importantly, this is not intended to be a technical support document. For more detailed information, please review the spec sheet for a particular product or go to Dell's product support site, www.support.dell.com, for the most current product information.

Overview

The typical enterprise or established medium-sized business customer has an IT infrastructure that has become complex through years of growth, diversification, and acquisitions. Large corporate and government entities have environments consisting of multiple operating systems, a variety of networking protocols, and distributed applications across multiple geographic locations.

Operating systems, such as Microsoft XP or Linux, provide a software platform on top of which application programs can run. They perform basic tasks such as recognizing input from the keyboard, keeping track of files and directories, and controlling peripheral devices such as printers.

The network protocol defines a common set of rules and data protocols that computers and peripherals must use to communicate across a network. Peripherals such as printers must therefore be compatible not only with the operating system of the computer but also the network protocol by which it is communicating.

As a result, customers with heterogeneous environments consisting of multiple operating systems and networking protocols will have questions regarding the compatibility of Dell laser printers with their IT infrastructure. Dell laser printers are primarily designed to work using Microsoft operating systems. Within the Microsoft environment, printers will exhibit full functionality and full technical support can be expected.

In non-Microsoft environments, Dell printers will typically display a range of functionality depending upon the environment, printer model, and type of driver being used. It is not the purpose of this document to detail all scenarios, rather to outline general compatibility.

Laser Printer Compatibility & Support

The following chart shows Dell laser printer compatibility by model with each operating system or application. Compatibility does not guarantee full print functionality as compared to the functionality in the base Microsoft driver, but rather general print capability in the listed environments.

	1320c	3110cn /3115cn/ 5110cn	1720/dn	1815dn	5310n / 5210n
Linux	NO	Red Hat 8 / 9, SUSE Linux 9, TurboLinux 10	Red Hat Enterprise Linux WS 3 / 4, SUSE Linux 9, SUSE Linux Enterprise Server 8 / 9, Linspire 4.5, Debian GNU/Linux 3.0, Red Flag Linux Desktop 4.0 (Simplified Chinese)	Red Hat 8 / 9, Fedora Core 1-3, Mandrake 9.0-10.2, SuSE Linux 8.2-9.2	Red Hat Enterprise Linux WS 3 / 4, SUSE Linux 9, SUSE Linux Enterprise Server 8 / 9, Linspire 4.5, Debian GNU/Linux 3.0, Red Flag Linux Desktop 4.0 (Simplified Chinese)
Unix	NO	Solaris 10, HP-UX 11i	NO	NO	IBM AIX 5, HP-UX 11, Sun Solaris SPARC 7, 8, 9, 10
Novell	NO	3.x, 4.x, 5.x, 6.5	(3.x, 5.x, 6.x TCP/IP only)	6.x	3.x, 4.x, 5.x, 6.x
Mac	NO	Mac OS 9 (v9.2), Mac OS X (v10.2)	Mac OS X (v10.2, 10.3) Mac OS 9 (v9.2)	Mac OS X	Mac OS X (v10.2 - 10.4) Mac OS 9 (v9.2)
SAP	NO	PS, PCL 5 SAP supported driver	Compatible	Compatible	PS, PCL 5 SAP supported driver
Citrix	NO	Citrix Ready Certified Citrix Metaframe Presentation Server 4.0 and 4.5 (32-bit and 64-bit) <i>*3115cn certification expected end 2007.</i>	Citrix Ready Certified Citrix Metaframe Presentation Server 4.0 and 4.5 (32-bit and 64-bit)	NO	Citrix Ready Certified Citrix Metaframe Presentation Server 4.0 and 4.5 (32-bit and 64-bit)

Table 1. Dell Laser Printer Non-MS OS Compatibility

Dell support of non-Microsoft drivers is limited and varies both by printer model and by geographic region. For specific support information, please see your local sales team about your geographic region's product support.

Even though Dell's support of these drivers is limited, for customers with Gold or Platinum service agreements, Dell technical support will attempt to assist customers to the best of their abilities with the understanding that Dell's service is Microsoft centric.

As business grows, additional multi-OS support may be added as dictated by the demands of the business. For the latest support information, please go to www.support.dell.com.

Non-Microsoft Operating Systems

Linux

Linux is one of the fastest-growing operating systems in the server space. There are many versions of Linux including those offered by Red Hat® and SUSE®.

Red Hat and SUSE are common Linux implementations in large enterprises. Novell recently acquired SUSE Linux and has incorporated Novell Network's network, management, and administration services into SUSE. Both Red Hat and SUSE Linux are available from Dell.

Linux compatibility with Dell laser printers is handled via Common UNIX Printing System (CUPS). Dell supports the most popular of these Linux versions. However, print functionality in Linux may be more limited than in Windows, with some advanced Windows driver features being unavailable. See Table1 for a listing of compatibility based on product model.

Red Hat and other Linux vendors may not show printers on their hardware compatibility list since they typically don't have certification programs for printers. Even though they may not certify peripherals, the user can expect general print functionality through CUPS as described below.

UNIX

Dell does not support UNIX but there is limited printer compatibility via CUPS. Most versions of UNIX and Linux use CUPS.

CUPS provide a portable printing layer for UNIX-based operating systems. It was developed to provide a standard printing solution for UNIX and is also available in Mac OS X and most Linux distributions.

CUPS uses the Internet Printing Protocol (IPP) as the basis for managing print jobs and queues and offers network printer browsing and PostScript Printer Description (PPD) based printing options to support printing. For more information, see www.cups.org.

See Table 1 for a list of UNIX versions that are compatible with Dell laser printers.

Novell

An estimated two-thirds of existing enterprise networks include a Novell network. Netware™ is Novell's network operating system (NOS). NOS are simply operating systems that have been enhanced to include built-in networking functions. Microsoft Windows Server and Windows NT are also examples of NOS.

Microsoft products, as well as UNIX and Linux, communicate via TCP/IP (Transmission Control Protocol/Internet Protocol). TCP/IP is the protocol used by the Internet and the predominant protocol in most companies, making it the de facto standard for transmitting data over networks.

Novell has it's own proprietary networking protocol called IPX (Internetwork Packet Exchange). IPX is an older network protocol that pre-dates the commercial Internet and is becoming less widely used. As such, Novell has expanded to include support for TCP/IP.

All Dell laser printers will function in a Novell environment if they are communicating over a TCP/IP network. Novell uses Window based drivers and Dell printers support TCP/IP using Windows based drivers.

Dell is a standards-based company and TCP/IP has become the global standard. Compatibility with this standard is where Dell will focus its ongoing efforts.

Some Dell laser printers also support the IPX protocol. YES is Novell's product certification program. YES certification means compatibility and that both the product vendor and Novell will support partner products bearing the YES mark. The Dell printers in Table 2 are YES certified.

Table 2. YES Certified Dell Laser Printers

Novell Bulletin	Dell Product	Date
84237, 84238	Color Laser Printer 5110cn	6/16/2006
87075, 87076	MFP Color Laser Printer 3115cn	11/1/06
85689, 85690	Color Laser Printer 3110cn	8/29/06
88351, 88352	Workgroup Laser Printer 1720/1720dn	3/27/06
84089, 84090	MFP Laser Printer 1815dn	6/1/2006
83987	Workgroup Laser Printer 5310n	5/15/2006
P 83986	Workgroup Laser Printer 5210n	7/29/2003

inter models 1700 and 1700n, while not YES certified, are compatible but only through the TCP/IP protocol.

For the most up to date list of YES certified products, please go to <http://developer.novell.com/yesssearch/Search.jsp>.

Mac

Most Dell printers which support the PostScript printer language are supported and compatible with Mac OS. These printers are listed in Table 1. However, Dell does not provide support or guarantee product functionality when using these drivers.

Additionally, drivers may not be on the CD that ships in the printer box. Please see www.support.dell.com if this is the case. The customer may also check with a Dell sales consultant for which products support AppleTalk.

Special Note: Dell Color Laser Printers

Dell color laser printers may require additional hardware when printing with some of the less common network protocols. The multi-protocol card (MPC) is a plug-in board to the printer. This card gives the printer the capability to communicate with non-Microsoft networks using multiple network protocols regardless of operating systems.

The MPC is only required by Dell Laser Printer 3110cn and Dell Laser Printer 5110cn when printing using IPP (Internet Printing Protocol), Netware (P-server), SMB, HTTPS, WINS, DDNS, mDNS and Ethertalk. The MPC is only required with specific network protocols. See Table 3 for details on these usage environments with Dell's Color Laser Printers.

Protocol	Transport Layer	Client
IPP, SMB, DDNS, mDNS, HTTPS, WINS	TCP/IP and NetBEUI	Windows (2000, XP ,NT)
Netware P-Server	NCP/IPX	Netware 3.12, 3.2, (NDS Unsupported) 4.1, 4.11, 4.2, 5.0, 6.0, 6.5
Ethertalk	ATP/DDP	Mac OS 9, OSX

Table 3. MPC Requirements

Non-Microsoft Applications

SAP

SAP is enterprise resource planning software that integrates all facets of the business, including planning, manufacturing, sales, and marketing. Most critical business activities from inventory control to customer service to human resources are managed with this system.

All Dell laser printers, except the 3010cn, are compatible with SAP as shown in Table 1. Some Dell printers have specific SAP drivers. These drivers are not distributed by Dell, but are directly available from SAP. SAP customers can download Dell print drivers directly from the SAP support site.

SAP compatibility data for all Dell laser printers is available in SAP technical note #8928. All other Dell laser compatibility information will also be posted on SAP's support site, www.service.sap.com. The customer should work with SAP directly for driver support. Dell does not provide support for SAP specific drivers.

Citrix



Citrix develops access infrastructure for enterprise applications and is commonly used to manage remote users who will be accessing the enterprise from multiple types of devices. It is usually installed in large enterprises to host enterprise applications like SAP, Oracle, and Siebel.

Many Dell printers are certified by Citrix under its Citrix Ready certification program. Please refer to Table 1 for Dell laser printers that have been tested and validated under this program

Citrix Ready identifies recommended solutions that are trusted to enhance the Citrix application delivery infrastructure. All products featured in Citrix Ready have completed verification testing thereby providing customer confidence in joint solution compatibility. Leveraging Citrix's industry leading alliances and partner eco-system, Citrix Ready showcases

select trusted solutions designed to meet various customer needs. Through the online catalog and Citrix Ready branding program, customers can easily find and build a trusted infrastructure. Citrix Ready not only demonstrates current mutual product compatibility, but through Citrix's continued industry relationships also ensures future interoperability.

The Citrix Ready designation is awarded to third party products that have successfully met verification criteria set by Citrix.

Dell printers that successfully attained Citrix Ready certification have undergone the following tests:

1. Driver Installation Test

Install print driver being tested on all machines using strictly INF based install. This can be accomplished through the selected the "Have Disk" option of the Add Printer Driver wizard (Printer and Faxes folder, File→Server Properties →Drivers tab → Add Driver) or with a command line. Driver(s) should install without error and with no warnings resulting from use of unsigned driver packages.

2. Printer Creation/Deletion Stress Test

This test is to simulate the situation when printers are created automatically when a user session starts and deleted after a user session ends. The application verification utility is used to catch additional errors. This test also involves print testing in applications like Word, Excel, PowerPoint and PDF using the printer's native drivers and Citrix's Universal Print Driver (UPD) where the printer is:

- (i) locally attached to the client
- (ii) networked to the client
- (iii) being used as a session printer.

Sources:

1. Novell Buys Into Linux Server Opportunity, Gartner, 28 June 2004, Jeffrey Hewitt, George J. Weiss

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