

Just the Facts



Product Overview

Desktop, Network Ready, Auto Duplex, 1,200 Sheet Paper Supply, 32 MB System Memory. Optional HDD, Finisher, Saddle Stitcher, 3,000 Sheet Paper Deck, 500 x 2 Paper Drawers

Technology

- ✍ Electrophotographic Printing
- ✍ 500K PM Cycle
- ✍ 500K Developer Unit
- ✍ 500K Transfer Unit
- ✍ 500K Fuser Unit
- ✍ 500K Amorphous Si Drum Unit
- ✍ True 600dpi resolution
- ✍ Fast 1200dpi, Interpolated 1800 x 600 dpi
- ✍ 40K Monocomponent Toner, at 5% coverage
- ✍ Stackless Duplex
- ✍ Barcode Scanner
- ✍ Send Once/Print Many

Memory Management

- ✍ Std. 32 MB DIMM, Max. 256MB; Upgrade via 100 pin DIMMs, 2 Slots
- ✍ Opt. 3.2 GB HDD

Productivity and Ease of Use

Throughput Speeds/Volumes		
	FS-9100DN	FS-9500DN
Letter	36	50
Legal	20	26
Ledger	19	26
Duplex	31	37
Avg. Mo. Volume	10,000	14,000
Max. Duty Cycle	180,000	250,000

Paper Handling

- ✍ Standard 500 x 2 Sheet Drawers, 200 Sheet Multi-purpose Tray
- ✍ Standard Stackless Duplex Unit
- ✍ Opt. 500 x 2 Sheet Drawers
- ✍ Opt. 3000 Sheet Deck

Finishing

- ✍ Opt. 3K Finisher, 50 Sheet Multi position Edge Staple
- ✍ Opt. 1K Saddle Stitcher, 50 Sheet Multi Position Edge Stapler, 10 Sheet Center Stitch

Connectivity

- ✍ Embedded Controller
- ✍ FS-9500DN: PowerPC750CX/400MHz Processor
- ✍ FS-9100DN: PowerPC750CX/350MHz
- ✍ Std. 32 MB Memory, 256 MB Max. Upgradeable using Opt. DIMMs
- ✍ Std. PRESCRIBE, PCL 6, PCL 5e, PS3 (KPD3) Emulations
- ✍ Supports Windows 95/98/NT4.0/2000, Mac 7.x/8.x/9.x
- ✍ Std. Parallel Interface
- ✍ Internet Protocol Printing Supported

Network Printing

- ✍ Standard IB-21E Network Interface
- ✍ Supports 10BaseT/100BaseTX
- ✍ TCP/IP, IPX/SPX, AppleTalk, NetBEUI Support

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- ✎ Windows 95/98/Me/NT/2000, NetWare 3.x/4.x/5.x, NDS, UNIX, IPP Printing Available
 - ✎ KM-Net Viewer
 - ✎ Opt. IB-20 for Coax Connectivity

Kyocera Mita America – A Name You Can Rely On

Kyocera Mita is dedicated to customer satisfaction so much so that we offer the best warranty/guarantee in the industry. All parts and labor are warranted for one full year from time of end user installation. In the event a mishap should occur, parts will simply be replaced, and labor will be covered. The Maintenance Kit is guaranteed for the life of the kit (500K for both the FS-9100DN & FS-9500DN), or 36 months, whichever comes first. The Maintenance Kit consists of four parts: the Fuser Unit, Drum Unit, Transfer Unit, and Developer Unit. If any portion of the Maintenance Kit fails before the stated guarantee, KMA will replace the failed Unit. A win-win situation for you and your customers.

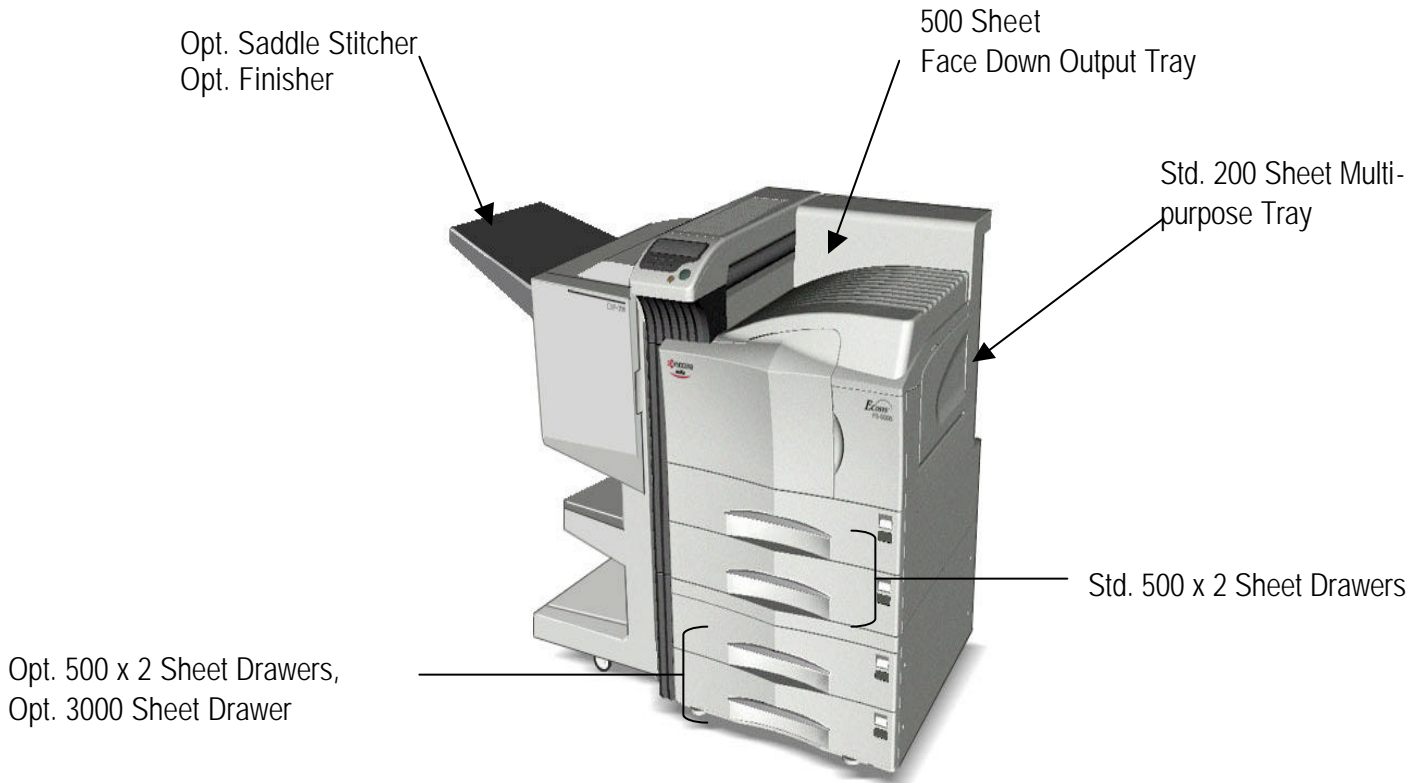
The labor credit does not apply to the replacement of Maintenance Kits that have achieved their rated yield.

Warranty Service response is based on next business day.

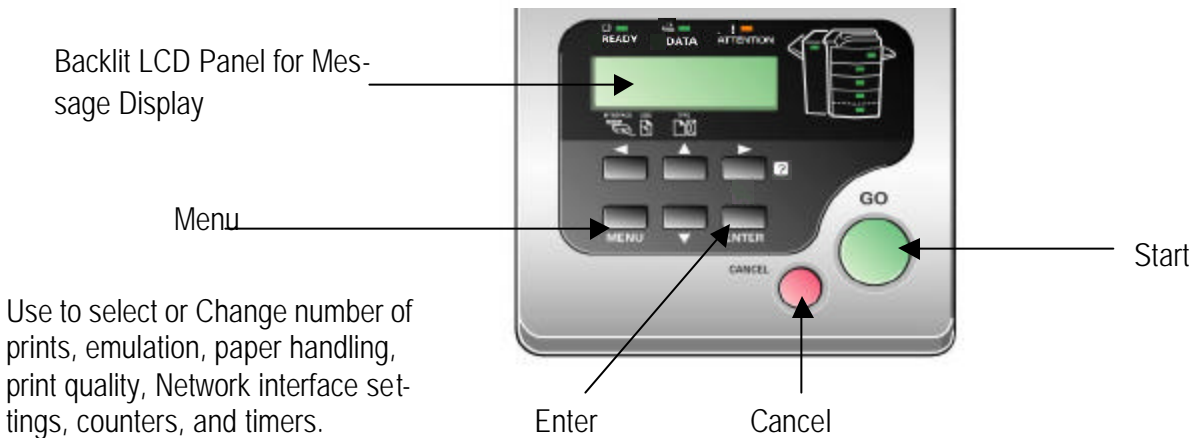


Position
Only

System Overview



Control Panel



**Note: Print Driver Settings have
priority over Panel settings**

Technology

The FS-9100DN/FS-9500DN are designed for the rigors of workgroup printing. Utilizing a “clean sheet” design, the FS-9100DN/FS-9500DN is all new: New long-engine life, paper handling, and output devices. Both are engineered for high-volume printing; and they’re packaged in a sleek new design. This platform is also the basis for our new 2530/3530 copiers.

High consumable yield, modular design, and a small footprint are just a few of their advantages. Let’s take a closer look at the elements that make the FS-9100DN/FS-9500DN the great products they actually are.

Improvements over the FS-9000

As the following chart indicates, there are many improvements in the FS-9100DN/FS-9500DN versus the FS-9000:

	FS-9100DN FS-9500DN	FS-9000
CPU	PPC750CX 350MHz/ 400MHz	PPC740 233MHz
Font ROM	713 (4MB)	609 (2MB)
CPU MIPS	700	427
Memory	32MB (256 Max.)	16MB (64 Max)
CF Slot	Yes	No
Memory Slot	DIMM 8-128MB x 2	SIMM 4-32MB x 2
Resolution	600 x 600, Fast1200	600 x 600
1 st Print Out	7 Seconds/5 Seconds	10 Seconds
Max Duty	180K Pages	150K Pages
Toner Capacity	40K (ISO 5%)	33K (ISO 5%)
Paper Input	500 x 2 + 200 sht MPT	500 x 2 + 100 sht MPT
Paper Handling	3000 sheet Document Finisher 1000 Booklet Finisher 500 x 2 Paper Drawers 3000 Paper Deck Duplex Standard 2/3 Hole Punch	1800 Sheet Document Finisher 10 bin Sorter 3000 Stacker 500 x 4 Paper Drawer Duplex Optional

500k PM – Best In Class

Workgroups will experience fewer scheduled service calls with the FS-9100DN/FS-9500DN. Using an average of 10,000 pages a month, the workgroup would never see a technician over 36 months, or the Maintenance Kit stated yield.

500k Total Maintenance Visit – Best In Class

At 500,000 page intervals, a service engineer will replace all the important serviceable parts; such as the Transfer, Developer, Fuser, and Drum Units. This ‘Unitized’ service approach reduces servicing time and extends uptime, enabling more prints between scheduled services than any product in their class.

40k Toner Yield – Best In Class

One Toner container yields approximately 40,000 letter size images (at 5% coverage). Printing, on average, 120,000 pages a year, a customer would replace the toner container just 3 times. In contrast, the Xerox N4525 requires 6 toner adds.

Parts and Labor Warranty – 1 year

While the chance of parts failure is very unlikely, there still is a possibility that something may fail. If this does happen, Kyocera Mita will replace the parts, provided that the product is still within the warranty period.

Guarantee

Unique in the industry, the Modules for the FS-9100DN/FS-9500DN are guaranteed to work for their rated life cycle. If any Module fails, Kyocera Mita will replace it; provided that it has not exceeded it’s published life expectancy (500K prints), or 36 months, whichever comes first.

Yield Implications

The FS-9100DN/FS-9500DN are the most durable printers in their class today. The following chart clearly shows how accurate this claim is.

FS-9100DN/FS-9500DN Total # of Replacements Required*

Monthly Volume over 36 months	10K/Mo.	15k/Mo.	20k/Mo.
Drums	0	1	1
PM's	0	1	1
Fuser Replacements	0	1	1
Toner Adds	9	13	18
Paper Adds (4,200 Total)	85	128	171

*Number reflects # of replacements, per part, over 36 months at specified usage

ECOSYS?

Ecosys Stands for Ecology, Economy and System. Ecology: The only consumable item is Toner. Economy: Our design approach, including long life parts and components, yields the lowest Total Cost of Ownership (TCO) in the industry. System: All aspects (Engine, Controller, Drum, Toner, Driver, NIC) are designed by the Kyocera Group, ensuring an Integrated Solution.

Everyone benefits from this extended yield:

- ✍ End User: Less job interruptions, less user involvement, reduced number of scheduled maintenance
- ✍ System Administrator: Fewer user complaints, Easier to maintain on the network
- ✍ Service Technician: Fewer scheduled calls, faster servicing

True 600 dpi Output

The FS-9100DN/FS-9500DN print at 600 dpi. Fine lines, small characters, enlarged text, solids and halftones are faithfully reproduced.

Fast1200 dpi Output

The FS-9100DN/FS-9500DN has the ability to print 1200 x 1200 dpi (interpolated) without any loss in engine speed. This allows for the

creation of graphic intensive documents, without having to sacrifice productivity.

Interpolated 1800 x 600 dpi

The FS-9100DN/FS-9500DN engines can interpolate 1800 x 600 dpi, using a mathematical algorithm (KIR, Kyocera Image Refinement) creating a clear, sharp image, on paper, especially halftone images.

Send Once/Print Many

Utilizing the FS-9100DN/FS-9500DN optional Hard Drive, a customer can turn the products from page printers into document printers. Instead of sending each page over the network multiple times for multiple sets, the Hard Drive store the first transmission for further printing, thus, increasing productivity, while reducing network traffic & printing time.

Technology Effect on Total Cost of Ownership (TCO)

The effect on the bottom line is always one of the biggest concerns when purchasing a network product. The FS-9100DN/FS-9500DN has several different features which save a company both money and time. A high consumable yield, reduced maintenance cycle, and parts warranty contribute to this. By reducing the amount of times a company needs to purchase parts and consumables, or pays for service, the more money that is saved by the customer. Add to this the amount of time saved by the network and paper handling features in the FS-9100DN/FS-9500DN, and the customer has a great opportunity to truly reduce their bottom line printing costs. Here's a comparison:

FS-9100DN/FS-9500DN Consumable Yields vs. The Competition






	FS-9100DN FS-9500DN	HP LJ 9000	Lexmark T620, T622
Drums Changes	0	0	12
Toner Adds	9	12	12
PM Visits	0	0	2
Consumables	\$1,197	\$2,988	\$4,768

*The yields are based upon printing 10K pages, over 36 months, at 5% coverage

**Prices are Street Prices from the company's website. Prices include Automatic Duplex Unit, and Network Cards not included in base model

Input/Output Devices

The FS-9100DN/FS-9500DN have a diverse range of Paper Handling Devices that enhance the production of hardcopy documents including:

-  Standard 1,200 sheet paper supply
-  Optional 500 x 2 sheet Paper Drawer
-  Optional 3000 sheet Paper Deck
-  Standard Stackless Duplexing
-  Choice of optional Finishing Devices.

All of these options are common with the 2530/3530 Copier.

This vast array of options allows you the opportunity to completely customize the FS-9100DN/FS-9500DN based upon your customer's needs.

Paper Handling

The FS-9100DN/FS-9500DN's standard 500 x 2 paper Drawers and 200 sheet Multi Purpose Tray, can be complimented by either additional 500 x 2 Paper Drawer or a 3,000 sheet Paper Deck. Each of these Drawers (not the Paper Deck) is user definable, up to 11" x 17" paper. With the 500 x 2 Drawer Unit, up to 5 different paper sizes/stock can be online enhancing versatility and convenience. The 3,000 sheet deck is ideal for paper intensive environments, providing a system total 4,200 sheets from 4 sources. Pa-

per can be added while the machine is running.

Paper Weights

The FS-9100DN/FS-9500DN can handle a variety of paper weights and stock. While the Paper Drawers hold up to 28lb bond, the Multi-Purpose Tray can take up to 110lb index. Card stock, Envelopes (up to 6 at a time), heavier stock, and custom paper can be used through the Multi-Purpose Tray.

Duplex

The FS-9100DN/FS-9500DN's stackless Duplexer allow for limitless numbers of 2 sided output. Duplexing is set up within the Driver, so the user never needs to leave their desk.

Finisher (DF-71)

Not only does the Finisher have a large 3,000 sheet capacity, it also offers Stapling and Hole Punch capabilities without any loss of speed. This productivity is attainable because the Finisher has a Paper Stacking section allowing the Printer to operate at 100% efficiency while the Finisher completes each job.

The Finisher has two staple heads, providing fast and efficient multiple position stapling (top left, bottom left, top & bottom left). Each staple cartridge holds 5,000 staples.

When Hole Punch is selected, each page is punched as it enters the Finisher, increasing efficiency. The top tray of the Finisher holds up to 250 sheets and is for non-sort/group output. The bottom tray holds 3,000 sheets of collated output.

Enhancements to the DF-71 include:

- ✎ Easier to install
- ✎ De-curling Unit is included
- ✎ User can adjust de-curl amount
- ✎ Constructed of material to prevent static electricity build-up
- ✎ Addition of new roller

Finisher Capacities

The following information is based on the Paper Weight range of 16 – 43 lbs.

✎ Stapling

Up to 50 sheets Letter or LetterR, up to 30 sheets Legal or Ledger

✎ Non-Sort Tray

250 Sheets

Sort Tray

In the Sort, Non-Staple mode, all sets are offset stacked in the lower Tray.

The Finisher uses sensors to determine the level of the lower Tray. This means the unit

continues to make sets, as long as the lower Tray does not reach its maximum capacity.

Both unfinished, and finished, documents will appear in the sort tray. The Non-Sort tray is only for unfinished documents.

Saddle Stitcher (DF-75)

Once found only on very high end equipment in CRD, Print for Pay, Print on Demand (POD) and Back office environments; Our **exclusive** Saddle Stitching – the ability to place two staples into the center of folded Ledger/LetterR documents – is now available for the workgroup.

Key features include:

Edge Stapling

- ✎ 50 Sheet Capacity, Letter/LetterR; 25 Sheet Ledger/Legal
- ✎ 1,000 Sheet output, based upon Letter size output
- ✎ Offset of non-stapled Sets
- ✎ LetterR-Ledger Output
- ✎ 5,000 staples per cartridge
- ✎ Opt. 2/3 Hole Punch

Saddle Stitching

- ✂ 10 Sheets = 40 Pages (10 Sheets x 4 Images)
- ✂ V-Fold
- ✂ LetterR-Ledger Output
- ✂ 5,000 Staples per Cartridge
- ✂ Output Stack Capacity varies according to the number of sheets being processed

# of Sheets in Document*	Sets
1 - 5	20
6 - 10	10

*1 Sheet = 4 Pages; therefore, a 5sheet document contains 20 pages.

The output from the FS-9100DN/FS-9500DN's Saddle Stitcher satisfies numerous applications in a variety of industries including: Education, Finance, Government, Insurance, Medical, Religious and Political Organizations, Entertainment, Travel, and Public Relations. All of these have the need to output booklet style documents.

Combined with the various features of the FS-9100DN/FS-9500DN, jobs that once required outsourcing or were sent to a higher speed device can now be processed faster and handled on demand in the workgroup.

Memory Management


The FS-9100DN/FS-9500DN are standard with 32 MB memory, with the option to max out at 256MB. There is also an option for an additional 3.2GB Hard Drive. This capacity allows for complete customization and expandability, based upon customers' needs.

The optional Hard Drive changes the FS-9100DN/FS-9500DN from a network page printer to a document printer, and also enables the following:

Hard Disk Drive (HD-3)

- ✂ **e-MPS (Job Storage)** – Overall Utility that incorporates Private Print, Store Job, Quick Print, Proof & Hold, Virtual Mailbox..
- ✂ **Temporary Storage** – stores job on a temporary basis to the HD, which increases print speed on multi-print jobs. The first copy of the job need only be rendered once. Data is removed from memory when the printer is reset or powered off. Job is accessed via the Control Panel.
- ✂ **Permanent Storage** – stores job until it is manually removed from the HD. Jobs can be named for easy identification on the printer Job List. A barcode can also be printed on the job and the job recalled by using the optional Barcode reader. The job can be accessed through the Control Panel.
- ✂ **Private Print** – The ability to store a job on the printer, with a pass code, and to have it print once the pass code is entered from the Control Panel.
- ✂ **Store Job** – Store a frequently printed job, on the HDD, for future printing.
- ✂ **Quick Print** – prints all copies of a job then stores it temporarily to HD. Using the Printer Control Panel, user can print the job, again. Jobs are deleted when the power is turned off or deleted from the Printer Control Panel.
- ✂ **Proof and Hold** – prints one copy of the job and stores it on a temporary basis. Once proffed, the remaining prints can be made.

Users can change number of prints, or delete job. The number of proof and hold jobs that can be stored depends on the available HD space. New jobs override the oldest job when HD reaches max. capacity.


 **Virtual Mailbox** – The ability to store documents in up to 255 separate mailboxes for individual printing.


Methods of Accessibility to Jobs

Job Access				
	Control Panel	Bar Code Reader	Job Manager	Print Desk Manager
e-MPS	No	Yes	Yes	Yes
VMB	Yes	Yes	No	Yes
Job Storage	Yes	No	No	No

With these features, users can make more effective use of their time, as well as adding security and print on demand functionality.

Additional advantages of the HDD would include:

 **Document Printing** – a “Send Once, Print Many” feature, which stores the print job on the HDD, reducing the amount of times the job needs to be sent to the printer. This increases both network & printer efficiency.

 **Font Storage** – By storing fonts on the HDD, the creation & transmission time for a document is reduced. The PC will send raw data to the HDD, which will then add fonts as instructed. This reduces network traffic and PC processing time, while it improves user efficiency.

RAM Disk

Uses part of the total printer memory to emulate the functions of a Hard Drive. RAM Disk Mode requires more than 12 MB of total RAM and *cannot* have a Hard Disk Drive installed. The RAM Disk will be disabled when a Hard Disk Drive is installed. RAM Disk Mode can be turned on or off by the Control Panel on the Printer or with Printer Disk Manager. The maximum amount of printer RAM that can be used for RAM Disk Mode is calculated as follows:

~~✍~~ Total RAM – 24MB = Maximum RAM for use with RAM Disk Mode.

Bar Code Scanning (BC-1)

By adding the Bar Code Scanner, users can reprint jobs by scanning a bar code. The data will be linked with a bar code, and saved to the HDD on the Printer. Of course, the user can chose if the whole document, or parts of it, get reprinted. This allows users to print documents, without having to resend a job from their desk, improving efficiency within the workplace. The Bar Code Scanner also works with the temporary storage, permanent storage, and VMB functions of the HDD, allowing for fast retrieval and printing of frequently used documents.

Connectivity

Benefiting from years of Kyocera experience in the design and manufacture of controllers and network tools, the FS-9100DN/FS-9500DN's printing qualities are as robust as any of the competition. **In fact, Kyocera Mita is the only vendor with a common Driver for Printers and Copiers, Monochrome and Full Color.**

The new IB-21E network interface allows fast, easy setup, and supports 'WINS' and 'NDPS' Gateways. Plus, our KM-Net Viewer software makes enterprise wide network administration and troubleshooting a snap. Features include:

- ✍ Embedded Power PC 750CX (350Mhz 9100, 400Mhz 9500) processor with 32 MB standard RAM, upgradeable to 256 MB with additional DIMM memory. The printer has 2 additional slots for memory allowing for any combination your customer needs.
- ✍ Utilizing the KX Driver, a user can fully access the features of any Kyocera Mita product. The driver supports all PDLs currently used by Kyocera Mita products (PCL 5e/6 and KPD). The GUI interface does not change based upon product or Operating System platform. The KX Driver also supports all previous model printers & Copiers, enabling the user to fully utilize any Kyocera Mita product, to it's full potential.

KX Driver

The KX Driver is the Printer Driver that is used by ALL of the Kyocera Mita products. Kyocera Mita is the only Manufacturer that uses one driver for ALL of their products. From the Driver screen, the user is able to take control of all the functionality of the printing device. Instead of using the control panel on the device including:

- ✍ Number of Copies Printed
- ✍ Output Location (Finisher Tray, Main Tray, etc.)
- ✍ Duplexing
- ✍ Media Type, Size, and Orientation (Landscape or Portrait)
- ✍ Cover Pages
- ✍ Page Inserts
- ✍ Transparency Interleaving
- ✍ Page Layout
- ✍ Print Quality
- ✍ Finishing Properties (Staple, Punch, Collate, etc.)
- ✍ e-MPS functions (Job Storage, with optional Hard Drive)

Below are a few examples of the KX driver screens:

User Screens





Full Macintosh Support

Utilizing the PPD files included on the supplied Digital Library CD, a user can use all the functions of the FS-1900DN/FS-9500DN in a Mac environment. In other words, unlike using a standard PostScript driver where you can only print to a printer, the PPD file allows you to use Duplexing, Finishing, and the full line of Kyocera Mita Utilities just like you would be able to in a Microsoft Windows environment.





By having this functionality, the FS-9100DN/FS-9500DN becomes just as desirable in the Macintosh network environment, as it is in the Windows network environment.

Network Support

The IB-21E Network Interface make connecting the FS-9100DN/FS-9500DN as easy as a few mouse clicks. Although similar to the current IB-20/21, the IB-21E has a number of features that improve network administration and set-up.

-  Expanded Quick Setup wizard utility
-  Administrator Manager Utility
-  Browser-based HTML pages
-  Mac Utility supports configuration via AppleTalk or TCP/IP

The included software contains all the Utilities, Documentation, and Network applications:

-  KM-Net Viewer
-  KM-Net Viewer for Web
-  NDPS Gateway
-  Automatic language selection for English, French, German, Spanish, Italian, Portuguese, and Japanese

The IB-21E is backwards compatible with the IB-20/21, and supports all future Kyocera Mita printers.

IB-21E Overview

The IB-21E Network Interface has its own CPU and supports multiple protocols within mixed operating system environments.

Capabilities include:

- ✎ 10BaseT\100BaseTX, Auto Switching
- ✎ Supports TCP/IP, IPX/SPX, AppleTalk, and NetBEUI
- ✎ Flash Memory allows firmware updates via the Network
- ✎ KM-Net Viewer allows monitoring of Kyocera Mita printers and third party devices on the network. See KM-Net Viewer in this preview for more information.

? TIP?

In order to take complete advantage of the IB-21E network speed, you should max out the memory of the printer it's installed in.

TCP/IP Specifications

The IB-21E provides network support for Windows NT 3.5x/4.0/; 95/98/2000, UNIX. Support for UNIX is LPR command printing only for the following systems: SunOS 4.1.x, Solaris 2.x, AIX, and HP-UX.

IPX/SPX Specifications

Novell NetWare 3.x, 4.x, 5.x and NDS are fully supported. A maximum of 8 File Servers or Print Servers can be connected.

AppleTalk Specifications

AppleTalk Phase 2, Version 53 or later that operates on Macintosh or Power Macintosh is supported. Set up via AppleTalk *or* TCP/IP is possible.

NetBEUI Specifications

Supports Windows for Workgroups 3.11/95/98/NT

Internet Printing

Internet Printing enables the user to send print jobs to a distant printer with a URL address via the Internet and print the file like it was being printed on a local device. The file is sent using HTTP.

Resource Management

Kyocera Mita Net Viewer (KM-Net Viewer)

Set up, monitoring and maintaining network devices is critical for the efficient flow of information within any business. Our KM-Net Viewer software makes it easy. Not only can you monitor all our FS/DP series printers, as well as our KM series networked copier/printers, but you can also monitor those of a third party. Software is included with all Print Drivers for the above models. Highlights include:

- ✎ Software installed on Administrators PC, with specific Administrators access to product
- ✎ Search Printer Wizard allows you to add, import, and discover all devices on the network
- ✎ Filter function enables monitoring by model name, protocol (TCP/IP, IPX/SPX), speed, or group
- ✎ Email error notification to z email addresses. Feedback includes: not connected, paper jam, paper empty, paper low, add paper, cover open, and toner level. This main function will also inform you of the status of the device(s) at designated intervals. Audible messages are also included.
- ✎ Offers direct access to the internal web pages residing on the individual devices.
- ✎ Provides customizable status logs of devices, updated on a programmed cycle.
- ✎ Customized desktop; including the ability to overlay the device icons onto a .BMP of department floor plans.
- ✎ Customized groups, with group properties reporting.
- ✎ Ability for the Administrator to broadcast a message to a designated group (or individual) printer.

The User Interface is highly graphical, providing quick, visual feedback.

Utilities

The following Utilities are found on the Digital Library CD, which is provided with the Print Driver. These Utilities enhance the versatility and operating convenience of the FS-9100DN/FS-9500DN

IC Link for Windows (IC LINK32)

The IC Link32 Utility assembles and organizes all of the necessary components to create a Compact Flash (CF) Project. Once assembled, the Utility formats the components and transfers them onto a CF Card inserted into a locally connected printer.

The IC Card project includes Font data (TrueType, KPDL, etc.), Host data (forms, logos, signatures), Macros, Program data (PRESCRIBE, PCL, KPDL), and Message data (to change the printer's front panel Message Language setting).

The IC Link32 Utility enables you to download data directly to the printer's optional Hard Disk and OTP (One Time Programmable ROM). Data on these alternative storage devices can be managed in the same manner as with the IC Cards, with the exception of Message data.

IC Link for Windows can import DOS-based IC Link projects and manage, edit and delete information on previously used IC Cards. However, IC Link32 projects cannot be opened in DOS-based IC Link.

Printer Disk Manager (Administrator)

The Printer Disk Manager (PDM) Utility manages the Job Storage features available when using an optional Hard Disk or a RAM Disk. From a desktop computer, the PDM monitors and manages the Virtual Mailboxes and Job List items on these storage devices.

The PDM may also be used to monitor, access, and manage other optional printer data storage devices, such as a Memory Card, Compact Flash, or a MicroDrive.

To ensure proper security, the PDM requires an Administrator Password to operate after installation. An Administrator Password must be defined during the software installation process, but may later be modified.

Remote Operation Panel (ROP) (Client)

The Remote Operation Panel (ROP) Utility creates a virtual front panel to support Kyocera Mita Printers, in addition to a physical front panel. The ROP Utility offers access to printer settings commonly associated with front panel operations, such as Emulation, Paper Feeding, Output Bin, and RAM Disk. It monitors the Printer's status, displaying information such as Printer paper jam conditions. An audible sound can be assigned to accompany error notification. ROP can also switch the printer **On Line** and **Off Line**.

Printer Job Manager (Client) Allows clients to access and reprint jobs stored to the HDD, eliminating the need to travel to the Device.

Kyocera NDPS Gateway (Administrator)

NetWare Distributed Print Services (NDPS) is Novell's latest printing system that supports Plug and Play, TCP/IP printing, Enhanced Print Monitoring, simplified printer installation, Automatic driver download, and better NWAdmin support. The Kyocera NDPS Gateway enables full NDPS support for Kyocera printers. The Kyocera NDPS Gateway has received the "Tested and Approved" certification NetWare versions 4.x and above.

PRESCRIBE

Prescribe is the native language of your printer. Consisting of easily remembered commands, such as **SLM** for Set Left Margin, and **BOX** to draw a box, gives you the capability to control line and character spacing, adjust margins, change fonts, position text, draw graphics, and print multiple copies of each page.

Most application software controls printers by means of codes and escape sequences that are built into the program and are not directly visible to the user. In contrast, Prescribe II commands are made of ordinary characters that you can type in yourself and see on the computer screen. This makes it easy for you to customize printing and add features that may not be supported by your application.

Commonality – The Wave of the Future

The new generation of Kyocera Mita Imaging devices are focused on long life, high reliability, low operating costs and product commonality. The following are common accessories that both the FS-9100DN/FS-9500DN and 2530/3530 share:

Input/Output Devices, Network Tools, MA Kits

	2530	3530	9100DN	9500DN
STDF	☞			
SRDF	☞	☞		
DF-78 Internal Finisher	☞	☞		
AK-70C Attach Kit*	☞	☞		
AK-70P Attach Kit*			☞	☞
DF-71 3K Finisher	☞	☞	☞	☞
DF-75 Saddle Stitcher	☞	☞	☞	☞
M-2107 Mailbox	☞	☞		
J-1402 Job Separator	☞	☞		
AD-63 Duplex Unit	☞	☞	Std.	Std.
Print/Scan System N	☞	☞		
Fax Kit	☞	☞		
BC-1 Barcode Reader	☞	☞	☞	☞
HD-3 Hard Disk Drive	☞	☞	☞	☞
MK-700			☞	
MK-701				☞
MK-705	☞	☞		
TK-70 Toner Container			☞	☞
Toner Container	☞	☞		
PF-75 3K Paper Deck	☞	☞	☞	☞
PF-70 500x2 Paper Drawer	☞	☞	☞	☞

These shared resources are unique to the office environment and provide significant benefits to all individuals.

*For DF-71

FS-9100DN/FS-9500DN Specifications

Productivity and Ease of Use

System Speeds and Capacities

	FS-9100DN	FS-9500DN
Warm Up	60 sec.	130 sec.
FPOT	7 sec.	5 sec.
Letter	36 ppm	50 ppm
Legal	20 ppm	26 ppm
Ledger	19 ppm	26 ppm
Toner	40K	40K
Developer Unit	500K	500K
Drum Unit	500K	500K
Transfer Unit	500K	500K
Fuser Unit	500K	500K
PM Cycle	500K	500K
Max. Monthly Vol.	180K	250K

Paper Handling

- ✔ Std. 500 x 2 Paper Drawers, 200 Sheet Multi-Purpose Tray
- ✔ 1,200 sheets total.
- ✔ Auto Drawer Switching and User Adjustable

Add Paper While Running

- ✔ Yes – all sources

Multi Purpose Tray

- ✔ Stack 200 sheets
- ✔ Auto Paper Size detection
- ✔ 3.5" x 5.8" to 11.7" x 17.7", Up to 10 Envelopes (#10 and Monarch)

Min/Max Output Size

- ✔ 3.5" x 5.8" to 11.7" x 17.7"

Paper Weights

	Drawers	Bypass	Duplex
Bond (lbs.)	16lb – 28lb	Up to 53lb	16 – 24lb
Index (lbs.)	N/A	110lb Index	N/A

Auto Selection

- ✔ Yes

Language Selection

- ✔ Yes, English, Spanish, French, Japanese, and Portuguese

Sleep Mode

- ✔ Yes
- ✔ Sends system into low power "Sleep" mode
- ✔ Adjustable from 5 to 200 minutes from the Control Panel

Input/Output Devices

Standard Paper Handling

- ✔ 500 x 2 Sheet Tray
- ✔ 200 Sheet Bypass Tray
- ✔ Duplex Unit

Standard Output Capacity Tray

- ✔ 500 sheets, face down

Optional Paper Handling

- ✔ 500 x 2 Sheet Tray
- ✔ 3,000 Sheet Deck
- ✔ May only have one of the two modules set up on one machine

Optional 3K Finisher w/Standard Punch (DF-71)

- ✔ Two Bins
- ✔ 3,000 Sheet Capacity/Main Tray – Letter Size
- ✔ 1,500 Sheet Capacity/Main Tray - 11 x 17, 8.5 x 14, 8.5 x 11R
- ✔ 250 Sheet Capacity/Sub Tray – Letter Size
- ✔ 150 Sheet Capacity/Sub Tray – 11 x 17, 8.5 x 14

Paper Size

- ✔ Main Tray: 11 x 17, 8.5 x 14, 8.5 x 11R
- ✔ Sub Tray: 11 x 17, 8.5 x 14, 8.5 x 11R, 5.5 x 8.5

Staple Positions/Punch Positions

- ✔ 3/50 Sheets – Letter Size
- ✔ 3/30 Sheets – 11x17, 8.5 x 14
- ✔ 2 or 3 Hole Punch

Optional Saddle Stitch Finisher (DF-75)

- ✎ Two Bins
- ✎ 1,000 Sheet Capacity/Main Tray – Letter Size
- ✎ 500 Sheet Capacity/Main Tray – 11x17, 8.5 x 14, 8.5 x 11R
- ✎ Booklet Tray: 20 sets (1 – 5 sheets), 10 sets (6 – 10 sheets)

Paper Size

- ✎ Main Tray: 11x 17, 8.5 x 14, 11 x 8.5, 8.5 x 11R
- ✎ Booklet Tray: 11 x 17, 8.5 x 14, 8.5 x 11R

Staple Positions

- ✎ 3/50 Sheets – Letter Size
- ✎ 3/30 Sheets – 11 x 17, 8.5 x 14
- ✎ 10 Sheets – Saddle Staple Position

Staple Capacity

- ✎ 5,000 Staples per Cartridge

Optional Punch/Positions

- ✎ 2 or 3 Hole Punch

Standard Reversing Unit (RA-1) with the Saddle Stitch Finisher (DF-75) used to maintain the productivity of the optional Saddle Stitch Finisher (DF-75). If Reversing Unit is not installed, the productivity of Saddle Stitch is reduced by 50%.

Duplexing

Type/Capacity

- ✎ Standard Stackless Design, unlimited output

Min/Max Print Size

- ✎ 3.5" x 5.8" to 11.7" x 17.7"

Print Quality and Versatility

Resolution

- ✎ 600 x 600 dpi
- ✎ Fast1200dpi (1200 x 1200), without loss of engine speed
- ✎ 2400 x 600dpi

Grayscale

- ✎ 256 levels, 2 bit

ECO Mode

- ✎ Yes – reduces amount of toner applied to individual print and extends overall yield

Kyocera Image Refinement (KIR)

- ✎ Allows for higher resolutions without loss in engine speed

Engine Design

Processor

- ✎ 9100: PowerPC750CX-350MHz
- ✎ 9500: PowerPC750CX-400MHz

Memory

- ✎ Std. 32MB, upgradeable to 256MB via DIMMs

Emulations

- ✎ Std. PCL6, PCL-XL, PS2 Compatible (KPDL3), Prescribe 2e

Drivers

- ✎ PCL6/5e/KPDL: Win 95/98/2000/NT 4.0
- ✎ Mac: 7.6.1/8.x

Networking Information

Interface Options

- ✎ Bi-Directional Parallel (IEEE1284 Nibble / ECP)
- ✎ RS232C
- ✎ 10/100 BaseTX Network Interface
- ✎ Cable: Category 5 with shield is required
- ✎ KUIO-LV 2 Slot Option Interfaces for NIC & HDD
- ✎ CF (Compact Flash) Card Interface – 1 Slot

Controller Hardware

- ✎ Power PC 750 running at 350MHz
- ✎ System ROM 4MB Flash (DIMM Slot Type)
- ✎ Font ROM 4MB (SOP Type)
- ✎ Main RAM SDRAM
- ✎ Standard 32MB of Memory

- ✂ Option: 16 – 128MB x 2 Slots
- ✂ 100 pin-DIMM (16, 32, 64 & 128MB)
- ✂ API ROM 42 pin OTP-ROM 2MB socket equipped

Controller Software

- ✂ PDL: PRESCRIBE
- ✂ Emulation: PCL6, (5e, XL, PjL)
- ✂ Line Printer emulations include: IBM Proprinter X24E, Epson LQ-850, Diablo 630, and KC-GL
- ✂ KPDL3 (Post Script 3 compatible)
- ✂ AES Supported

Fonts

- ✂ 1 Bitmap Font
- ✂ 80 Outline Fonts: PCL5e, XL, PCL6 and KPDL2
- ✂ 135 Outline Fonts: KPDL3
- ✂ Downloadable Fonts include: Kyocera, HP Format, and True Type Format

Graphics

- ✂ PRESCRIBE
- ✂ One Dimensional Barcode: 45 Types
- ✂ Two Dimensional Barcode: PDF 417 Type
- ✂ Raster Graphics: 75, 100, 150, 200, 300, and 600 dpi
- ✂ Vector Graphics: Line, Box, Circle, Arc, and Fill pattern

Resolution Enhancement is accomplished by KIR (Kyocera Image Refinement) Level 2

Utilizing Enhancement Method: Fast 1200 and 2400 x 600 dpi

Connectivity

- ✂ Plug and Play for Microsoft Windows 95, 98, and 2000
- ✂ SNMP (Printer MIB Support)

On-Board Network Interface is resident on every Print System N, so every 2530/3530 is network ready.

Resides in the KUIO-LV operation interface slot

- ✂ RAM: 4MB
- ✂ Flash ROM: 2MB
- ✂ Network Interface: 10Base-T/100Base-TX utilizing one port
- ✂ Printer Interface: KUIO-LV

Protocols Supported: TCP/IP, IPX/SPX, Apple Talk, and NetBEUI

TCP/IP Support on 3 levels:

- ✂ Network Level Support: ARP, RARP, IP, ICMP
- ✂ Session Level Support: TCP, UDP
- ✂ Application Level Support: LPD, FTP, TELNET, BOOTP, DHCP, SNMP, HTTP, SMTP, DNS, IPP, POP3

Novell Netware Specifications Supported:

- ✂ IPX, SPX, SNMP
- ✂ Encryption Passwords in Print Server Mode
- ✂ NetWare 3.x, 4.x, 5.x & NDS

Apple Talk Specifications Supported:

- ✂ ELAP, AARP, DDP, AEP, NBP, RTMP, ZIP, ATP, PAP
- ✂ Apple Talk Phase2

NetBEUI Specifications Supported:

- ✂ NetBIOS supports SMB

Operating Systems Supported:




- ✂ Microsoft Windows NT 3.5x/4.0, Microsoft Windows 2000
- ✂ Supports standard FTP programs & standard LPR printing
- ✂ Microsoft Windows 95/98
- ✂ Supports standard FTP programs & printing by special LPR printing software (K Print)

Unix

- ✂ Supports standard LPR command printing on the following systems:
 - Sun OS 4.1.x
 - Solaris 2.x

- AIX
- HP-UX

IP Address Settings



-  Set from the Touch Screen Interface/Printer Mode
-  KM-Net View/HP Jet Admin supported applications
-  ARP, RARP, DHCP, BOOTP also supported

Network Interface Accessories

-  Ethernet Address Label
-  Quick Guide
-  Set-Up CD ROM
-  IB-21E

Optional Hard Disk Drive (HD-3)

Basic Specifications-

-  Hard Disk Drive
 - ATA-4 Type 2.5-inch hard disk drive
 - Interface is Inserted into the KUIO-LV
 - Storage Capacity - 3.2 GB
 - Operating Requirements are a total 12MB Memory or more
-  Optional Hard Disk Drive is an enhancement for both the 2530/3530. This device allows the Unit to function as a Document Printer and enables a variety of Job Storage Functions.

Miscellaneous

Power Requirements

120V, 10.8A – Dedicated line is recommended

Dimensions (H x W x D)

23.0" x 25.2" x 24.2"

Weight

150.11 lbs.

Energy Star





Yes

Warranty

Parts & Labor: 1 Year

Imaging Unit: Life of Unit (500K or 3 years)
Guaranteed

In-Carton Material

-  Printer
-  Initial Toner Cartridge, 20K Yield
-  Digital Library CD containing:
 - Printer Drivers
 - Printer Utilities
 - KM-Net Viewer
 - NDPS Gateway
 - Online Documentation
-  Owner's Manual

Specifications Subject to Change

Printer Terminology

10/100BaseT

The most widely installed Ethernet local area networks (LANs) use ordinary telephone twisted-pair wire. When used on Ethernet, this carrier medium is known as 10BASE-T. 10BASE-T supports Ethernet's 10 Mbps transmission speed. In addition to 10BASE-T, 10 megabit Ethernet can be implemented with these media types:

- 🔪 10BASE-2 (Thinwire coaxial cable with a maximum segment length of 185 meters)
- 🔪 10BASE-5 (thickwire coaxial cable with a maximum segment length of 500 meters)
- 🔪 100BASETX (Two pairs of data grade twisted-pair wire)

The designation is an IEEE shorthand identifier. The "10" or "100" in the media type designation refers to the transmission speed of 10 or 100 Mbps (Megabits per second). The "BASE" refers to base band signaling, which means that only Ethernet signals are carried on the medium. The "T" represents twisted-pair; and the "2" and "5" refer to the coaxial cable segment length (the 185 meter length has been rounded up to "2" for 200).

API (Application Program Interface)

The specific method prescribed by a computer operating system or by another application program by which a programmer writing an application program can make requests of the operating system or another application. An API can be contrasted with a graphical user interface or a command interface (both of which are direct user interfaces) as interfaces to an operating system or program.

AppleTalk

A set of Local Area Network communication protocols originally created for Apple computers. An AppleTalk network can support up to 32 devices and data can be exchanged at a speed of 230.4 kilobits per seconds (Kbps). Devices can be as much as 1,000 feet apart.

ASCII Codes

The most common format for text files in computers developed by the American National Standards Institute (ANSI). Each alphabetic, numeric, or special character is represented with a 7-bit binary number (1's and/or 0's). 128 characters can be defined this way. UNIX and DOS-based operating systems use ASCII for text files.

Bit

A bit is the smallest unit of data in a computer. A bit has a single binary value, either 0 or 1. Although computers usually provide instructions that can test and manipulate bits, they generally are designed to store data and execute instructions in bit multiples called bytes. In most computer systems, there are eight bits in a byte. The value of a bit is usually stored as either above or below a designated level of electrical charge in a single capacitor within a memory device.

Half a byte (four bits) is called a nibble. In some systems, the term octet is used for an eight-bit unit instead of byte. In many systems, four eight-bit bytes or octets form a 32-bit word. In such systems, instruction lengths are sometimes expressed as full-word (32 bits in length) or half-word (16 bits in length).

Bit-Mapped Font

In a bit-mapped font, each character is stored as a matrix of tiny squares or "pixels".

As with any bitmapped image, if you zoom in for a closer examination, you'll see a "stair-step" pattern along the characters' edges. Nevertheless, bitmapped fonts can look very sharp in print, but only up to a certain size.

Cache

A cache (pronounced CASH) is a place to store something more or less temporarily. Computers include caches at several levels of operation, including cache memory and a disk cache.

Types of caches:

- 1) International, national, regional organizational and other "macro" caches to which highly popular information can be distributed and periodically updated and from which most users would obtain information.
- 2) Local server caches (for example, corporate LAN servers or access provider servers that cache frequently accessed files). This is similar to the previous idea, except that the decision of what data to cache may be entirely local.
- 3) Your Web browser's cache, which contains the most recent Web files that you have downloaded and which is physically located on your hard disk.
- 4) A disk cache (either a reserved area of RAM or a special hard disk cache) where a copy of the most recently accessed data and adjacent (most likely to be accessed) data is stored for fast access.
- 5) RAM itself, which can be viewed as a cache for data that is initially loaded in from the hard disk (or other I/O storage systems).
- 6) L2 cache memory, which is on a separate chip from the microprocessor but faster to access than regular RAM.
- 7) L1 cache memory on the same chip as the microprocessor.

Cache Memory

Cache memory is random access memory (RAM) that a computer microprocessor can access more quickly than it can access regular RAM. As the microprocessor processes data, it looks first in the cache memory and if it finds the data there (from a previous reading of data), it does not have to do the more time-consuming reading of data from larger memory.

A level-1 (L1) cache is on the same chip as the microprocessor. (For example, the PowerPC 601 processor has 32 kilobytes level-1 cache built into its chip.) Level-2 cache is usually a separate static RAM (SRAM) chip. The main RAM is usually a dynamic RAM (DRAM) chip. SRAM does not have to be electro magnetically refreshed as DRAM does, and is therefore more expensive. A popular SRAM (or cache memory) size is 1048 kilobytes (1 megabyte). Typical DRAM sizes are 4 megabytes to 32 megabytes.

In addition to cache memory, one can think of RAM itself as a cache of memory for hard disk storage since all of RAM's contents come from the hard disk initially when you turn your computer on and load the operating system (you are loading it into RAM) and later as you start new applications and access new data. RAM can also contain a special area called a disk cache that contains the data most recently read in from the hard disk.

Client/Server

Client/server describes the relationship between two computer programs in which one program, the client, makes a service request from another program, the server, which fulfills the request. Although the client/server

idea can be used by programs within a single computer, it is a more important idea in a network. In a network, the client/server model provides a convenient way to interconnect programs that are distributed efficiently across different locations. Computer transactions using the client/server model are very common.

The client/server model has become one of the central ideas of network computing. Most business applications being written today use the client/server model. So does the Internet's main program, TCP/IP.

In the usual client/server model, on server is activated and awaits client requests. Typically, multiple client programs share the services of a common server program. Both client programs and server programs are often part of a larger program application. A computer with TCP/IP installed enables client requests for files from File Transfer Protocol (FTP) servers in other computers on the Internet.

Other program relationship models included master/slave, with one program being in charge of all other programs, and peer-to-peer, with either of two programs able to initiate a transaction.

Device Driver

Software that controls hardware devices such as printers. A driver acts as an interpreter, ensuring that your printer understands commands sent by software programs.

DIMM (Dual In-line Memory Module)

Like a 'double' SIMM, it's a module containing one or several random access memory (RAM) chips on a small circuit board with pins that connect it to the computer motherboard.

Emulation

A term used to describe printer language compatibility. A printer emulates another printer by interpreting the same language for printing. For example, a printer that emulates a Hewlett Packard LaserJet II understands the PCL4 language used with the LaserJet II.

Ethernet

Ethernet is the most widely-installed local area network technology. An Ethernet LAN typically uses coaxial cable or special grades of twisted pair wires. The most commonly installed Ethernet systems are called 10BaseT and provide transmission speeds up to 10 Mbps. Devices are connected to the cable and compete for access using a Carrier Sense Multiple Access with Collision Detection (CSMA/CD) protocol.

Fast Ethernet or 100BaseT provides transmission speeds up to 100 megabits per second and is typically used for LAN backbone systems, supporting workstations with 10BaseT cards.

Font

An alphabet, including a set of numerals, punctuation marks, and other characters of a specific size and typeface design. Fonts may be built into your printer, stored there temporarily with a document, or sent to your printer as graphic images from your computer.

FTP (File Transfer Protocol)

File Transfer Protocol (FTP), a standard Internet protocol, is the simplest way to exchange files between computers on the Internet. Like the Hypertext Transfer Protocol (HTTP), which transfers displayable Web pages and related files, and the Simple Mail Transfer Protocol (SMTP), which transfers e-

mail, FTP is an application protocol that uses the Internet's TCP/IP protocols. FTP is commonly used to transfer Web page files from their creator to the computer that acts as their server for everyone on the Internet. It's also commonly used to download programs and other files to your computer from other servers.

Gateway

A gateway is a network point that acts as an entrance to another network. On the Internet, a node or stopping point can be either a gateway node or a host (end-point) node. Both the computers of Internet users and the computers that serve pages to users are host nodes. The computers that control traffic within your company's network or at your local Internet service provider (ISP) are gateway nodes.

GUI (Graphic User Interface)

A GUI (usually pronounced GOO-ee) is a graphical (rather than purely textual) user interface to a computer. As you read this, you are looking at the GUI or graphical user interface of your particular Web browser. The term came into existence because the first interactive user interfaces to computers were not graphical; they were text-and-keyboard oriented and usually consisted of commands you had to remember and computer responses that were infamously brief. The command interface of the DOS operating system (which you can still get to from your Windows operating system) is an example of the typical user-computer interface before GUIs arrived. An intermediate step in user interfaces between the command line interface and the GUI was the non-graphical *menu-based interface*, which let you interact by using a mouse rather than by having to type in keyboard commands.

Today's major operating systems provide a graphical user interface. Applications typically use the elements of the GUI that come with the operating system and add their own graphical user interface elements and ideas. A GUI sometimes uses one or more metaphors for objects familiar in real life, such as the desktop, the view through a window, or the physical layout in a building. Elements of a GUI include such things as: windows, pull-down menus, buttons, scroll bars, iconic images, wizards, the mouse, and no doubt many things that haven't been invented yet. With the increasing use of multimedia as part of the GUI, sound, voice, motion video, and virtual reality interfaces seem likely to become part of the GUI for many applications. A system's graphical user interface along with its input devices is sometimes referred to as its "look-and-feel."

The GUI familiar to most of us today is either the Mac or the Windows operating systems

Hard Disk

A hard disk is part of a unit, often called a "disk drive," "hard drive," or "hard disk drive," that stores and provides relatively quick access to large amounts of data on an electromagnetically charged surface or set of surfaces. Today's computers typically come with a hard disk that contains several billion bytes (gigabyte) of storage.

A hard disk is really a set of stacked "disks," each of which, like phonograph records, has data recorded electromagnetically in concentric circles or "tracks" on the disk. A "head" (something like a phonograph arm but in a relatively fixed position) records (writes) or reads the information on the tracks. Two heads, one on each side of a disk, read or write the data as the disk spins. Each read or

write operation requires that data be located, which is an operation called a "seek."

HTTP (Hypertext Transfer Protocol)

The Hypertext Transfer Protocol (HTTP) is the set of rules for exchanging files (text, graphic images, sound, video, and other multimedia files) on the World Wide Web. Relative to the TCP/IP suite of protocols (which are the basis for information exchange on the Internet), HTTP is an application protocol.

Essential concepts that are part of HTTP include (as its name implies) the idea that files can contain references to other files whose selection will elicit additional transfer requests. Any Web server machine contains, in addition to the HTML and other files it can serve, an HTTP daemon, a program that is designed to wait for HTTP requests and handle them when they arrive. Your Web browser is an HTTP client, sending requests to server machines. When the browser user enters file requests by either "opening" a Web file (typing in a Uniform Resource Locator) or clicking on a hypertext link, the browser builds an HTTP request and sends it to the Internet Protocol address indicated by the URL. The HTTP daemon in the destination server machine receives the request and, after any necessary processing, the requested file is returned.

Internal Font (Resident Font)

Fonts that are stored in a printer's Read Only Memory. Every printer needs at least one resident font in order to print text sent as a string of ASCII codes. You normally don't need a lot of internal fonts because you rely on your applications software to deliver the fonts you need. If your printer has enough RAM (Random Access Memory), and your applications software permits, you can

download fonts to your printer as "resident". By doing so, your printer can access fonts faster, without waiting for your computer to send them each time you print a document.

IP Address

In the most widely installed level of the Internet Protocol (Internet Protocol) today, an IP address is a 32-binary digit number that identifies each sender or receiver of information that is sent in packet across the Internet. When you request an HTML page or send e-mail, the Internet Protocol part of TCP/IP includes your IP address in the message (actually, in each of the packets if more than one is required) and sends it to the IP address that is obtained by looking up the domain name in the Uniform Resource Locator you requested or in the e-mail address you're sending a note to. At the other end, the recipient can see the IP address of the Web page requestor or the e-mail sender and can respond by sending another message using the IP address it received.

IPX/SPX (Internetwork Packet Exchange /Sequenced Packet Exchange?)

A networking protocol from Novell that interconnects networks that use Novell's NetWare clients and servers. IPX is a packet protocol. IPX works at the network layer of communication protocols and is connectionless. (that is, it doesn't require that a connection be maintained during an exchange of packets as, for example, a regular voice phone call does.)

Packet acknowledgement is managed by another Novell protocol, the Sequenced Packet Exchange? (SPX). SPX prepares the sequence of packets that a message is divided into and manages the reassembly of received packets, confirming that all have

been received and requesting retransmission when they haven't.

IPX/SPX are comparable to the basic Internet protocols TCP and IP.

KM-Net Viewer

A program that gives the Information Services (IS) Administrator a window in which to view all Kyocera Mita products connected to the network. In addition, the administrator can review status and be notified of issues like misfeeds, low paper and toner, and out of paper and toner.

Mbps (Megabits Per Second)

Mbps stands for *millions of bits per second* or *megabits per second* and is a measure of bandwidth (the total information flow over a given time) on a telecommunications medium. Depending on the medium and the transmission method, bandwidth is sometimes measured in the Kbps (thousands of bits or kilobits per second).

NetBEUI (NetBIOS Extended User Interface)

NetBEUI (NetBIOS Extended User Interface) is a new, extended version of NetBIOS, the program that lets computers communicate within a local area network. NetBEUI (pronounced net-BOO-ee) formalizes the frame format (or arrangement of information in a data transmission) that was not specified as part of NetBIOS. NetBEUI was developed by IBM for its LAN Manager product and has been adopted by Microsoft for its Windows NT, LAN Manager, and Windows for Workgroups products. Hewlett-Packard and DEC use it in comparable products.

NetBEUI is the best performance choice for communication within a single LAN. Because, like NetBIOS, it does not support the routing

of messages to other networks, its interface must be adapted to other protocols such as Internetwork Packet Exchange or TCP/IP. A recommended method is to install both NetBEUI and TCP/IP in each computer and set the server up to use NetBEUI for communication within the LAN and TCP/IP for communication beyond the LAN.

NetBIOS (Network Basic Input/Output System)

NetBIOS (Network Basic Input/Output System) is a program that allows applications on different computers to communicate within a local area network (). It was created by IBM for its early PC Network, was adopted by Microsoft, and has since become a de facto industry standard. NetBIOS is used in Ethernet, token ring, and Windows NT networks. It does not in itself support a routing mechanism so applications communicating on a wide area network (WAN) must use another "transport mechanism" (such as Transmission Control Protocol) rather than or in addition to NetBIOS. NetBIOS frees the application from having to understand the details of the network, including error recovery.

NetBIOS provides two communication modes: session or datagram. Session mode lets two computers establish a connection for a "conversation," allows larger messages to be handled, and provides error detection and recovery. Datagram mode is "connectionless" (each message is sent independently), messages must be smaller, and the application is responsible for error detection and recovery. Datagram mode also supports the broadcast of a message to every computer on the LAN.

NIC (Network Interface Card)

A network interface card (NIC) is a computer circuit board or card that is installed in a computer so that it can be connected to a network. Personal computers and workstations on a local area network (LAN) typically contain a network interface card specifically designed for the LAN transmission technology, such as Ethernet or token ring. Network interface cards provide a dedicated, full-time connection to a network.

Operating System

An operating system (sometimes abbreviated as "OS") is the program that, after being initially loaded into the computer by a boot program, manages all the other programs in a computer. The other programs are called *applications* or application programs. The application programs make use of the operating system by making requests for services through a defined application program interface (API). In addition, users can interact directly with the operating system through a user interface such as a command language or a graphical user interface (GUI).

An operating system performs these services for applications:

- ✍ In a multitasking operating system where multiple programs can be running at the same time, the operating system determines which applications should run in what order and how much time should be allowed for each application before giving another application a turn.
- ✍ It manages the sharing of internal memory among multiple applications.
- ✍ It handles input and output to and from attached hardware devices, such as hard disks, printers, and dial-up ports.
- ✍ It sends messages to each application or interactive user (or to a system operator)

about the status of operation and any errors that may have occurred.

- ✍ It can offload the management of what are called *batch* jobs (for example, printing) so that the initiating application is freed from this work.
- ✍ On computers that can provide parallel processing, an operating system can manage how to divide the program so that it runs on more than one processor at a time.

All major computer platforms (hardware and software) require, and sometimes include, an operating system. Linux, Windows 2000, VMS, OS/400, AIX, and z/OS are all examples of operating systems.

Outline Font (Scaleable Font)

Equations are used to describe and store each font character. Characters can be scaled to any size, with the equation maintaining the same proportions.

Packet

A packet is the unit of data that is routed between an origin and a destination on the Internet or any other packet-switched network. When any file (e-mail message, HTML file, Graphics Interchange Format file, Uniform Resource Locator request, and so forth) is sent from one place to another on the Internet, the Transmission Control Protocol (TCP) layer of TCP/IP divides the file into "chunks" of an efficient size for routing. Each of these packets is separately numbered and includes the Internet address of the destination. The individual packets for a given file may travel different routes through the Internet. When they have all arrived, they are re-assembled into the original file (by the TCP layer at the receiving end).

A packet-switching scheme is an efficient way to handle transmissions on a connectionless network such as the Internet.

Parallel Port

A computer interface that communicates with an external devices such as a printer. In parallel mode, data is sent eight bits at a time through eight wires. While parallel data transfer than serial transfer, it has distance limitation; your printer should be located no more than 20 feet away from your computer.

Pages Per Minute (PPM)

A measurement that refers to the printer's engine speed. Pages per minute is the maximum number of sheets the printer can physically output each minute. Complex pages with many fonts or complex graphics will take longer to print.

Port

On computer and telecommunication devices, a *port* (noun) is generally a specific place for being physically connected to some other device, usually with a socket and plug of some kind. Typically, a personal computer is provided with one or more serial ports and usually one parallel port.

In programming, a port (noun) is a "logical connection place" and specifically, using the Internet's protocol, TCP/IP, the way a client program specifies a particular server program on a computer in a network. Higher-level applications that use TCP/IP such as the Web protocol, Hypertext Transfer Protocol, have ports with pre-assigned numbers. These are known as "well-known ports" that have been assigned by the Internet Assigned Numbers Authority (Internet Assigned Numbers Authority). Other application processes are given port numbers dynamically for each

connection. When a service (server program) initially is started, it is said to bind to its designated port number. As any client program wants to use that server, it also must request to bind to the designated port number.

Printer Environments

Small Workgroup:

☞ Up to Five Users

☞ 12 pages per minute laser printers

Medium Size Workgroup:

☞ 6 to 15 Users

☞ 17 –200 pages per minute laser printers

Departmental:

☞ More than 15 Users

☞ 32 pages per minute laser printers

Enterprise-wide:

☞ High Volume/Production (for printing 100,000 pages or more a month)

☞ From 30 pages per minute up to 1,000 pages per minute

Protocol

In information technology, a protocol (pronounced PROH-tuh-cahl, from the Greek *protocollon*, which was a leaf of paper glued to a manuscript volume, describing its contents) is the special set of rules that end points in a telecommunication connection use when they communicate. Protocols exist at several levels in a telecommunication connection. There are hardware telephone protocols. There are protocols between each of several functional layers and the corresponding layers at the other end of a communication. Both end points must recognize and observe a protocol. Protocols are often described in an industry or international standard.

On the Internet, there are the TCP/IP protocols, consisting of:

- 1) Transmission Control Protocol (TCP), which uses a set of rules to exchange messages with other Internet points at the information packet level.
- 2) Internet Protocol (IP), which uses a set of rules to send and receive messages at the Internet address level.
- 3) HTTP, FTP, and other protocols, each with defined sets of rules to use with other Internet points relative to a defined set of capabilities

RAM (Random Access Memory)

Also known as "Read-Write Memory" this is the memory used to execute application programs and store images.

RAM is much faster to read from and write to than the other kinds of storage in a computer, the hard disk, floppy disk, and CD-ROM. However, the data in RAM stays there only as long as your computer is running. When you turn the computer off, RAM loses its data. When you turn your computer on again, your operating system and other files are once again loaded into RAM, usually from your hard disk.

RAM can be compared to a person's short-term memory and the hard disk to the long-term memory. The short-term memory focuses on work at hand, but can only keep so many facts in view at one time. If short-term memory fills up, your brain sometimes is able to refresh it from facts stored in long-term memory. A computer also works this way. If RAM fills up, the processor needs to continually go to the hard disk to overlay old data in RAM with new, slowing down the computer's operation. Unlike the hard disk, which can become completely full of data so that it won't accept any more, RAM never runs out

of memory. It keeps operating, but much more slowly than you may want it to.

RAM is small, both in physical size (it's stored in microchip) and in the amount of data it can hold. It's much smaller than your hard disk. A typical computer may come with 32 million bytes of RAM and a hard disk that can hold 4 billion bytes. RAM comes in the form of "discrete" (meaning separate) microchip and also in the form of module that plug into holes in the computer's motherboard. These holes connect through a bus or set of electrical paths to the processor. The hard drive, on the other hand, stores data on a magnetized surface that looks like a phonograph record.

Today's personal computers come with 128 or more megabyte of RAM, usually increasing in multiples of 32 megabytes. Users of graphic applications usually need 128 or 256 megabytes of memory. Most personal computers are designed to allow you to add additional RAM modules up to a certain limit (for example, up to 384 or 512 megabytes). Having more RAM in your computer reduces the number of times that the computer processor has to read data in from your hard disk, an operation that takes much longer than reading data from RAM. (RAM access time is in nanosecond; hard disk access time is in millisecond.)

RARP(Reverse Address Resolution Protocol)

RARP (Reverse Address Resolution Protocol) is a protocol by which a physical machine in a local area network can request to learn its IP address from a gateway server's Address Resolution Protocol (Address Resolution Protocol) table or cache. A network administrator creates a table in a local area network's gateway router that maps the

physical machine (or Media Access Control - MAC address) addresses to corresponding Internet Protocol addresses. When a new machine is set up, its RARP client program requests from the RARP server on the router to be sent its IP address. Assuming that an entry has been set up in the router table, the RARP server will return the IP address to the machine which can store it for future use.

Raster Graphics

Raster graphics are digital images created or captured (for example, by scanner in a photo) as a set of samples of a given space. A *raster* is a grid of x and y coordinates on a display space. (And for three-dimensional images, a z coordinate.) A raster image file identifies which of these coordinates to illuminate in monochrome or color values. The raster file is sometimes referred to as a bitmap because it contains information that is directly mapped to the display grid.

A raster file is usually larger than a vector graphics image file. A raster file is usually difficult to modify without loss of information, although there are software tools that can convert a raster file into a vector file for refinement and changes. Examples of raster image file types are: BMP, TIFF, Graphics Interchange Format, and JPEG files.

Resolution

The level of detail that can be printed by a printer, indicated by dots per inch (dpi). Most businesses use a 300 or 600 dpi printer.

RIP (Raster Image Processor)

A hardware or combination hardware/software product that converts images described in the form of vector statements into rasterized images or bitmaps. For example, laser printers use RIPs to convert

images that arrive in vector form (for example, text in a specified font) into rasterized and therefore printable form.

RISC (Reduced Instruction Set Computing)

A type of processor that understands a smaller number of instructions than an ordinary processor. RISC processors can be much faster than ordinary processors, particularly for intensive calculations such as those performed by a laser printer.

SCSI (Small Computer System Interface)

A type of port used for connecting computers to peripherals (such as printers), to other computers or to local area networks. A single port can accommodate a number of peripherals through a series of connections called a "daisy chain".

SDRAM (Synchronous Dynamic Random Access Memory)

Synchronous DRAM (SDRAM) is a generic name for various kinds of DRAM that are synchronized with the clock speed that the microprocessor is optimized for. This tends to increase the number of instructions that the processor can perform in a given time.

SIMM (Single In-Line Memory Module)

A module containing one or several random access memory (RAM) chips on a small circuit board with pins that connect to the computer motherboard. Since the more RAM your computer has, the less frequently it will need to access your secondary storage (for example, hard disk or CD-ROM), PC owners sometimes expand RAM by installing additional SIMMs. SIMMs usually come in memory chip multiples of 4 megabytes.

Serial Port

A computer interface that communicates with an external device such as a printer. In serial mode, data is sent one bit at a time through one wire and is therefore slower than parallel. It can, however, be accomplished when printers are located more than 20 feet from connected computers.

Server

In general, a server is a computer program that provides services to other computer programs in the same or other computers.

The computer that a server program runs in is also frequently referred to as a server (though it may contain a number of server and client programs).

In the client/server programming model, a server is a program that awaits and fulfills requests from client programs in the same or other computers. A given application in a computer may function as a *client* with requests for services from other programs and also as a *server* of requests from other programs.

Specific to the Web, a Web server is the computer program (housed in a computer) that serves requested HTML pages or files. A Web *client* is the requesting program associated with the user. The Web browser in your computer is a client that requests HTML files from Web servers.

Smoothing

An image enhancement feature. With smoothing, the printer fills in the jagged edges of an image with small dots to create a smoother looking line.

SMTP (Simple Mail Transfer Protocol)

A TCP/IP protocol used in sending and receiving e-mail. However, since it's limited in its ability to queue messages at the receiving end, it's usually used with one of two other protocols, POP3 or IMAP, that let the user save messages in a server mailbox and download them periodically from the server. In other words, users typically use a program that uses SMTP for sending e-mail and either POP3 or IMAP for receiving messages that have been received for them at their local server.

SNMP (Simple Network Management Protocol)

SNMP is the protocol governing network management and the monitoring of network devices and their functions.

Spool (Simultaneous Peripheral Operations Online)

To spool a computer document or task list (or "job") is to read it in and store it, usually on a hard disk or larger storage medium so that it can be printed or otherwise processed at a more convenient time (for example, when a printer is finished printing its current document). One can envision spooling as reeling a document or task list onto a spool of thread so that it can be unreeled at a more convenient time.

Actually, a printer has a buffer but frequently the buffer isn't large enough to hold the entire document, requiring multiple I/O operations with the printer.

The spooling of documents for printing and batch job requests still goes on in mainframe computers where many users share a pool of resources. On personal computers, your print jobs (for example, a Web page you want to

print) are spooled to an output file on hard disk if your printer is already printing another file.

TCP/IP (Transmission Control Protocol/Internet Protocol)

Transmission Control Protocol/Internet Protocol (TCP/IP) is the basic communication language or protocol of the Internet. It can also be used as a communications protocol in a private network (either an intranet or an extranet). When you are set up with direct access to the Internet, your computer is provided with a copy of the TCP/IP program just as every other computer that you may send messages to or get information from also has a copy of TCP/IP.

TCP/IP is a two-layer program. The higher layer, Transmission Control Protocol, manages the assembling of a message or file into smaller packets (see packet) that are transmitted over the Internet and received by a TCP layer that reassembles the packets into the original message. The lower layer, Internet Protocol, handles the address part of each packet so that it gets to the right destination. Each gateway computer on the network checks this address to see where to forward the message. Even though some packets from the same message are routed differently than others, they'll be reassembled at the destination.

TCP/IP uses the client/server model of communication in which a computer user (a client) requests and is provided a service (such as sending a Web page) by another computer (a server) in the network. TCP/IP communication is primarily point-to-point, meaning each communication is from one point (or host computer) in the network to another point or host computer. TCP/IP and the

higher-level applications that use it are collectively said to be "stateless" because each client request is considered a new request unrelated to any previous one (unlike ordinary phone conversations that require a dedicated connection for the call duration). Being stateless frees network paths so that everyone can use them continuously. (Note that the TCP layer itself is not stateless as far as any one message is concerned. Its connection remains in place until all packets in a message have been received.)

Many Internet users are familiar with the even higher layer application protocols that use TCP/IP to get to the Internet. These include the World Wide Web's Hypertext Transfer Protocol (HTTP), the File Transfer Protocol (FTP), Telnet (Telnet) which lets you logon to remote computers, and the Simple Mail Transfer Protocol (SMTP). These and other protocols are often packaged together with TCP/IP as a "suite."

Vector Graphics

Vector graphics is the creation of digital images through a sequence of commands or mathematical statements that place lines and shapes in a given two-dimensional or three-dimensional space. In physics, a *vector* is a representation of both a quantity and a direction at the same time. In vector graphics, the file that results from a graphic artist's work is created and saved as a sequence of vector statements. For example, instead of containing a bit in the file for each bit of a line drawing, a vector graphic file describes a series of points to be connected. One result is a much smaller file.

At some point, a vector image is converted into a raster graphics image, which maps bits directly to a display space (and is sometimes

called a *bitmap*). The vector image can be converted to a raster image file prior to its display so that it can be ported between systems.

A vector file is sometimes called a *geometric* file. Most images created with tools such as Adobe Illustrator and CorelDraw are in the form of vector image files. Vector image files are easier to modify than raster image files (which can, however, sometimes be reconverted to vector files for further refinement).

Windows NT

Windows NT is a Microsoft Windows personal computer operating system designed for users and businesses needing advanced capability. NT's technology is the base for the Microsoft successor operating system, Windows 2000. Windows NT (which may originally have stood for "New Technology," although Microsoft doesn't say) is actually two products: Microsoft NT Workstation and Microsoft NT Server.

The Workstation is designed for users, especially business users, who need faster performance and a system a little more fail-safe than Windows 95 and Windows 98. The Server is designed for business machines that need to provide services for network-attached computers. The Server is required, together with an Internet server such as Microsoft's Internet Information Server (IIS), for a Windows system that plans to serve Web pages.

Windows NT Workstation:

Microsoft says that 32-bit applications will run 20% faster on this system than on Windows 95 (assuming both have 32 megabytes of RAM). Since older 16-bit applications run in a separate address space, one can crash

without crashing other applications or the operating system. Security and management features not available on Windows 95 are provided. The Workstation has the same desktop user interface as Windows 95.

Windows NT Server:

The NT Server is probably the second most installed network server operating system after Novell's NetWare operating system. Microsoft claims that its NT servers are beginning to replace both NetWare and the various UNIX-based systems such as those of Sun Microsystems and Hewlett-Packard. Windows 2000:

The latest commercial version of Microsoft's evolving Windows operating system. Previously called Windows NT 5.0, Microsoft emphasizes that Windows 2000 is evolutionary and "Built on NT Technology." Windows 2000 is designed to appeal to small business and professional users as well as to the more technical and larger business market for which the NT was designed. For many Windows 95 and Windows 98 users, Windows 2000 may be regarded as a step to take when purchasing their next computer.

Windows 2000 Professional

Aimed at individuals and businesses of all sizes. It includes security and mobile use enhancements. It is the most economical choice.

Windows 2000 Server

Aimed at small-to-medium size businesses. It can function as a Web server and/or a workgroup (or branch office) server. It can be part of a two-way symmetric multiprocessing system. NT 4.0 servers can be upgraded to this server.

Windows 2000 Advanced Server

Aimed at being a network operating system server and/or an application server, including those involving large databases. This server facilitates *clustering* and *load-balancing*. NT 4.0 servers with up to eight-way SMP can upgrade to this product.

Windows 2000 Datacenter Server:

Designed for large data warehouses, online transaction processing (OLTP), econometric analysis, and other applications requiring high-speed computation and large databases. The Datacenter Server supports up to 16-

way SMP and up to 64 gigabytes of physical memory.

Windows 98

Windows 98 is a widely-installed product in Microsoft's evolution of the Windows operating system for personal computers.

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*Written by:
Alexander J. Davidoff*