



Imaging at Work®

100% Independent Analysis

Lexmark W840 50ppm Monochrome Ledger/A3 Printer



Key Buyer Benefits

Walk-up PDF printing capability directly from device front console interface using USB flash pocket drives.

Simple right-click direct PDF utility, saving users from having to open separate utilities or browsers.

Automated URL/file printing schedule utility allows commonly accessed web pages to be printed without user intervention.

Quick and easy installation of both hardware and software components.

Common interface design between PCL and PostScript drivers makes navigating between the two PDLs seamless.

User-friendly icon-driven walk through when user intervention/maintenance is required.

BERTL 4-Star Award Winner

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Product Dynamics

Overview:

The W840 was launched alongside the new T-series and workgroup C920 color printer, all as part of Lexmark's "print-less strategy". The Lexmark W840 is a 50-ppm ledger/A3 capable printer, specifically targeted for the departmental market. Despite Lexmark's marketing message, the attention to detail, user interface and unique selling features make this a printer that may make you want to print more not less. With the same newly designed console and driver interfaces as the other newly introduced Lexmark printers, its feature set includes:

- 625 MHz processor and 256 MB RAM (expandable to 768 MB)
- 5100-sheet maximum input capacity
- 10-digit keypad and graphic LCD supports graphic walk-through of user maintenance tasks
- Direct USB port interface at device for walk-up PDF, GIF, JPEG, TIFF, HTML 4.0, BMP, PNG, DCX, and PCX printing from flash USB drives
- ImageQuick comes as standard providing pull printing from file and web/URL destinations
- Extensive security options
- Finishing options that include duplexer, multi-position stapler, and 2-3 hole puncher
- True 1200 x 1200 dpi resolution at full rated engine speed
- Less than 7 seconds first page out time
- Full rated speed for duplex output
- Gigabit Ethernet and Wireless support



Target Market:

As a 50-ppm printer with 300,000 page per month duty cycle, the Lexmark W840 is aimed at the departmental market. The simple GUI interface — along with its graphic help screens — give this powerful printer a low-learning curve, increasing worker productivity. Features like ImageQuick for direct printing of files from desktops and the slick USB interface for direct printing of PDF files turns this printer into a high-throughput appliance that has the ease of use of a desktop device.

BERTL analyst hands-on with the Lexmark W840



Product Dynamics

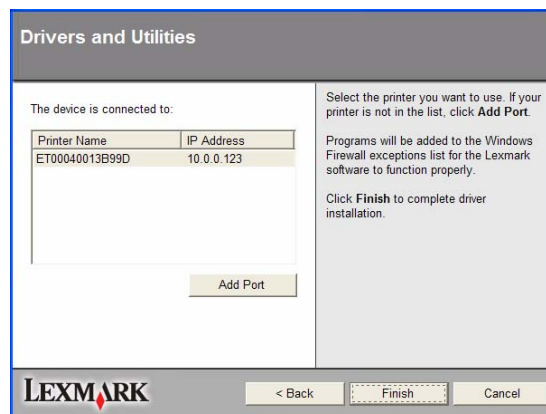
Hardware Installation:

We found this departmental device as easy to install and set-up as Lexmark's less complex workgroup printers. We did come across one issue during installation of the finisher unit. To get the paper from the left output path of the main engine over to the right-mounted finisher unit requires a bridge unit. We installed the bridge unit, installed the finisher only to find when we turned on the power that a message told us to shut the door G. Door G was displayed, using the new large screen to be the door providing access to paper within the bridge unit. However, the door in the bridge unit was not the issue here. In fact, after a period of trial and error we found out that the real problem was that the power cable connecting the bridge unit to the finisher had come unattached. While this issue caused us some irritation, we estimate that the entire hardware installation should have taken under one hour. No special tools were required, and the procedure could be tasked to a non-technical support person.

Device Driver Installation:

The installation of the device onto a PC was equally simple and quick. The Lexmark installation CD wizard asks users or the administrator to follow simple instructions that guide them through the process.

Administrators will like the ability to install the driver onto one or multiple remote PC desktop locations within a single installation process. To achieve this the administrator chooses the remote installation and then either enters the specific network location, browses across the network to the location or specifies a pre-defined list of PCs. For example, an

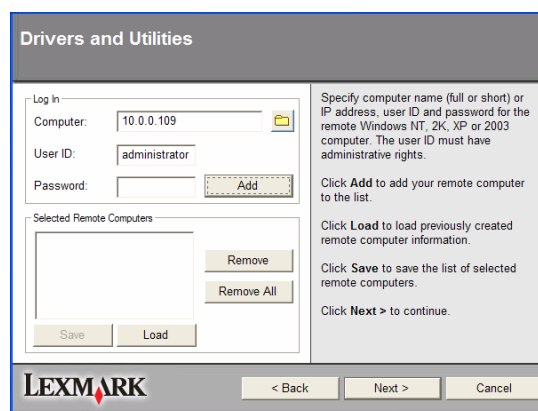


The driver installation software for the Lexmark W840 automatically discovers the Lexmark printers.

administrator could set up a list of all the PCs under the second floor sales department. He/she could give them access to the Lexmark W840, a process that, with Lexmark's installation wizard, can be achieved in a matter of seconds.

Administrators can at the same time designate which of the drivers they want to install on each PC. The installation of the driver software added only a few minutes to our total set-up time.

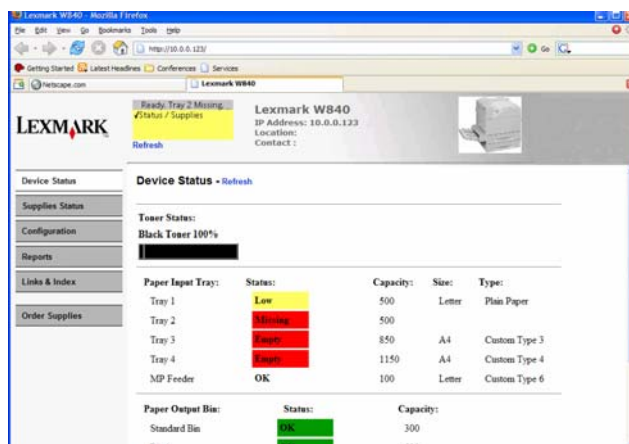
The Lexmark W840 lets you install the driver onto multiple workstations.



Device Management

Web Server:

Remote management of the Lexmark W840 can be accomplished through the device's embedded Web Server. From their browsers, administrators can monitor resource levels (toner, paper, fuser), configure network and security settings, check print statistics, and establish email alert conditions. A nice extra in their Web implementation is an emulated console display, which is automatically refreshed.



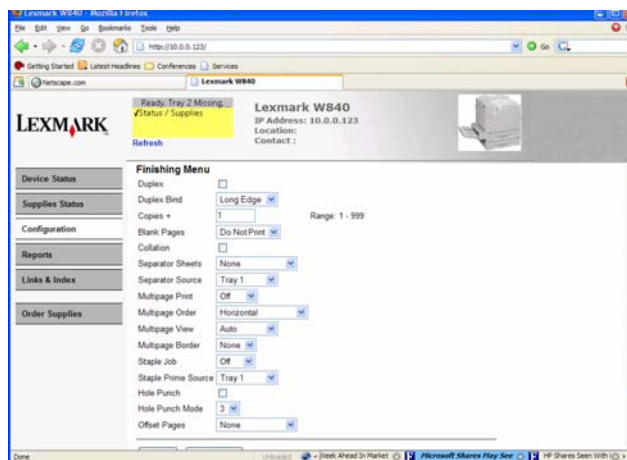
The home page for the Lexmark W840 displays the device's current status along with paper levels and toner status.

Two features that we would have like to have seen in its Web implementation are direct printing of files—the same formats available through the DragNPrint—and access to stored jobs on the hard drive. However, these minor deficiencies are more than made up by Lexmark's comprehensive remote management software, called MarkVision.

MarkVision:

The Lexmark W840 comes with a powerful Windows-based management utility called MarkVision Professional. BERTL has always been impressed with the level of functionality, integration and desk-based management capabilities available to the end user (and the IT Manager) through MarkVision.

Acting like a sophisticated NMS —Tivoli and OpenVue — MarkVision lets administrators organize printer and MFP devices into a logical categories based on MarkVision's internal SNMP-based fields. Using a folder metaphor, administrators can then quickly navigate to an area of



The Web interface lets you select finishing options, like duplexing and hole punching.

interest. For each folder, they can choose filter criteria from a set of static fields (location, paper size, etc.), or dynamic ones tied to status or resource levels. Since sub-folders inherit the parent folder's filter settings, administrators can create a hierarchy of device groupings — e.g., printers, mono printers, mono printers within the sales department, etc.

Device Management

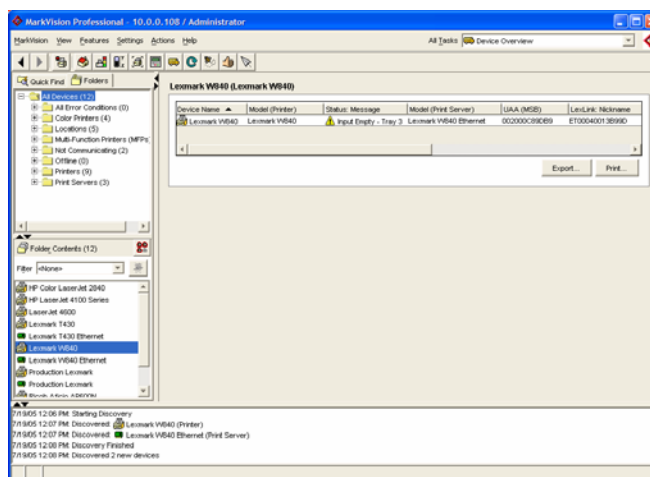
Overall, the software's features, settings and action menus provide administrators with many ways to arrange and display device data. They can also create custom "views" to display built-in graphics and tables. And they can create new tables by selecting from MarkVision's set of device fields.

MarkVision Messenger:

MarkVision is designed as server-based software and supports a Web interface in addition to the Windows one. Roving administrators can therefore manage printers remotely.

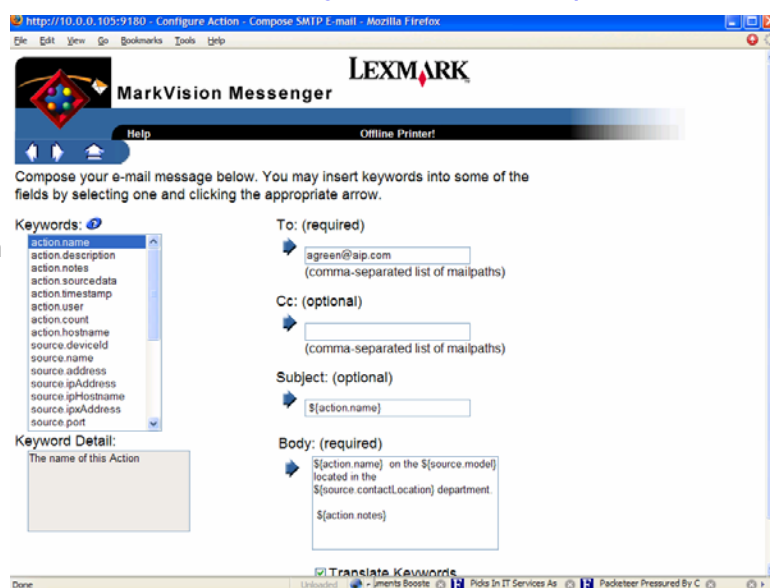
The Web interface includes MarkVision Messenger. This application allows administrators to build email alerts on a large set of conditions — e.g., finisher, defective supply, and supply life warning. Messages can include macro fields allowing device specific information to be inserted into the message text.

For convenience, MarkVision lets administrators tie alerts to individual folders containing a filtered set of devices. With a single click, alert conditions can be targeted to group devices, rather than forcing manual entry of IP address or host names.



With MarkVision, users can access preset views of the device's SNMP database.

Email messages can contain device specific information.



Device Management

Maintenance:

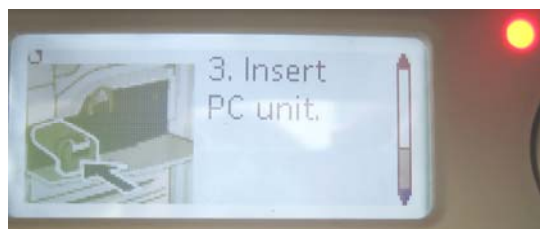
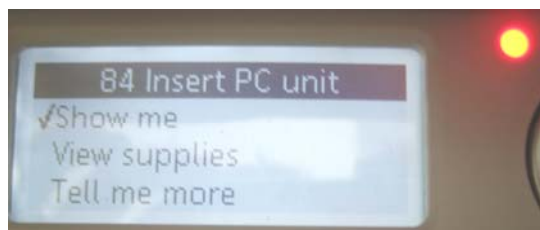
All the consumable components on the Lexmark W840 can be user-replaced without the need for sophisticated tools or a high level of technical ability. Unlike Lexmark's smaller desktop printers, the W840 uses a separate drum and toner system. This allows for greater cost per page efficiency as the drum does not need to be replaced in the event of high coverage printjobs running the device out of toner. Both the imaging drum and toner units can be easily accessed and replaced.

To aid users with user intervention tasks such as paper jams and other events, the new Lexmark interface now includes a larger LCD panel that supports icons.

This allows the device to prompt users on how to resolve issues with a walk-through series of screens actually showing the user images of the steps that need to be taken.

This is a great improvement in terms of user-friendliness compared to the text driven prompts of the past.

In the images to the right the device is talking us through how to install the imaging drum.



Toner Cartridge

Fuser Unit

Imaging Unit



Paper Handling

Input:

The Lexmark W840 comes with two 500-sheet universal drawers and a 100-sheet multipurpose tray. An optional dual input 2,000-sheet cassette (letter size only), fitting below the standard drawers, and an external 2,000-sheet high capacity feeder brings the Lexmark W840 to its impressive full complement of 5,100-sheets. The printer supports up to A3/ledger sizes.

An additional two 500-sheet universal paper drawers can be added instead of the 2,000 sheet high capacity feeder. While this reduces the overall paper capacity it greatly increases the paper handling flexibility providing users with five universal paper sources. Media flexibility is a strong point on the Lexmark with paper sizes down to 3.5" x 3.8" being supported in addition to card stock up to 110Lb. index / 200gsm.

We found that the optional duplexer, which is located on the left side of the printer, was easy to access. This is an important point since the duplex area is a common site for misfed paper.

Each universal drawer has sliding paper guides, which allow for easy realignment whenever paper sizes change. This is an advantage versus some

Lexmark W840's two 500-sheet standard and the dual 2000-sheet tray.



100-sheet multipurpose tray is found on the left side of the Lexmark W840.

The optional duplexer is located above the Multipurpose tray

competing units with precut holes that must be aligned with the paper guides.



The Lexmark's sliding guide approach makes it easier for those with physical handicaps to use the device effectively.

Finisher:

The optional 2/3 hole puncher has an output capacity of 3,500 sheets. It can staple up to a maximum of 50 sheets in each stapled set. We would have liked to have seen a saddle-stitch finishing option, a feature which is available on rival devices.

The finisher can hold up to 3,500-sheets.



Paper Handling



(Above) Replacing the staples inside the finisher unit.

(Below) The duplexer, found on the left side of the printer, can be easily accessed.



Security

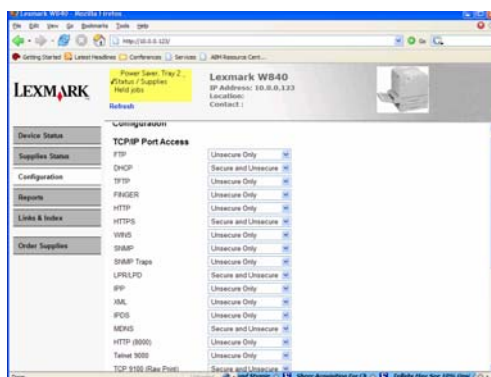
IPsec:

Through the Lexmark W840's embedded Web interface, administrators can turn on the standards-based IPsec (Internet Protocol Security) protocol. IPsec is a framework for a set of protocols for security at the network layer of the TCP/IP protocol. IPsec supports both authentication and encryption. A major advantage of IPsec is that security arrangements can be implemented without requiring changes to existing user software. For example, with Windows XP and 2000, IPsec can be enabled through the Microsoft Management Console (MMC). Networking protocols like telnet, FTP, HTTP, LPR, Discovery and others can then be secured transparently.

To enable security for the Lexmark W840, administrators must first configure how the initial authentication of devices is performed. They can choose from pre-shared keys, digital certificates, or Kerberos authentication. In many LAN environments, the pre-shared key may be sufficient and is easier to implement.

Administrators enter the same secret shared key on both the Lexmark W840 and on Windows by setting up an MMC policy.

After the device's authenticate each other they can then, depending on the policy configured, encrypt the data or print stream. The Lexmark W840



With Lexmark printers, IPsec can be enabled on a port basis.

supports DES, 3DES, and AES. These standards must be included in the Windows encryption policy for a security negotiation to complete successfully.

With authentication and encryption configured, administrators then use "TCP/IP Port Access" Web page to select which ports to enable security on. If desired, ports can be configured to accept both secure and non-secure communication.

The Lexmark supports certificates, pre-shared keys, and Kerberos authentication.



Security

Lexmark also offers a host of other security features to accommodate the need to keep information safe.

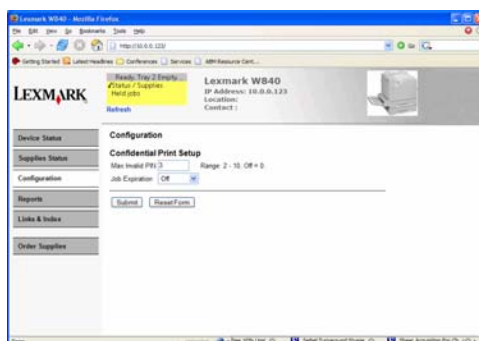
10 Digit Access

To safeguard the production and storage of documents, the new ten digit button interface now allows users to enter PIN values from 0-9, while on previous models it was limited to 6 digit combinations. We were also pleased to find that the entry of the PIN is also now displayed as a * upon entry. On previous Lexmark drivers the PIN had been displayed as a number, thus giving a potential thief the opportunity to watch from afar and observe the PIN displayed on the PC screen.

PIN Verification

To further protect against forced code breaking attempts, the Lexmark W840 can be set up to lockout access to documents where incorrect PINs have been entered. Confidential jobs can now also be set to delete after a period of time. This means that a user sending a confidential document and forgetting to release the job at a later stage will not have left confidential information on the device for ever and a day.

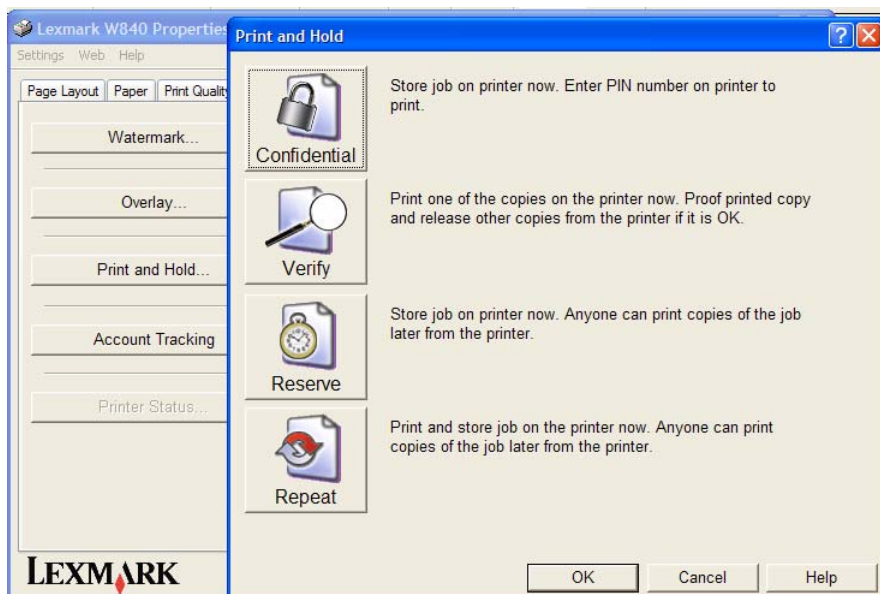
Data can also be stored in an encrypted format on the drive, rendering it useless if



Administrators can set the maximum retry attempts for PIN entry.

stolen. To secure transmission the Lexmark utilizes its own PrintCryption feature with an added security measure that encrypts the print data at the desktop level safeguarding the information as it travels over the network to the Lexmark W840. To safeguard passwords, etc. as they are sent across the network the device utilizes SSL (Secure Socket Layer) protocol.

With Confidential print, users can assign PINs to print jobs.



Direct Print

ImageQuick Drag'N'Print:

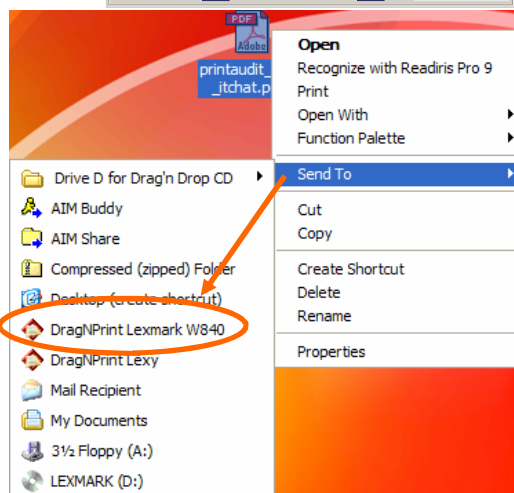
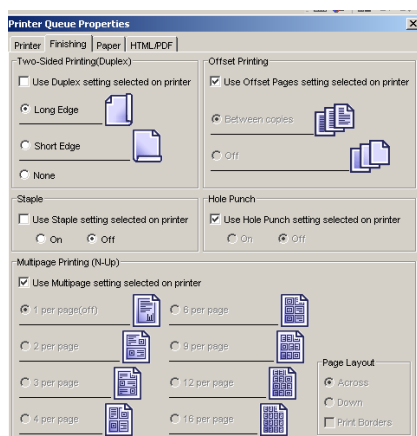
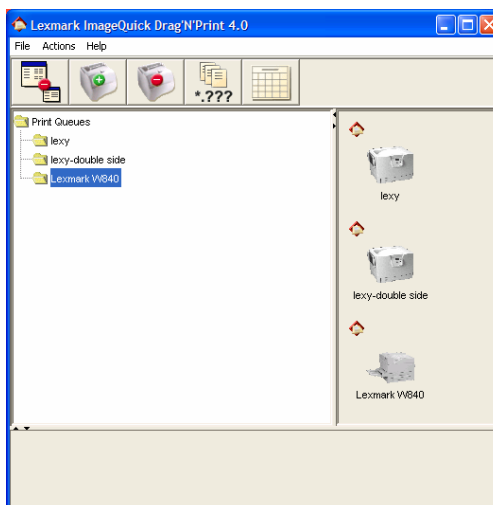
Drag'N'Print is a direct print utility that is provided with the driver CD as a standard feature for the Lexmark W840.

Lexmark's direct printing will be a popular resource among users looking for fast reproduction of high-bandwidth graphic files. The reason being that Lexmark's direct printing allows users to send PDF, JPEG, HTML, TIFF, GIF, BMP, and PS files directly to the print engine without launching an application or RIPing the file into a PCL or PostScript file. The time alone required to open an application such as Photoshop can be longer than the time it takes to print the file in some instances.

Users are able to set up as many direct PDF queues as they require (see right). This is a valuable feature, allowing users to set up a direct print queue with the required document production features necessary for a specific job type. For example, a user could set up one job queue defaulted to duplex output on paper from tray one, while another queue could be set to incorporate an overlay of the company letterhead and print from the bypass tray.

We also liked the ability to be able to use the direct print facility without having to first open a browser or windows application. This step, which is found on many rival devices can erode much of the time advantage that the process is supposed to deliver.

Users of the Lexmark W840 have multiple ways in which they can route a job into a direct print queue. They can either drag a file on the desktop onto the ImageQuick icon or they can simply right click on the file and select the direct print queue from the 'Send To' options (as shown to the right.)



Direct Print

Scheduled Print Events:

Another valuable and unique feature on the Lexmark's ImageQuick utility is the ability to set up automatically scheduled print events.

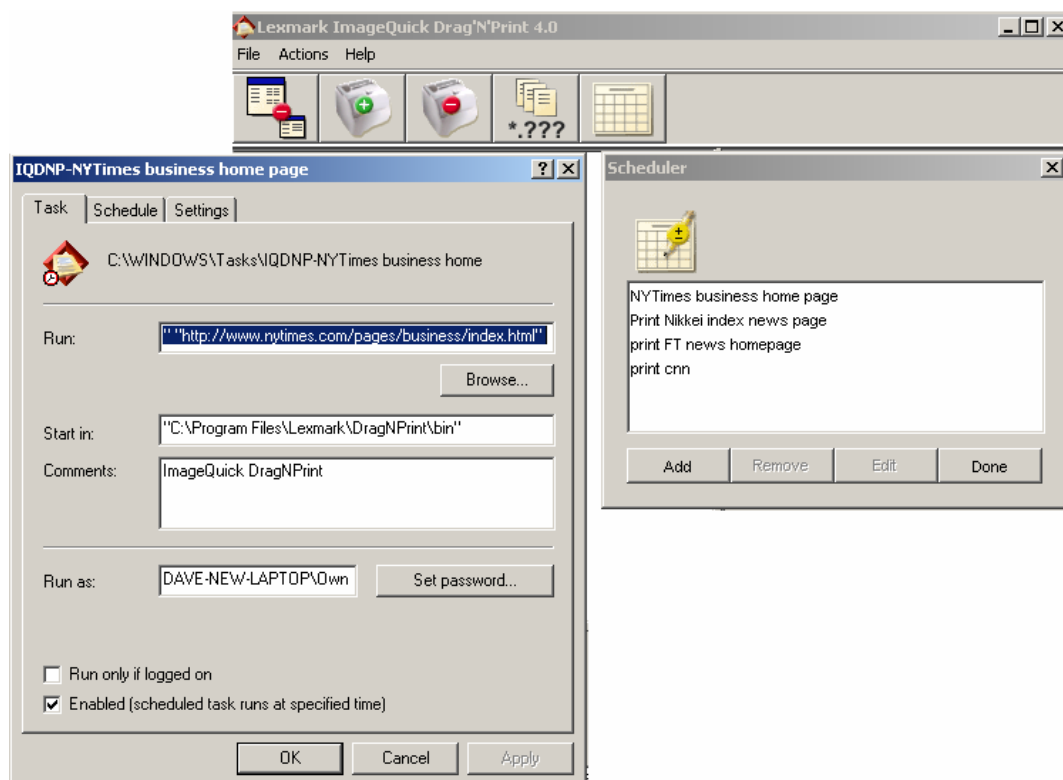
These can be files stored on a local device, networked device or even URL's pulled directly from the world wide web.

Scheduled events can be set up to go out on a one time basis or at regular intervals, to be set by the user.

The user simply sets up the location of the file, be it a network folder location or the URL address (as in a web site address), the print parameters and saves the job as a scheduled task.

This function has a broad range of real-life applications. In the example below a stock broker in New York has set up a series of scheduled print events to ensure when the brokers arrive in the morning that they have the main news page of the NYTimes, CNN, Financial Times and the Nikkei Index — all ready to scan before the days events get underway. In a business where time is money, this can be invaluable.

In another example a retail head office could set up a specific URL with the flyer design for the day's promotions. Each regional store would then up a scheduled print, so that each morning the point of sale material and daily flyers are ready to be displayed and handed out immediately.



Direct Print

USB Flash Drive Reader:

There is another way in which files can be submitted directly to the Lexmark W840 without the need for a printer driver, or indeed without the need of a desktop PC.

We were very pleased to see that, after years of asking, a manufacturer has finally included a USB Flash Drive Reader on the device console. For years manufacturers have been boasting about their ability to handle raw PDF data. However, it is only now that a user is finally able to walk up to a device with a USB flash drive (an IT gadget that has moved away from being a geek must-have to being a standard piece of equipment for the IT literate) and print a PDF directly from the device. In addition to be able to print PDF files directly from the device, the Lexmark W840 also supports direct printing of GIF, JPEG, TIFF, HTML 4.0, BMP, PNG, DCX and PCX files.

This function has a great number of potential real-world benefits. The most obvious being in the service print industry, namely business centers in hotels, airports, conference centers, internet cafes and high street print-for-pay businesses. In these instances traveling business people will

frequently have laptops and USB pocket flash drives. If they receive a contract or order form via email and need to get the file printed, they have only to transfer the file to the USB card, pack away the laptop and walk down to the hotel business center or airport lounge and print the file.

To use this novel feature we simply had to insert the USB flash drive into the socket on the front console panel. We were then able to browse through the folder tree of the drive until we reached the PDF file we wanted to print.

At this point users can only select the number of sets they require. We would have liked to have the ability to choose features such as duplex or finishing options (if available) allowing for even greater document flexibility.

Console users can direct print PDF files from their USB flash drives.



Print on Demand

Both drivers include a range of job delivery options. In addition to sending a job to print, we could also choose between:

Verify Print:

Prints the first copy of a multiple copy print job, then holds remaining copies until you either continue printing the job or delete the job using the printer operator panel.

Reserve Print:

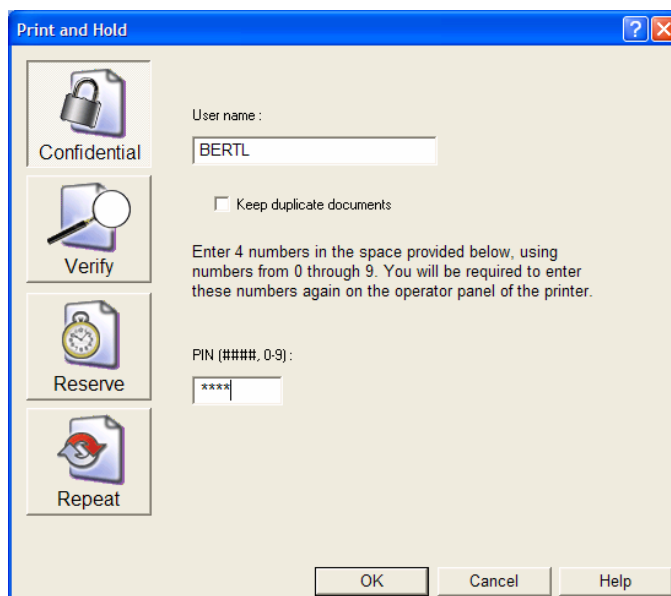
Stores a print job on the printer for printing at a later time, i.e. Print on Demand functionality. To find stored jobs, we had to scroll through the job menu to our username, then scroll to the job we wanted to reprint.

Repeat Print:

Does the same as reserve print but produces a printed set of the job at the same time.

Confidential Print:

Sends print jobs to the device with a secure PIN. Users must first scroll to their username, then enter the PIN number using the keys on the printer operator panel. We were pleased to see that the PIN is now displayed as asterisks when entered by the user. In the past, the PIN had been displayed as the actual numbers on screen allowing a potential thief to oversee the data entry code.



Users assign a PIN to their confidential jobs within the driver.

From the console, they can retrieve the job by entering the PIN.



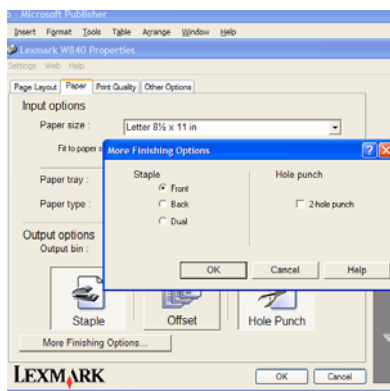
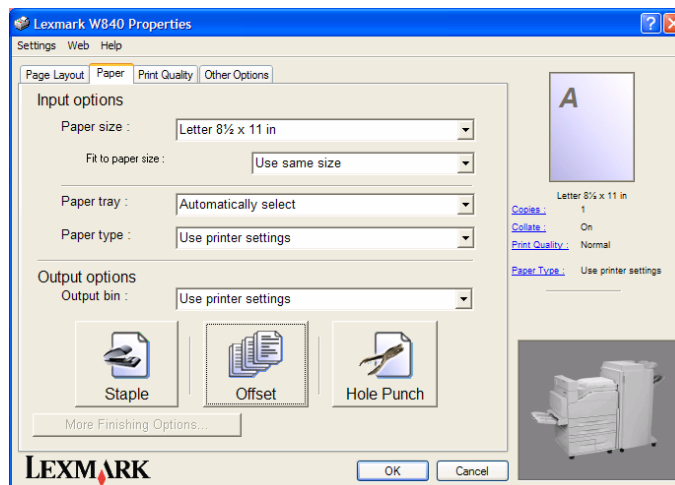
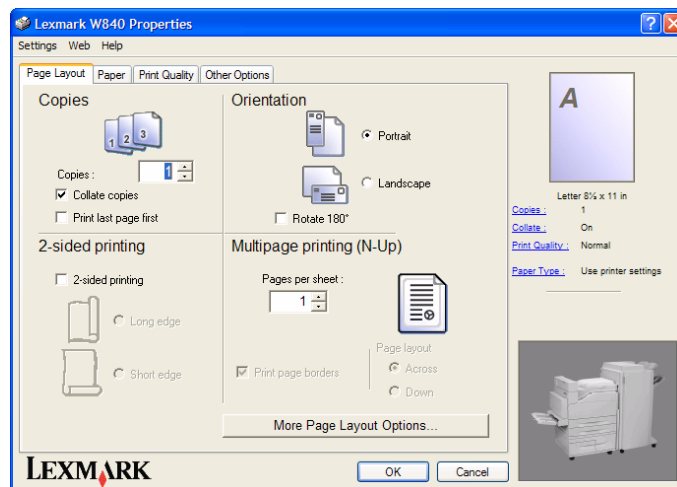
Print

Printer Driver Functionality:

Lexmark W840 shares the same PCL interface as the C920 and the revamped T-series. So workgroup users will feel at home when they first open up and print to this departmental device.

As with these other Lexmark devices, the drivers are headed by four tabs: Page Layout, Paper, Print Quality and Other Options. The tabs clearly define which printing features they cover, so no time is wasted browsing from tab to tab.

Within paper mode there is the option to specify the paper source for the document. However, there is no ability to select a different paper source for the front or back cover, a feature we would have like to have seen in this departmental printer — for example, using pre-printed header stock or heavy card stock for cover pages in manuals, brochures, presentations, etc.



Stapling, hole punching and offset are also selected from here (if installed.) Users can select the staple position and the 2-hole punch option when they click on the “More Finishing Options” button.

Users may select staple position and optional 2-hole punching

Summing Up

The Lexmark W840 is a capable departmental printer with an enviable number of unique features that put the device on its own in terms of user-friendliness and productivity in various real-world settings.

The installation and maintenance procedures are up to Lexmark's usual high standards, with MarkVision providing a professional means of managing one or multiple devices around the enterprise.

The direct print facility via ImageQuick and the USB interface on the device front panel provide a wealth of walk-up and automated printing abilities that are designed to make the job of printing business critical tasks as streamlined as possible.

There are areas we would like to see improved on the next generation product, including a more flexible user ID cost control system, allowing users to be allocated a set limit per month rather than the yes or no option currently available.

We would also like to see the USB Direct Print facility expanded to include the ability to choose finishing and document production options in addition to the quantity choice option. This would make the unique feature even more impressive, especially if a saddle-stitch booklet maker could be added, third on our wish list items.

