Kyocera Mita NDPS Gateway Administrator's Guide

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Quick Start

The following instructions are for Administrators familiar with NDPS that just want the most basic steps for getting an LPR printer up and running with the Kyocera Mita NDPS Gateway.

1. Set the IP address, subnet mask and default gateway on the printer.
2. Run the Installer to load the Kyocera Mita NDPS Gateway to a NetWare 5 server SYS volume.
3. Load the NDPS Broker and NDPS Manager (if they don't already exist, create them with NWAdmin). At the server console type: `LOAD BROKER` and then `LOAD NDPSM`.
4. Open NWAdmin and install the printer drivers from the Kyocera Mita Digital Library CD into the NDPS Broker using the **Resource Management (RMS)** page.
5. Select the container where the Printer Agent will reside and create a new NDPS Printer object.
6. Type a name for the Printer Agent and click **Create**.
7. Type or select the NDPS Manager for the Printer Agent, select the **Kyocera Mita NDPS Gateway Configuration**, and click **OK**.
8. Select **LPR on IP** and enter the IP address of the printer which will be represented by the NDPS Printer Agent.
9. Once created, double click on the Printer Agent object to open the Printer Control screen to view printer configuration and status details.

Kyocera Mita NDPS Gateway Overview

Novell Distributed Print Services (NDPS) is a new printing architecture for NetWare 4.x and 5.x environments that provides enhanced printing functionality and improved printer administration which were not available in the previous queue management system printing model.

Three NDS objects are required for NDPS operation; the NDPS Broker, the NDPS Manager, and the Printer Agent. The Broker is responsible for management of resources and services such as printer drivers and notification. The NDPS Manager provides a single point of management for multiple Printer Agents. The Printer Agent represents the physical printer.

The NDPS Gateway assumes the role of the Printer Agent for printers which do not internally support NDPS. Novell supplies a default NDPS Gateway which provides printing and basic status feedback for a variety of printers, however, the Kyocera Mita NDPS Gateway is needed for full featured NDPS support of Kyocera Mita printers.

Features

The Kyocera Mita NDPS Gateway provides the following NDPS features. These features are described in depth later in this guide.

- Plug and Print
- Automatic Driver Download
- Public Access and Controlled Access Printing Support
- IP and IPX Printing Support
- Printer Agent Configuration Via Server Console and NWAdmin
- Detailed Printer Status Monitoring Including Printer Configuration and Front Panel Display in NWAdmin
- Detect Error Conditions and Generate Messages to Users and/or Admins

Supported Platforms

Server Requirements

The Kyocera Mita NDPS Gateway is compatible with NDPS in NetWare 5.

Novell announced and shipped NDPS for NetWare 4.11, but due to problems with the initial release, Novell suspended shipment on NDPS for 4.11 in January 1999. See the Readme file for updated information on 4.11/4.2 support.

NDPS Installation Requirement

The gateway requires NDPS to be installed on the NetWare 5 server. NDPS is installed by default during NetWare 5 installation. You may verify that NDPS is installed by loading NWCONFIG.NLM, selecting **Product Options**, then **View/Configure/Remove Installed products**. NDPS should be displayed on the list of Currently Installed Products. If NDPS does not appear on the list, it may be installed by selecting **Product Options**, **Choose an item or product listed above**, and selecting **NDPS**.

An NDPS Broker object is created during NDPS installation. An NDPS Manager object must also be created with NWAdmin. The NDPS Broker and the NDPS Manager must be loaded at the server console before NDPS Printer Agents can be created.

Client Requirements

A NetWare client which supports NDPS is required. The following NetWare client versions support NDPS in NetWare 5. It is recommended to obtain the latest NetWare client version.

NetWare Client for Windows 3.1 version 2.7 or higher
NetWare Client for Windows 95/98/Me version 3.21 or higher
NetWare Client for Windows NT4/2000 version 4.71 or higher

The Kyocera Mita NDPS Gateway NWAdmin Snap-in is supported in Windows 95, 98, Me, NT 4.0 and 2000.

Supported Printers and Network Interface Cards

The Kyocera Mita NDPS Gateway and NWAdmin Snap-in support the following printers:

FS-Series		LS-Series	KM-Series	DP-Series
FS-1000	FS-6300	LS-1200	KM-1510	DP-1400
FS-1000+	FS-6700	LS-1700	KM-1530	DP-1800
FS-1200	FS-6750	LS-1800	KM-1570	DP-2000
FS-1700	FS-680	LS-3700	KM-1810	DP-2800
FS-1700+	FS-6900	LS-3800	KM-2030	DP-2800+
FS-1750	FS-7000	LS-6300	KM-2070	DP-3600
FS-1800	FS-7000+	LS-6700	KM-2530	
FS-3700	FS-800	LS-6700S	KM-3530	
FS-3700+	FS-8000C	LS-6800	KM-4230	
FS-3750	FS-9000	LS-7000	KM-4830w	
FS-3800	FS-9100DN	LS-7700	KM-5230	
FS-5800C	FS-9500DN	LS-800	KM-6230	
FS-5900C		LS-8000C		
FS-600		LS-9000		

Kyocera Mita models not recognized by the gateway may be setup for NDPS printing with the NetWare NDPS Gateway. See the Readme file for the latest model support information.

In order to be supported by the Kyocera Mita NDPS Gateway, the above printer models must also have one of the following supported network interface cards installed:
IB-2x cards: gateway supports IP and IPX
Intercon cards: gateway supports IP and IPX
EcoLAN cards: gateway supports IP and IPX
EcoLink cards: gateway supports IP only

Supported Locales

The Kyocera Mita NDPS Gateway supports English, French, German, Italian, Portuguese and Spanish. The NetWare server language version determines the language displayed on the server console. The NWAdmin Snap-in language is chosen based on the locale of the Windows workstation. If the locale does not correspond to one of the 5 available languages, then it will use English as the default.

Installation

Files Installed by the Gateway

If you are reading this, the gateway has already been installed. Following is the list of files installed by the gateway installer.

Installed to SYS:\SYSTEM
KYGATE.NLM	Gateway
KYLIB.NLM	Library
KYPNP.NLM	Plug and Print
KYCON.NLM	Gateway Configuration
KYCFG.PD0	Server based IPX Printer Configuration

Installed to SYS:\SYSTEM\NLS
*.MSG & *.HLP	Language Specific Files

Installed to SYS:\PUBLIC\WIN32
KYCFG.PD2	Windows based IPX Printer Configuration
KYCFGRES.DLL	Windows based Configuration
KYMSG.DLL	Language Specific Resources
KYOCERA.PC2	NWAdmin Snapin
AUCOSNMP.DLL	Windows SNMP Library
AUCNDSLB.DLL	Auco NDS Library
KCMV3DA.DLL	Snap-in library file
KCPMPI.DLL	Snap-in library file
KC*.DAT, KPMEP.DAT	Model support files for the snap-in
KYNDPS.PDF	Administrator's Guide
README.TXT	Latest Information and Administrator's Guide in text format

Installed to SYS:\PUBLIC\WIN32\NLS\Language
KYNDPS.HLP, .CNT	Language Specific Snapin Help

NDPS Driver Installation

Once a printer driver is assigned to an NDPS Printer Agent, the driver will be automatically downloaded to the client system when a client selects that Printer Agent.

Before it can be assigned to a Printer Agent the printer driver must be installed into the NDPS printer driver database (SYS:ndps\resdir\Prndrv) which is managed by the NDPS Broker. If there are multiple brokers on the network, the printer drivers should be installed to all brokers.

Drivers may be installed into the NDPS printer driver database by using the Kyocera Mita NDPS Driver Installer in the Networking section on the Kyocera Mita printer CD or by using the procedure below:

Installing the Driver into the NDPS Driver Database
1. If the NDPS Broker is not already loaded, load it from the server console.
2. In NWAdmin, double click on the NDPS Broker object.
3. Select the **Resource Management (RMS)** page and select **Add Resources**.
4. Select a Windows version from the list of Resource Types, **Windows 3.1, 95/98, NT 4.0** or **2000.** A list of currently installed drivers is displayed. Select **Add** to install the new driver.
5. Insert the Kyocera Mita Digital Library CD and browse to the appropriate directory, for example to install French Windows 98 KPDL drivers, browse to Drivers\French\Kpdl\9x.
6. Repeat for each desired Windows version.
7. Repeat the entire procedure for each NDPS Broker if there is more than one in the NDS tree.

To assign the printer driver to the Printer Agent, see Auto Driver Download.

NDPS Printer Agents

The Printer Agent is the NDS object which represents the physical printer. NDPS clients send print jobs to the Printer Agent. The Kyocera Mita NDPS Gateway configures and manages the communication between the physical printer and the Printer Agent.

The NDPS Broker and NDPS Manager objects must be loaded before NDPS Printer Agents can be created. At the server console, type: LOAD BROKER and select the NDPS Broker, then type: LOAD NDPSM and select the NDPS Manager.

IP vs. IPX Printer Agents
Both IP and IPX Printer Agents are supported by the Kyocera Mita NDPS Gateway, allowing communications with the printer via either the IP or IPX protocol. IP Printer Agents are easier to configure and manage and are therefore the recommended choice for network environments where IP is already in use.

Public Access vs. Controlled Access Printer Agents
To provide flexibility in printer management and security, NDPS offers two types of Printer Agents, Public Access and Controlled Access. A Public Access Printer Agent does not require client authentication to be accessed and does not exist as an NDS object, but rather resides within the NDPS Manager object. A Controlled Access Printer Agent exists as an NDS object, subject to all NDS security policies. Only authenticated clients can access a Controlled Access Printer Agent.

Plug and Print
Plug and Print is a feature provided by the Kyocera Mita NDPS Gateway which allows a printer to be automatically configured for printing when it is attached to the network. Plug and Print creates only Public Access Printer Agents. Public Access Printer Agents may be converted to Controlled Access at any time using NWAdmin.

If a Printer Agent has been previously created and deleted, Plug and Print will not create a new Printer Agent. See Printer Agent and Suppressed Printer List.

Creating an IP *Printer Agent with Plug and Print*
The Kyocera Mita NDPS Plug and Print program will find all supported Kyocera Mita printers with an assigned IP address and will create Public Access Printer Agents for them. If IP multicast forwarding is enabled by the network routers, Plug and Print will discover printers within 3 hops. The discovery distance as well as discovery filters may be configured using KYCON.
IP Plug and Print creates Printer Agents with a name in the following format:
ModelName_IP-Address@IP, e.g. FS-9000_202-198-43-20@IP.

Starting IP Plug and Print

Creating an IPX *Printer Agent with Plug and Print*
The Kyocera Mita NDPS Plug and Print program, KYPNP, will find supported Kyocera Mita printers and will create Public Access Printer Agents for them. KYPNP will discover printers within 3 hops. The discovery distance as well as discovery filters may be configured using KYCON.

When KYPNP creates an IPX Printer Agent, the following actions occur:
- If it does not already exist, a container called Kyo_NDPS is created below the NDPS Manager's container.
- Queue Management System (QMS) print objects (the Print Server, Printer, and Queue) are created in the Kyo_NDPS container. These are required for IPX connectivity to the printer.
- The printer network card is configured with the Print Server name and Context to allow it to connect to the QMS print objects.
- The IPX Printer Agent is given the name of the printer's Advertising Print Server Name, e.g. IC020167.
- Print jobs directed to the Printer Agent are forwarded by the Gateway to the QMS Print Queue.

KYPNP will not create an IPX Printer Agent for printers which are already configured for NDS printing, for both NDS and Bindery printing or as a Remote Printer (RPRINTER/NPRINTER mode).

WARNING: A printer configured only for Bindery printing (as a Bindery Print Server) will be reconfigured as a Printer Agent by KYPNP, thus making the existing Bindery printing setup invalid. Therefore administrators wishing to maintain existing Bindery Print Servers, such as for NetWare 3.12, should NOT use IPX Plug and Print.

Starting and Stopping Plug and Print
Plug and Print will not start if an NDPS Manager is not already loaded (at the server console type: LOAD NDPSM). To avoid creation of multiple Printer Agents for a single printer, Plug and Print should only be run on one server.

Plug and Print is started with a command string at the server console.
For IPX enter: LOAD KYPNP
For IP enter: LOAD KYPNP LPR=1

To stop Plug and Print, enter:
UNLOAD KYPNP

Creating a Printer Agent with NWAdmin
To create a Controlled Access Printer Agent:
1. Right click on the container where the Printer Agent will reside and click on **Create**.
2. Select **NDPS Printer** and click **OK**.
3. Type a name for the Printer Agent and click **Create**. (If converting a Public Access Printer Agent to Controlled Access, select the **Public Access Printer** radio button for Printer Agent Source.)
4. Type or select the NDPS Manager for the Printer Agent, select the **Kyocera Mita NDPS Gateway Configuration**, and click **OK**.
5. Select LPR on IP or Queue Based. LPR on IP is the recommended choice for network environments where IP is already in use.

To create a Public Access Printer Agent:
1. Double click on the NDPS Manager object in the NDS tree.
2. Click on **Printer Agent List** and select **New**.
3. Type a name for the Printer Agent, select the **Kyocera Mita NDPS Gateway Configuration**, and click **OK**.
4. Select LPR on IP or Queue Based. LPR on IP is the recommended choice for network environments where IP is already in use.

LPR on IP - an IP Printer Agent
To use this option the printer must already be configured for IP communication including IP address, subnet mask, and default gateway.

Enter the IP address of the printer which will be represented by the NDPS Printer Agent.

If you receive an error message that the Printer Agent just created needs attention, it may be for any of the following reasons:
1. The printer is not on, is not connected to the network, or the IP parameters (IP address, subnet mask, and default gateway) have not been configured. You may quickly verify a printer's availability on the network by pinging it, e.g. ping 205.97.43.22, however, you may be able to ping a printer and still not be able to connect the Printer Agent to it. The printer must also be able to receive SNMP queries from the server. Pings will generally not be blocked by a router or firewall, but SNMP queries may be.
2. The printer model or printer network card is not supported.

Queue Based - an IPX Printer Agent
This option will create the necessary print objects and configure the printer for queue based printing. A Printer Agent may be created for a new printer or for an existing printer which is already configured for queue based printing, however, be aware that IT IS POSSIBLE TO OVERWRITE AN EXISTING PRINTER'S CURRENT CONFIGURATION AND MAKE IT INVALID. See also Context for Queue Objects.

Each entry on the Queue based configuration screen is described in the following sections.

Advertising Print Server
Click the down arrow to see the list of Kyocera Mita printers advertising on IPX that are qualified to support an NDPS Printer Agent. If the list does not fit in the box, use the scroll bar to see additional printers.

This list includes all printers qualified to be a Kyocera Mita NDPS Printer Agent. Therefore it may include new printers on the network, existing printers already setup for queue based printing, and printers already defined as an NDPS Printer Agent.

If a printer that you expect to see on the list does not appear, it may be missing for any of the following reasons:

1. The printer is not on or is not connected to the network. (The list actually is provided by the NetWare server, so a printer which has been turned off or disconnected will still appear on the list for several minutes).
2. The printer model or printer network card is not supported.
3. The NetWare protocol has been disabled on the network card.
4. Printers register with the NetWare servers by means of SAPs. If a printer is not on the local segment and does not appear on the list, a router may be filtering out the SAPs.

Printer Information
The printer model and the IPX network number and node address are read from the printer and displayed here.

Manual Configuration
The Kyocera Mita NDPS Gateway uses default values for the queue based object names and locations. Check the Manual Configuration box to manually enter the information.

Warning: If you are creating a Printer Agent for an existing printer which is already setup for queue based printing, accepting the default values will cause the existing queue based configuration to be invalid. To maintain the existing configuration, use manual configuration to define the context of the existing queue based objects. Existing remote printer mode configurations will be made invalid. See Remote Printer Mode Warning.

Context for Queue Objects
The default context for the queue based objects (Print Server, Printer, and Queue) is the Kyo_NDPS container in the context of the selected NDPS Manager. If the Kyo_NDPS container does not exist, it will be created. To change the default context, check the Manual Configuration box and enter the desired context for the queue objects.

When creating a Controlled Access Printer Agent, note that the Context for Queue Objects does not represent the context of the Printer Agent. A Controlled Access Printer Agent is created in the container highlighted when Create is selected. Usually it is desirable to have the Printer Agent and the queue objects in different containers.

When creating a Public Access Printer Agent, the Printer Agent does not have its own context.

Queue Based Warning: If you are creating a Printer Agent for an existing printer which is already setup for queue based printing AND YOU WANT TO MAINTAIN THE EXISTING QUEUE BASED CONFIGURATION, then enter the context of the existing queue objects. When you exit the Context for Queue Objects field, the Printer Name field will be updated with the correct name of the print server's associated printer object. Thus the NDPS Printer Agent will use the same Print Server and Printer objects as the existing configuration, however, a new queue will be created to service the NDPS Printer Agent. The name of the queue serviced by the NDPS Printer Agent is the Printer Agent name followed by "_Queue".

Remote Printer Mode Warning: If a printer is already configured for network printing in remote printer mode (the network card connects to Pserver.nlm or Pserver.exe), CREATING AN IPX QUEUE BASED PRINTER AGENT WILL INVALIDATE THE EXISTING REMOTE MODE CONFIGURATION.

Print Server Name
This is the name currently advertised as the Print Server name by the printer. To modify the name, check the Manual Configuration box and enter the desired Print Server name.

Warning: If an existing queue based configuration exists for this printer, changing the Print Server name will make the existing configuration invalid.

Printer Name
This is the name of the Printer object associated with the Print Server. To maintain an existing queue based configuration, see Context for Queue Objects.

NDS Volume for Print Queue
A default print queue volume is displayed. To change the print queue volume, check the Manual Configuration box and enter a typeless distinguished volume name, e.g. NW50_SYS.atlanta.acme

SNMP Write Community
SNMP is used to set parameters on the network card for queue based printing. To provide security from unauthorized changes via SNMP, SNMP Write operations must include the correct SNMP Write Community Name. The default Write Community for Intercon network cards is "public", however, if a password is set for the Intercon card, enter the password as the Write Community name. The default Write Community for EcoLAN network cards is "private". The Write Community may be changed on EcoLAN cards with SNMP management tools such as HP OpenView.

Creating a Printer Agent at the Server Console
1. If not already loaded, load the NDPS Broker by typing: `LOAD BROKER` and then selecting the NDPS Broker.
2. If not already loaded, load the NDPS Manager by typing `LOAD NDPSM` and then selecting the NDPS Manager.
3. Select **Printer Agent List** from the NDPS Manager Available Options menu.
4. Press **Insert**, type a name for the new Printer Agent, and press **Enter**.
5. Select **Configuration Utilities: (See List)**
6. Select **Kyocera Mita NDPS Gateway** as the Gateway Type.

The following sections describe the various configuration options with the Kyocera Mita NDPS Gateway.

Select Port Handler Type
This menu allows selecting how the Printer Agent will communicate with your NDPS Printer. LPR on IP is the preferred method for NDPS printing.

Select from List
Select this option to create a Printer Agent by choosing from a list of qualified printers. Use the Up and Down Arrows to select the printer you wish to create an NDPS Printer Agent for.

If a printer that you expect to see on the list does not appear, it may be missing for any of the following reasons:
1. The printer is not on or is not connected to the network.
2. The printer model or printer network card is not supported.
3. The printer is too many hops away or discovery has been totally disabled or disabled for the printer's segment. Check the settings in KYCON.

Select a printer displayed by IP address to enter the Remote (LPR on IP) configuration. Select a printer displayed by IPX network and node number to enter the Queue Based (IPX) configuration.

Remote (LPR on IP)
Select this option to manually configure the Printer Agent to communicate with the printer via LPR on IP.

Enter the IP address of the remote (LPR on IP) printer (e.g. 202.60.253.116). Press Enter to move from address field to address field.

Queue Based (IPX)
Select this option to manually configure the Printer Agent to communicate with the printer via a NetWare NDS print queue on IPX.

Container for Objects
This is the container where the queue based objects, Print Server, Printer and Queue, will be located (e.g. Kyo_NDPS.atlanta.acme).

User Name and Context
Enter a fully distinguished NDS typeless name, e.g. bob.sales.atlanta.acme. The user must have sufficient access rights to create the necessary NDS printer objects. Note: If a valid user name and password are maintained in KYCON (Manage NDS Login), then user name and password may be left blank on this screen.

Password
Enter the user's password.

Print Server Name
For a new configuration, enter any desired Printer Server name. To maintain a printer's existing IPX configuration, be sure to enter the printer's existing Print Server name. When using the Select from List option, the existing Print Server name will be read from the selected printer and inserted here.

Printer Name
For a new configuration, enter any desired Printer name. To maintain a printer's existing IPX configuration, be sure to enter the Printer object associated with the Print Server. When using the Select from List option, a default name will be inserted here. You must change the default name to the existing Printer object name or the existing IPX configuration will become invalid.

IPX Network Number
Enter the eight digit hexadecimal IPX network number of the printer, e.g. 00001A2B

IPX Node Number
Enter the twelve digit hexadecimal IPX node number of the printer. This number can be obtained from the printer's network status page.

SNMP Write Community
Enter the case sensitive SNMP Write Community Name. For Intercon network cards the default is "public", however, if a password is set for the Intercon card, enter the password as the Write Community name. For EcoLAN network cards the default is "private".

NDPS Printing

Auto Driver Download

Auto Driver Download setup is a two step process. First, the necessary driver files must be installed into the NDPS driver database, see NDPS Driver Installation earlier in this guide. The second step, which is covered in this section, is to assign the driver to the Printer Agent. Once this process is complete, the driver will be automatically downloaded when a client selects the Printer Agent.

Printer drivers for Windows 3.1, Windows 95/98, Windows NT 4.0, and Windows 2000 may be assigned during Printer Agent creation in NWAdmin. Just select the appropriate driver for each OS when the Select Printer Drivers window is displayed.

To add or change the printer driver assignment for an existing Printer Agent:
1. For a Controlled Access Printer Agent, double click on the Printer Agent object to display the Printer Control window.
    For a Public Access Printer Agent, select **NDPS Public Access Printers** from the Tools menu and double click on the Printer Agent to display the Printer Control window.
2. Click on the **Printer Details** button, select **Set Defaults**, and select the **Drivers** tab.

Connecting to the Printer Agent in Windows

There are three options for setting up a user's system to print to the Printer Agent: 1) the Windows Add Printer Wizard, 2) the Novell Printer Manager, and 3) an automated "push" install when the user logs in.

Add Printer Wizard

Following is the installation procedure for Windows 98, but this would be similar to any Windows version with the Add Printer Wizard.
1. Under **Start**, **Settings**, **Printers**, select **Add Printer**.
2. Select **Network Printer.**
3. Select **Browse** to locate the Printer Agent. For a Controlled Access Printer Agent browse to the container where the Printer Agent is located. Public Access Printer Agents are located under **Entire Network** in the **NDPS Public Access Printers** folder.
4. Complete the installation. If a driver has been assigned to the Printer Agent, it will be automatically downloaded. If a driver has not been assigned, the user will be prompted to select the printer driver.

Novell Printer Manager

The Novell Printer Manager (NWPMW32.EXE in the Public\Win32 directory) provides some minor additional capabilities for NDPS printers such as an icon showing the current printer status.
1. From the Printer menu select **New**.
2. Click on **Add** to display a list of available Public Access Printer Agents.
3. Select the desired Public Access Printer Agent or click **Browse** to locate a Controlled Access Printer Agent and then click on **Install**.
4. Accept the default or type a new name in the **Installed as** field (it can't be changed later!).
5. Click on **Ok**. If a driver has been assigned to the Printer Agent, it will be automatically downloaded. If a driver has not been assigned, the user will be prompted to select the printer driver.

Driver "Push" to the Clients

Novell provides a method in NWAdmin for automatically installing or updating the printer driver on client systems.

1. For a Controlled Access Printer Agent, double click on the Printer Agent object to display the Printer Control window.
   For a Public Access Printer Agent, select **NDPS Public Access Printers** from the Tools menu and double click on the Printer Agent to display the Printer Control window.
2. Select the NDPS Remote Printer Management page. This window gives options to install or remove the Printer Agent to or from workstations in the selected container. Click the Install to… check box and click the Update Driver button to download the driver assigned to the Printer Agent to all workstations in the selected container the next time they login.

NWAdmin Snap-in for Printer Management

The Kyocera Mita NDPS Gateway includes an NWAdmin snap-in for enhanced management of Kyocera Mita printers in NWAdmin. The snap-in is integrated with the Novell NDPS functionality available under the Printer Agent Details. The Details screens provided by the snap-in and explained in this section are the Printer Control screen, the Troubleshooting screen, and the Paper Input and Paper Output screens. All other Details screens are provided by Novell. See the Novell NDPS documentation for information on the Novell screens.

The snap-in is started automatically when the Printer Control window is opened for a Printer Agent that was configured by the Kyocera Mita Gateway.

For a Controlled Access Printer Agent, double click on the Printer Agent object to display the Printer Control window.
For a Public Access Printer Agent, select **NDPS Public Access Printers** from the Tools menu and double click on the Printer Agent to display the Printer Control window.

Printer Control

The Printer Control screen displays the Printer Agent name, the printer model, and the printer's status and front panel display. Below the printer image, the printer front panel display is shown.

If there is no printer error, the printer image shows the current configuration of the printer with its attached paper handling options.

If there is a printer error, the printer image shows a representation of the current error condition and the Troubleshooting button becomes selectable. The Troubleshooting button contains a brief description of the error condition and steps necessary to remedy the condition.

Updates to the Printer Status and Front Panel Display

Printer status and front panel display are polled by the Kyocera Mita gateway every 30 seconds and stored in the NDPS printer database on the NetWare server. The Kyocera Mita NWAdmin snap-in polls the NDPS database every 15 seconds. Thus, 22.5 seconds is the average time and 45 seconds is the maximum possible time before the snap-in screen will reflect a change in the printer status or front panel display.

Since changes to the printer's physical configuration occur very infrequently, the printer configuration image is updated only every 30 minutes. If changes are made to the printer's configuration, such as adding or removing paper feeders, they may take up to 30 minutes to be reflected in the snap-in.

The Kyocera Mita gateway polling interval may be changed on an individual printer basis from the server with the KYCON program.

Paper Input
The printer's paper input information is polled by the Kyocera Mita gateway on every 4th status poll (every 2 minutes with the default 30 second status polling) and stored in the NDPS database. The values on the Paper Input dialog are obtained from the NDPS database when the dialog is opened. The Paper Input dialog is not refreshed while open, so if left open for a long period, it may not reflect the current Paper Input status.

Paper Input Current Level
Some printer models are only able to determine if the paper input is empty or has at least one sheet, therefore, Current Level may be displayed as "At Least One Unit Remains".

Paper Output
Information on the available output options.

Troubleshooting
Brief information on the current error condition and a suggested solution.

Configuring the Kyocera Mita NDPS Gateway

Gateway functionality such as polling intervals, discovery timing and filters, and login are configured with a module called KYCON. At the server console type: LOAD KYCON

The following sections describe the functions available in KYCON:

IP Printer Discovery
IP printer discovery is accomplished using both IP Broadcasts and Multi-casts. Multi-casts are directed broadcasts to specific networks. Multi-cast forwarding must be enabled on the network router or only printers on the local network segment will be discovered. To enable multi-cast forwarding on a NetWare 5 server acting as a router:
Load INETCFG, select **Protocols**, **TCP/IP**, **Expert Configuration Options**, and enable **Directed Broadcast Forwarding**.

The following KYCON options control IP printer discovery:

IP Discovery Enabled
If set to NO, IP printer discovery is disabled. Thus, IP printers will not be shown on the "Select from List" screen and KYPNP (Plug and Print) will not find IP printers.

IP/IPX Discovery Interval
Sets the time in seconds between printer discovery cycles. This setting controls both IP and IPX discovery. This value determines the maximum time (plus the length of the discovery process) before a new printer on the network will be discovered and displayed on the "Select from List" screen. If KYPNP (Plug and Print) is loaded, this determines the maximum time before a Printer Agent will be created for a new printer on the network. The default is 180 seconds.

IP/IPX Discovery Distance
Maximum network hops to search for printers. This setting controls both IP and IPX discovery. A value of 0 will cause only the local network segment to be searched.

Network filters
Filters may be added to specify which network numbers and subnet masks are to be searched for Kyocera Mita printers. If the list is empty, all networks within the Discovery Distance are searched.

A "?" may be used as a wild card to specify multiple networks, e.g. with a subnet mask of 255.255.255.192, an entry of 207.207.207.1?? would include networks 207.207.207.128 and 207.207.207.192.

IPX Printer Discovery
The default setting for a NetWare 5 server acting as a router is to forward IPX broadcasts, therefore printers on remote IPX networks should be discovered. However, if the NetWare server running the Kyocera Mita NDPS Gateway is not the server acting as the router, then the printer and the Kyocera Mita NDPS Gateway server must be using the same frame type. Otherwise the printer will not be discovered. For example, if the server is running only 802.2 and the printer is using 802.3, the printer will not be discovered. If the server is running both 802.2 and 802.3, it will discover printers on both frame types.

The following KYCON options control IPX printer discovery:

IPX Discovery Enabled
If set to NO, IPX printer discovery is disabled. Thus, IPX printers will not be shown on the "Select from List" screen and KYPNP (Plug and Print) will not find IPX printers.

IP/IPX Discovery Interval
Sets the time in seconds between printer discovery cycles. This setting controls both IP and IPX discovery and may only be set on the IP Printer Discovery screen.

IP/IPX Discovery Distance
Maximum network hops to search for printers. This setting controls both IP and IPX discovery and may only be set on the IP Printer Discovery screen.

Network Filters
Filters may be added to specify which IPX networks are to be searched for Kyocera Mita printers. If the list is empty, all networks within the Discovery Distance are searched.

A "?" may be used as a wild card to specify multiple networks, e.g. to search IPX networks 00008022 and 00008023, enter (after the 0x) 0000802?

Printer Agent and Suppressed Printer List
The Printer List contains a list of Printer Agents configured by the Kyocera Mita NDPS Gateway. Select a Printer Agent to view or change its polling configuration.

Some entries may appear as "Suppressed". These are Printer Agents which have been deleted. They are maintained in a suppressed state so that once deleted, KYPNP will not create another Printer Agent for them. If you want KYPNP to create a Printer Agent for the printer, you must delete it from the "Suppressed" state. Select the "Suppressed" printer and press Delete.

Configure Printer Polling

Select a Printer Agent on the Printer List to configure polling parameters for that printer.

Polling Interval (sec)

Set the time in seconds to wait between printer status updates. Paper size and paper level are updated on every fourth cycle. The full printer configuration, such as installed memory or paper handling options, is updated every sixtieth cycle. Thus with the default of 30 seconds, printer status is updated every 30 seconds, the paper size and paper level of all the printer's input trays are updated every 2 minutes, and the full configuration is updated every 30 minutes.

Polling Retries

Set the number of retries after timing out before giving up.

Polling Timeout

Set the time in seconds to wait for the response from the printer. This may need to be increased if a connected printer's status frequently becomes "Not Connected". This may occur on a slow network or if the printer is several hops away.

Manage NDS Login

Manages the cached NDS name and password used by the Plug and Print module for IPX configuration.

Enter an NDS typeless distinguished user name and password (e.g. bob.sales.atlanta.acme). This name and password will be saved (in encrypted format) and used by KYPNP (Plug and Print) for IPX configuration.

The user you select must have sufficient access privileges to find, create and modify NDS Print Server, Printer and Print Queue objects.

The NDS login information is not used for IP configuration.

Migrating Existing Printers to NDPS

If IP is in use and each printer has an assigned IP address, then the easiest method for migrating existing IPX queue base printers to NDPS is to run Plug and Print on IP (LOAD KYCON LPR=1). This will create IP Public Access Printer Agents for all printers while leaving the existing IPX queue based configuration unaffected. Thus both NDPS over IP and queue based over IPX will be active. Once all clients have been migrated to use the NDPS Printer Agent (see Driver "Push" to the Clients), the IPX queue based configuration may be deleted.

Notification

There are numerous ways to setup event notification. The best method depends upon the desired notification configuration. The following procedures may be used to setup Printer Agent event notification. These procedures assume sufficient access privileges in NWAdmin.

Set Default Server
To receive pop-up notifications, users must have their Default Server property set.
1. In NWAdmin, double click on the user and select the **Environment** page.
2. Enter a file server as the **Default Server**.

Set Multiple Users to Receive Notification of Events from a Single Printer Agent
This procedure applies only to Controlled Access Printer Agents.
1. In NWAdmin, double click on the Printer Agent and select the **Access Control** page.
2. Select **Managers**, **Operators**, or **Users** as the Role. Objects currently defined for the selected role are displayed in the Current … window. Although any object, such as a user, group, or container, may be assigned as a Manager, Operator, or User, the word "user" is used instead of "object" to make the rest of this procedure easier to follow.
3. If the desired user is not displayed in the Current … window, click on **Add**.
4. Highlight the desired user in the Current … window and click on **Notification**.
5. Select the desired notification method, **Log File** or **Pop-Up**.
6. Select the desired Printer and or Job events or groups of events for notification.
7. Repeat the procedure for each user which is to receive notification.

Set a Single User to Receive Notification of Events from Multiple Printer Agents
This procedure applies only to Controlled Access Printer Agents.
1. In NWAdmin, double click on the user and select the **NDPS Printer Access Control** page.
2. Select the desired Printer Agent in the list of NDPS Printers and click on **Notification**.
3. Select the desired notification method, **Log File** or **Pop-Up**.
4. Select the desired Printer and or Job events or groups of events for notification.
5. Repeat for each desired Printer Agent.

Set All Users to Receive Notification of Job Complete
This procedure applies to either Controlled Access or Public Access Printer Agents.
1. In NWAdmin, open the Kyocera Mita snap-in Printer Control page. For Controlled Access double click on the Printer Agent. For Public Access select **NDPS Public Access Printers** from the **Tools** menu and double click on the Printer Agent.
2. Click on **Printer Details** and select **Set Defaults**.
3. On the Notification tab select **Directed Pop-Up Notification** (notifications are sent only to the station that originated the job) or **Pop-Up Notification** (notifications are sent to all stations where the job-originating user is logged in).
4. Expand **Job**, then expand **Reports** and select **Job Printing Completed**.

Troubleshooting

Why doesn't Plug and Print (KYPNP) create a Printer Agent for the printer?

On IP or IPX:

- If a Printer Agent has been previously created for the printer and deleted, it is maintained in a "Suppressed" state and KYPNP will not create a Printer Agent. Use the KYCON Printer List to delete it from the "Suppressed" state.
- The Printer Agent cannot be discovered. If the printer is not on the local segment, routing may not be setup properly. See IP Printer Discovery or IPX Printer Discovery. If the printer is on the local segment, check other methods to communicate with the printer, such as *ping* or an IPX management utility. If all methods of communication fail, check the printer's physical network connection and configuration such as IP address, subnet mask, and default gateway.

On IPX only:

- Verify that the login name and password are correctly configured in KYCON, see Manage NDS Login.
- If the printer is already configured for queue based or remote mode printing, KYPNP will not create a Printer Agent.
- KYPNP creates Print Server and Printer objects in the Kyo_NDPS container. The Print Server name used is the printer's Advertised Print Server name. The Printer name is the Advertised Print Server name_PTR. If either of these objects already exist, the Printer Agent will not be configured correctly.

Why do I receive a message that authentication failed?

This occurs only when performing IPX configuration.

- When performing configuration with NWAdmin, the currently logged in user must have sufficient privileges to create the print objects.
- When performing configuration at the server console, login information for a user with sufficient privileges must be supplied.

Why is the Printer Agent in the "Not Bound" state?

The NDPS Printer Agent cannot be initialized. In the NDPS Manager at the server console select the Printer Agent, select **Status and Control**, and **Shutdown Printer**. Select **Status and Control** again and select **Start Up Printer**. Check the server console for possible error messages.

Why is the Printer Agent in the "Needs Attention" state?

- "Needs Attention" generally indicates a normal error condition on the printer such as out of paper or cover open, etc.
- When an IPX Printer Agent is first created in will show "Needs Attention" or "Not Connected" for a short period while it is reset by the configuration program.
- If the printer does not have any error condition and yet the Printer Agent stays in the "Needs Attention" state, shutdown and restart the Printer Agent using the procedure in the answer to the previous question.

In NWAdmin why is the Novell Printer Control screen opened rather than the Printer Control from the Kyocera Mita snap-in?

- Check to be sure that the necessary files are in SYS:\PUBLIC\WIN32.
- If the printer model or network card is not supported by the Kyocera Mita snap-in then the Novell Printer Control screen will be displayed.
- If the gateway has not ever established successful communication with the printer, i.e. it is in the "Not Bound" state, then the Novell Printer Control screen will be displayed.