LEXMARK™

Printer Drivers for UNIX & Linux Systems

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Learning about the printer drivers

Using the printer drivers with UNIX and Linux

The printer drivers for UNIX and Linux systems provide many features that help ease the task of the system administrator and that help users be more productive.

- **Print queue and device wizards**—Administrators can use wizards to help set up virtual devices and print queues.
- **Network printer search**—The search function makes it easier to find printers in an IP Subnet or Range.
- **Print subsystem integration**—Printer drivers integrate with the native Print subsystem to work with existing print queues and software.
- **Frequently used options**—System administrators can create queues with the most frequently used options as the default, such as duplex or no banner page, so users do not need to specify those options.
- **Printer options support**—Users have the ability to access several printer-specific options such as multiple-page printing, print and hold, duplex, or paper size.
- **Job submission graphical interface**—Users can use the command `lexlp` in place of `lp` to access a graphic interface to override per-queue options at print time.
- **Job command line options**—Users can override per-queue defaults by specifying options on the "lp" or "lpr" command line.
- **Individual user settings**—Users can save their own print queue settings to their home account.
- **Bypass the native Print subsystem**—Users can bypass the native Print subsystem and send data directly to the printer by using the transport utilities.
- **Printer groups (My Printers)**—Users have the ability to group print queues.
- **Printer classes**—System administrators have the ability to manage the standard printer classes from a graphical interface.
- **Enhanced security**—Users with a designated UNIX group ID can set up queues.

Installing the printer drivers

Before installing the printer drivers

1. Make sure you are logged on with root user authority.
2. Make sure you have enough disk space available for a complete installation.

   For more information, see "System requirements" on page 9 and "Finding space to install the printer drivers package" on page 13.
3. Set up an administrative user group.

   During installation, you are asked if you want to change the administrative user group for printer drivers. The default administrative group on all systems except AIX is "bin." The default administrative group on AIX is "printq."

   If you have an administrative group on your host, you might want to use that group as the printer driver administrative group. Non-administrative users cannot add or remove print queues.

   For more information, see "Changing an administrative group name" on page 16.

   Note: If you are using print clients and print servers on Solaris, install the printer drivers on the print server to access the printer driver management features.

Supported operating systems

Make sure you are running one of the following versions of UNIX with the latest available patches:

- HP-UX
- IBM AIX
- Sun Solaris SPARC
- Sun Solaris x86
- Linux Systems
  - Red Hat Linux
  - Red Flag Linux
  - SUSE Linux
  - Debian GNU/Linux
  - Linspire Linux
  - Ubuntu Linux
  - Linpus Linux

For specific supported operating system versions, see the Web site for your operating system, or see the file /usr/lexprint/docs/supported-platforms.txt after installation.

System requirements

The printer driver has minimum installation space requirements. See the following table to make sure your system has enough space to install the printer driver.

System	Installation space
IBM AIX	62MB in /usr/lpp
HP-UX	130MB in /opt
Sun Solaris	75MB in /opt 75MB in /tmp or /var/tmp during installation
Linux	70MB in /usr/local

Installing on HP-UX

1. Read "Before installing the printer drivers" on page 8.
2. Make sure you have enough disk space in /opt to install the printer driver.

   For more information about finding more space, see "Finding space to install the printer drivers package" on page 13.
3. Download the Lexmark printer driver package (print-drivers-hpux11.11.pkg.gz) from the Lexmark Web site at **http://www.lexmark.com/drivers**.
4. Save the downloaded printer software package in the /tmp directory, and then uncompress the package file:

   ```
   # /usr/contrib/bin/gunzip /tmp/print-drivers-hpux11.11.pkg.gz
   ```
5. Start the Software Depot Install dialog by entering:

   ```
   # /usr/sbin/swinstall
   ```
6. Make sure the Source Depot type is Network Directory/CDROM and the hostname of the computer you are installing on appears in the Source Host Name text box. If either of these fields is incorrect, enter the correct value, or select it from the list.
7. In the Source Depot Path field, type the following to specify the full path to the HP-UX package file:

   ```
   /tmp/print-drivers-hpux11.11.pkg
   ```
8. Select the bundles you want to install:
   a. Click the **LexPrtDrvs** bundle.
   b. Click **Actions**, and then click **Install**.
9. Click **OK** to start the installation.

   Note: If the HOME variable was not set for root when you started SAM, an error message appears. Ignore the message, and click **OK**.
10. During installation, select **Logfile** to view the installation log. Make sure there are no errors or warnings during installation.

    Note: If there is not enough disk space in /opt/lexmark to install, see "Finding space to install the printer drivers package" on page 13.

11 When the installation is complete, click **Done** and exit SAM.

12 Run the following setup script to complete the installation:

```
# /opt/lexmark/setup.lexprint
```

Note: Your specific printer driver may not be included in the standard package. Check the *Software and Documentation* CD or the Lexmark Web site to determine if there are any software plug-ins available. For more information, see "Plugin Manager utility (software updates)" on page 31.

Installing on IBM AIX

1 Read "Before installing the printer drivers" on page 8.

2 Make sure you have enough disk space in /usr/lpp to install the printer driver.

For more information about finding more space, see "Finding space to install the printer drivers package" on page 13.

3 Download the Lexmark printer driver package (print-drivers-aix5-sysv.pkg.gz) from the Lexmark Web site at **http://www.lexmark.com/drivers**.

4 Save the downloaded package in the /tmp directory, and then uncompress the package file:

```
# /opt/freeware/bin/gunzip /tmp/print-drivers-aix5-sysv.pkg.gz
```

5 Type the following on the command line, and then press **Enter**:

```
# smit install_latest
```

6 When prompted to type the input device directory for software, type the following:

```
/tmp/print-drivers-aix5-sysv.pkg
```

7 Select the packages you want to install. All packages are installed by default.

a On the Software to install option, select **List**.

b Select the packages you want to install.

c Click **OK**.

8 Specify any other install options.

9 Click **OK** to begin installing the printer driver.

You receive a message when the installation is complete.

10 Run the following setup script to complete the installation:

```
# /usr/lpp/lexprint/setup.lexprint
```

Note: Your specific printer driver may not be included in the standard package. Check the *Software and Documentation* CD or the Lexmark Web site to determine if there are any software plug-ins available. For more information, see "Plugin Manager utility (software updates)" on page 31.

Installing on Red Hat, Red Flag, Linpus, or SUSE Linux

1. Read "Before installing the printer drivers" on page 8.
2. Make sure you have enough disk space in /usr/local to install the printer driver.

   For more information about finding more space, see "Finding space to install the printer drivers package" on page 13.
3. Download the printer drivers package (print-drivers-linux-glibc2-x86.rpm) from the Lexmark Web site at **http://www.lexmark.com/drivers**.
4. Install the package file:

   ```
   # rpm -ivh /tmp/print-drivers-linux-glibc2-x86.rpm
   ```
5. Run the following setup script to complete the installation:

   ```
   # /usr/local/lexmark/setup.lexprint
   ```

Note: Your specific printer driver may not be included in the standard package. Check the *Software and Documentation* CD or the Lexmark Web site to determine if there are any software plug-ins available. For more information, see "Plugin Manager utility (software updates)" on page 31.

Installing on Linspire, Debian, or Ubuntu Linux

1. Read "Before installing the printer drivers" on page 8.
2. Make sure you have enough hard disk drive space in /usr/local to install the printer driver.

   For more information about finding more space, see "Finding space to install the printer drivers package" on page 13.
3. Download the printer drivers package (print-drivers-linux-glibc2-x86.deb) from the Lexmark Web site at **http://www.lexmark.com/drivers**.
4. Install the package file.

   ```
   # dpkg -i /tmp/print-drivers-linux-glibc2-x86.deb
   ```
5. Run the following setup script to complete the installation:

   ```
   # /usr/local/lexmark/setup.lexprint
   ```

Note: Your specific printer driver may not be included in the standard package. Check the *Software and Documentation* CD or the Lexmark Web site to determine if there are any software plug-ins available. For more information, see "Plugin Manager utility (software updates)" on page 31.

Installing on Sun Solaris SPARC

1. Read "Before installing the printer drivers" on page 8.
2. Set the NONABI_SCRIPTS environment variable to **TRUE**.
3. Make sure you set the OPENWINHOME environment variable by typing the following on the command line:

   ```
   # env | grep OPENWINHOME
   ```

   If you do not get a response, you must set the OPENWINHOME environment variable to the **openwin** directory.

4 Install the package file.

a Download the Lexmark printer drivers package (print-drivers-solaris8-10-sparc.pkg.gz) from the Lexmark Web site at **http://www.lexmark.com/drivers**.

b Save the downloaded package in the /tmp directory, and then uncompress the package file.

```
# gunzip /tmp/print-drivers-solaris8-10-sparc.pkg.gz
```

c Start the package installation program.

```
# pkgadd -d /tmp/print-drivers-solaris8-10-sparc.pkg
```

5 A list of available packages appears.

- To install all the packages, type **all**, and then press **Enter**.
- To install individual packages, type each package number separated by a comma, and then press **Enter**.

Note: You must install all the packages in the same location.

6 Follow the prompts and answer any questions that appear on the screen.

- To accept the defaults, press **Enter**.
- To answer yes/no questions, type **y**, **n**, or **?**, and then press **Enter**.
- When a message appears telling you the installation was successful, type **q** to quit.

Note: Your specific printer driver may not be included in the standard package. Check your *Software and Documentation* CD or the Lexmark Web site to determine if there are any software plugins available. For more information, see "Plugin Manager utility (software updates)" on page 31.

Installing on Sun Solaris x86

1 Read "Before installing the printer drivers" on page 8.

2 Set the NONABI_SCRIPTS environment variable to **TRUE**.

3 Make sure you set the OPENWINHOME environment variable by typing the following on the command line:

```
# env | grep OPENWINHOME
```

If you do not get a response, you must set the OPENWINHOME environment variable to the **openwin** directory.

4 Install the package file.

a Download the Lexmark printer driver package (print-drivers-solaris10-x86.pkg.gz) from the Lexmark Web site at **http://www.lexmark.com/drivers**.

b Save the downloaded package in the /tmp directory, and then uncompress the package file.

```
# gunzip /tmp/print-drivers-solaris10-x86.pkg.gz
```

c Start the package installation program.

```
# pkgadd -d /tmp/print-drivers-solaris10-x86.pkg
```

5 A list of available packages appears.

- To install all the packages, type **all**, and then press **Enter**.
- To install individual packages, type each package number separated by a comma, and then press **Enter**.

Note: You must install all the packages in the same location.

6 Follow the prompts and answer any questions that appear on the screen.

- To accept the defaults, press **Enter**.
- To answer yes/no questions, type **y**, **n**, or **?**, and then press **Enter**.
- When a message appears telling you the installation was successful, type **q** to quit.

Note: Your specific printer driver may not be included in the standard package. Check your *Software and Documentation* CD or the Lexmark Web site to determine if there are any software plugins available. For more information, see "Plugin Manager utility (software updates)" on page 31.

Finding space to install the printer drivers package

Some operating systems require you to install printer drivers in a particular directory. If the file system containing the directory is full, you can create a symbolic link that points to the real directory in another file system which has more file space. The operating system treats the symbolic link as a real directory, but the files are actually installed on another drive.

1 Create a directory where you want the packages to actually be installed.

For example, to install in the /disk2 file system, type:

```
# mkdir /disk2/lexmark
```

2 Create a symbolic link that points to the directory you just created from the directory where the operating system requires the files.

For example, if the operating system requires the files to be in /opt/lexmark, type:

```
# ln -s /disk2/lexmark /opt/lexmark
```

3 Continue with the installation of printer drivers in the folder /disk2/lexmark.

Removing the printer drivers package

A system administrator can remove the printer drivers package using the utilities in the table below.

Depending on your operating system, mark the printer drivers package for removal after you start the program. You can also type the names of the printer drivers package you want to remove from the command line. For more information, see the documentation that came with your operating system.

Operating system	Package removal tool
HP-UX	**sam**
IBM AIX	**smit**
RedHat Linux SuSe Linux	**rpm -e**
Linspire Linux Debian GNU/Linux	**dpkg -r**
Sun Solaris	**pkgrm**

1. If you are using Sun Solaris, HP-UX, or an IBM AIX system, remove the menu links by running the following utilities and selecting **Remove** before uninstalling the package.

   ```
   # /usr/lexprint/bin/cde_menu_utility.sh
   ```

2. If you are using Sun Solaris, run the uninstall script to remove symbolic links created during installation.

   Note: You must unlink the files before uninstalling the package.

   ```
   # /opt/lexmark/LEXPrtDrv.unlink
   ```

Removing remaining directories

Package removal utilities usually do not remove directories shared by more than one package. After you remove all of the printer drivers packages, you may need to remove some directories manually.

To see if any directories remain after removing all the packages, check the directory where you installed the printer drivers. By default, the printer drivers are installed in either of the following locations:

- Solaris

  /opt/lexmark/unix_prt_drivers

  /var/spool/lexmark/unix_prt_drivers
- HP-UX

  /opt/lexmark/unix_prt_drivers

  /usr/spool/lp/lexmark/unix_prt_drivers
- Linux

  /usr/local/lexmark/unix_prt_drivers

  /var/spool/lexmark/unix_prt_drivers
- AIX

  /usr/lpp/lexprint

  /var/spool/lexmark/unix_prt_drivers

Note: Other software may be located in the /opt/lexmark, /usr/local/lexmark, /usr/spool/lp/lexmark, or /var/spool/lexmark directories. If there is additional software residing in these locations, do not delete the directory.

Performing tasks

Opening the printer driver

The printer driver is available from a Windows menu item, or from the command line by typing:

```
# lexprint
```

The program has two modes: User and Administrative. If an administrator starts the program, it opens in administrative mode by default. However, if an administrator wants to start the program in user mode, they can type **`lexprint -n`**. This lets administrators start a session with their own personal settings.

Note: User mode is not supported when running the application as a "root" user.

Print Drivers Setup

There are six basic options you can set from the Print Drivers Setup dialog.

Note: The Print Drivers Setup is only available to the root user.

If you do not have the interface available, you can set many of these options by using the command line.

- /usr/local/lexmark/setup.lexprint
- /opt/lexmark/setup.lexprint
- /usr/lpp/lexprint/setup.lexprint

Note: For more details regarding this command, enter **`setup.lexprint -h`** from the command line.

Administrative Group

Use this option to set the administrative group name. For more information about administrative groups, see "Changing an administrative group name" on page 16.

Web Browser

In order to view the help files for Print Drivers you must specify the web browser you are using.

1. Click **File ➞ Setup**.
2. Click **Web Browser**.
3. Select the appropriate web browser from the list. If your web browser is not listed, you can browse to the location of the web browser.
4. Click **Next**.

Paper Size

You can set the default paper size for all print jobs.

Note: Changing the default paper size does not affect the existing print queues.

1. Click **File ➞ Setup**.
2. Click **Paper Size**.

3 Select the default paper size.

Note: The only options available are A4 and Letter. If you do not make a selection, Letter is used as the default.

4 Click **Next**.

Desktop Integration

The Desktop Integration option allows you to add Print Drivers to, or remove them from, the menu bar.

1 Click **File → Setup**.

2 Click **Desktop Integration**.

3 Select the menu integration option you want to use.

4 Click **Next**.

Asian Drivers

You can enable Asian driver support which allows you to print using the Asian Font DIMM.

Note: For Linux, this option allows the flexibility to print with or without the Asian Font DIMM.

In order to use the Asian Drivers you must enable the Asian Drivers in the Print Drivers Setup, and then create a print queue for the Asian model.

To enable Asian Drivers:

1 Click **File → Setup**.

2 Click **Asian Drivers**.

3 Select **Enable Asian Drivers**.

4 Click **Next**.

When you create print queues using Asian Drivers, you must specify a printer with Asian in the model name. For more information about creating print queues, see “Creating a print queue” on page 19.

CUPS

If you are using Linux with CUPS you may encounter printing problems due to mime types controlling how to filter print jobs. In order for jobs to print correctly, you must remove this mime type, allowing the print jobs to filter properly.

1 Click **File → Setup**.

2 Click **CUPS**.

3 Select **Enable PCL Emulation Job Filtering**.

4 Click **Next**.

Changing an administrative group name

The printer driver uses UNIX groups to separate those who have permission to add and remove queues from those who do not.

During application setup, you are prompted to provide an administrative group name. The default administrative group on all systems except AIX is “bin.” The default administrative group name on AIX is “printq.”

To change the administrative group name, run one of the following scripts:

Linux

```
# /usr/local/lexmark/setup.lexprint
```

Solaris and HP-UX

```
# /opt/lexmark/setup.lexprint
```

IBM AIX

```
# /usr/lpp/lexprint/setup.lexprint
```

Adding or removing a user from the administrative group

Users who are part of the administrative group can open the printer driver with permissions and perform administrative tasks. Users who are not part of this group can only change their personal settings and maintain their printer groups. User settings are stored in the user's home directory.

Add users to the administrative group by adding the user's name to the Administrative group located in the /etc/group file. For information about changing the Administrative UNIX group name, see “Changing an administrative group name” on page 16.

Remove a user from the administrative group by removing the username from the UNIX group.

Creating virtual devices

Before creating virtual devices

Before you can create a virtual device, you must gather the following information:

- The connection method for the virtual device
- For network printers—the host name or IP address and the SNMP community name
- For local printers—the connection type (parallel, serial, or USB) and the physical device file name

Creating virtual devices using the Device Manager

1. Open the printer driver.
2. Click **Device Manager**.
3. Click **Add**.
4. Click **Network Attached Printer** or **Locally Attached Printer**.

   If the printer is attached locally, continue with step 5 on page 18. If the printer is attached to a network, go to step 6 on page 18.

5 If the printer is attached locally:

   a Select **Parallel**, **Serial**, or **USB**.

   If you are using a parallel connection, specify if the virtual device is a BPP Device.

   If you are using a serial connection, specify the exact Serial Port Options.

   Note: Not all options may be available for your system.

   b Enter the device name and description.

   c Select a physical device from the list of known devices, or select **Other**, and then enter the path to the physical device file.

   Note: If you do not know the path, click **Browse** to look for the path in the file system.

   d Click **Finish**.

6 If the printer is a attached to a network:

   a Enter the device name and description.

   b Enter the IP Address/Host Name, or click **Search** to locate the IP address.

   If you entered an IP Address/Host Name, go to step h on page 18.

   If you clicked "Search to locate an IP address," continue with step c on page 18.

   c From the Search Network Printer dialog box, search by Subnet or Range.

   d Enter the appropriate IP Address or Subnet.

   e Click **Search**.

   Note: The Search function searches for printers on an IPv4 network.

   f Select the device from the list.

   g Click **OK**.

   h Make any necessary changes to the available options.

   i Click **Next**.

   j If you entered an external print server IP Address or Host Name, select the appropriate port for the printer.

   k Verify the information that appears.

   l Click **Finish**.

Creating virtual devices from the command line

1 Select a recognizable, but unique, virtual device name.

2 To create a virtual device, type the following from the command line:

For physical devices:

```
# /usr/lexprint/bin/mkdevice -d name -f device -t type
```

For network devices:

```
# /usr/lexprint/bin/mkdevice -d name -i host [-c name] [-p port] [-t type]
```

Note: For more details regarding this command, type **`mkdevice -h`** from the command line.

Creating a print queue

Creating print queues using the Add Print Queue Wizard

1. From the printer driver, click **Add Print Queue Wizard**.
2. From the list of Available Devices select a device, or click **Add Device** to create a new device.

   For more information about adding devices, see "Creating virtual devices" on page 17.
3. Click **Next**.
4. Enter the printer name and description.
5. Select the printer type.
6. Click **Next**.
7. Select the printer languages the queue will accept.
8. Click **Properties** to change the settings for the print queue.

   For more information, see "Changing the print queue properties" on page 21.
9. Click **Next**.
10. Finish creating the print queue.
    - If you are using Sun Solaris, HP-UX, IBM AIX, or Linux with CUPS, select **Enable Printer Classes** to put a queue in a class.

      For more information about printer classes, see "Working with printer classes" on page 22.
    - If you are using Linux with the LPRng print subsystem, select **Enable Printer Aliases** to create aliases for this queue.

      For more information about printer aliases, see "Working with printer aliases" on page 22.
11. Click **Finish**.

Creating print queues from the command line

1. Before you can create the queue, you must gather the following information: a valid device name, the printer type, the printer language, and the default print queue settings options.
   a. The device name associated with the print queue must exist before you create the queue.
      - You can list the defined virtual devices by running the following command:

        ```
        # /usr/lexprint/bin/lsdevice -l
        ```
      - If the device does not exist, you can create one by running the **mkdevice** command.

        For more information, see "Creating virtual devices" on page 17.

   b. The supported printer types and languages can be found by running the following command:

      ```
      # /usr/lexprint/bin/supported_printers
      ```

      Locate the line listed from the **supported_printers** command that contains the model number of your printer.

      Example: You want to create a queue for a Lexmark T632. You locate the line matching this printer from **supported_printers** and it looks like this: **Lexmark T632 10LT63x automatic**

      The printer type is 10LT63x, and the supported language is automatic.

Supported language notes

- All printer types support "raw" as the language type. This makes the print queue a pass-through queue. This means the print job is sent to the printer without any queue modification.
- The Automatic language type lets you set the language type to be **automatic**, **pcl**, or **ps**. If you select automatic, you can send both PCL emulation/ASCII and PostScript emulation print jobs to the print queue.
- The Automatic Plus language type lets you set the language type to be **automatic_plus**, **pcl**, **ps**, or **iq**. If you select automatic_plus, you can send PCL emulation/ASCII, PostScript emulation, and ImageQuick™ (HTML, PDF, TIFF) print jobs to the print queue.
- The Automatic PDF language type lets you set the language type to be **automatic_pdf**, **pcl**, **ps**, or **pdf**. If you select automatic_pdf, you can send PCL emulation/ASCII, PostScript emulation, and PDF print jobs to the print queue.
- If the language type is **pcl**, you can send only ASCII text or PCL emulation jobs through the print queue.
- If the language type is **ps**, you can send only PostScript emulation jobs through the print queue.
- If the language type is **ppds**, you can only send ASCII text or PPDS emulation jobs through the print queue.
- You should normally choose **automatic**, if it is available.

c Available printer settings options can be found by running the **lsqueue_opts** command. Using the Printer Type as determined in step b on page 19, run the following command:

```
# /usr/lexprint/bin/lsqueue_opts -f printer_type
```

Example: # /usr/lexprint/bin/lsqueue_opts -f 10LT63x

Locate the options and values you want to change and pass them the **mkqueue** command with the **-o** argument.

2 Type the following command:

```
# /usr/lexprint/bin/mkqueue -d device_name -q queue_name
-p printer_type -l printer_language -o printer_options
```

Note: Type **mkqueue -h** from the command line for more details regarding this command.

Example: Using information gathered in step 1 on page 19, create a new print queue ("myqueue"), for a virtual device ("mydevice"). The printer type is 10LT63x and the language selection is specified as "automatic" for this queue. Specify additional printer options so that paper from the second tray is used and jobs are duplexed against the long edge of the paper.

```
# /usr/lexprint/bin/mkqueue -d mydevice -q myqueue -p 10LT63x
-l automatic -o "paper_tray=tray2 duplex=long_edge"
```

Changing the print queue status

There are four print queue states:

- **Enabled**—The normal state of the operation. Jobs in the queue are actively processed.
- **Disabled**—Print job processing stops. New jobs can be submitted, but they are not processed.
- **Accepting**—Print jobs can be submitted to the queue.
- **Rejecting**—No print jobs can be submitted to the queue.

These states are not all mutually exclusive. For example, an enabled queue may reject jobs.

The printer driver shows these states by placing an icon on the print queue within the Icon View, and by changing the color of the text in Detail View.

- If you see a red "X" on a print queue, the print queue is rejecting jobs.
- If you see a yellow "!" on a print queue, the print queue is disabled.

To change the status of a print queue within the printer driver:

1. Right-click the print queue.
2. Select or clear the appropriate **Enabled** and **Accepting** check boxes.

To change the status of a print queue from the command line, type the following command:

```
# /usr/lexprint/bin/chqueue -q myqueue -m accept|reject|enable|disable
```

Notes:

- Accept, reject, enable, and disable are all options for the action you want to perform. Specify only one of these actions when typing the command.
- Type **`chqueue -h`** from the command line for more details regarding this command.

Changing the print queue properties

1. Open the printer driver.
2. Right-click the print queue icon.
3. Select the appropriate Properties menu item.
4. Change the settings.
5. Click **OK**.

How you change the properties determines which print jobs are affected.

- If you open the printer driver as a normal user, your changes are saved in your home directory and apply to all print jobs you send to the print queue. A special icon appears on the printer icon to indicate that the properties are your personal print queue properties.
- If you opened the printer driver as an administrator, your changes apply to every user who has not saved personal print queue properties for that print queue.
- If you change the settings through Print File or **`lexlp`**, your changes affect the properties for that specific print job. The changes do not affect any other jobs sent to that print queue.

Note: Application settings override any properties you set up for the print queue.

The settings shown in the Properties dialog include all possible properties options for that specific printer type. However, your printer may not have all of the available options installed. If you select an option the printer does not support, the printer ignores the unsupported settings.

For example, the Printer Type may support an optional duplex unit. However, if a duplex unit is not connected to the printer, your print job prints on one side of the paper.

Working with printer aliases

Introduction to printer aliases

Use Printer Aliases when you are creating a queue in Linux to provide alternative names for a print queue. For example, the real name of a print queue could be “Bldg_4_Room1,” but the alias describes it as “duplex." Users can then use “Bldg_4_Room1” or “duplex” as the print queue name when printing.

Note: Printer aliases are supported only on Linux platforms with the LPRng print subsystem enabled. If you want to modify the aliases of a queue, you need to recreate the print queue.

Creating a print queue with an alias

1. Access the Printer Aliases screen of the Add Print Queue Wizard.
2. Select **Enable Printer Aliases**.
3. Enter the name of the alias in the Alias Name field.

Displaying the alias of a print queue

Right-click the print queue, and select **Printer Aliases**.

Working with printer classes

Introduction to printer classes

Printer classes help you group several printers into one class. Once a printer class is set up, you can print to a class rather than a specific printer. Because printing resources are pooled within a class, the first available printer completes your job, providing faster turnaround.

Note: Printer classes are optional and should be used only if they are considered beneficial for users.

Printer classes are only available when you are creating a queue on Sun Solaris, HP-UX, IBM AIX, or Linux with CUPS enabled.

You can access printer classes in two ways:

- From the last screen of the Add Printer Queue Wizard
- By right-clicking a printer queue and then selecting **Printer Classes**

To add this printer to a class, select **Enable Printer Classes**. You have three options available:

- Create a New Class
- Select Existing Class
- Remove Existing Class

You cannot remove a queue from a class at the time you create the queue.

You can also change or modify a printer queue class from the command line. To add a queue to a new or existing class, type the following command:

```
# /usr/lexprint/bin/chqueue -q myqueue -c -a class1,class2
```

To remove a queue from a class, type the following command:

```
# /usr/lexprint/bin/chqueue -q myqueue -c -r class1
```

Note: After the last queue has been removed from a class, the class is removed automatically.

Creating a class

1. Access **Printer Classes**.
2. Select **Create a New Class**.
3. Enter the name of the new class.

Adding to a class

1. Access **Printer Classes**.
2. Select the check box next to the existing class to associate the queue with that class.

Removing a queue from a class

1. Access **Printer Classes**.
2. Clear the check box next to the class from which you want to remove the queue.

Note: A class exists as long as it contains queues.

Managing printer groups

Printer groups help you select a small group of print queues from the available print queues on a UNIX system. You can use the Group Manager tool to add or remove print queues in groups.

Creating a printer group

You can create a printer group using the Group Manager tool. You can access the New Group Manager dialog box by right-clicking **All Printers** and selecting **New Group**.

1. Enter the group name in the Group Name field.
2. From the Available Print Queues column, select the print queues you want to add to the group.
3. Click ❯ to add the print queues to the Select Print Queue column. Click ❯❯ to move all queues to the Select Print Queue column.
4. Click **OK**.

Note: To remove a print queue from the Select Print Queue column, select the print queues to be removed, and then click ❮.

Adding a print queue to My Printers or another printer group

You can add a print queue to My Printers or another printer group either by dragging a printer from the main window onto a printer group or by using the Group Manager tool.

1. Right-click a group name, and then select **Group Manager**.
2. From **Available Print Queues**, select the print queues you want to add to the group.

3 Click ❯ to add the print queues to the group.

Note: To remove a print queue from the Selected Print Queue column, select the print queues to be removed, and then click ❮.

Removing a printer group

To delete a specific group:

1 Right-click the group name.

2 Click **Delete**.

To delete multiple groups:

1 Right-click **All Printers**.

2 Select **Delete Group**.

3 Select the groups you want to delete.

4 Click **Remove**.

Note: You cannot remove the My Printers or All Printers groups.

Printing from the command line

There are multiple ways to print from the command line:

- You can print using the print queue defaults.

  If you are printing from Sun Solaris, HP-UX, IBM AIX, or Linux with CUPS, type the following at the command line:

  ```
  # lp -d queue_name file_name
  ```

  If you are printing from Linux with the LPRng print subsystem, type the following at the command line:

  ```
  # lpr -P -queue_name file_name
  ```

- You can print with overrides to the print queue properties you select from the properties screen.
  1 Type the following at the command line:

    ```
    # lexlp -d queue_name file_name
    ```

  2 Change the appropriate settings.

  3 Click **OK**.

- You can print with overrides to the properties you type at the command line.
  1 Access a list of the current properties by typing the following command:

    ```
    # /usr/lexprint/bin/lsqueue_opts -q queue_name
    ```

  2 Find the name of the property you want to change and the value to which it can be changed.

3 Type the command to change the properties.

4 If you are printing from Sun Solaris, HP-UX, IBM AIX, or Linux with CUPS, use the following command to change properties:

```
# lp -d queue_name -o property_name=property_value file_name
```

If you are printing from Linux with the LPRng print subsystem, use the following command to change properties:

```
# lpr -P queue_name -C "lexopts:property_name=property_value"
file_name
```

Example: You have a print queue ("lab_printer") that is currently set to print only single-sided pages, and you need to print a two-sided report. You can specify the change at the command line.

1 Determine if the print queue supports the feature you want to use (in this case, duplex printing), and type the appropriate command.

```
# /usr/lexprint/bin/lsqueue_opts -q lab_printer
```

The screen then reads:

duplex	none (default)
	short_edge
	long_edge
	printer setting

2 Find the property name and value that controls duplexing. For this example, use **duplex=long_edge**.

3 If you are printing from Sun Solaris, HP-UX, IBM AIX, or Linux with CUPS, type the following at the command line:

```
# lp -d lab_printer -o duplex=long_edge my_report.ps
```

If you are printing from Linux using the LPRng print subsystem, type the following at the command line:

```
# lpr -P lab_printer -C "lexopts:duplex=long_edge" my_report.ps
```

Printing a file

1 Right-click the print queue, and then select **Print File** from the menu.

2 From the browser dialog, select the file.

3 If you want to change the printing preferences for this job only, click **Preferences**.

Note: Unless your printer supports Direct Image or an ImageQuick card SIMM, only PostScript emulation, PCL emulation, and ASCII text files can be printed in this manner.

4 Click **Print File**.

Printing a test page

Printing a test page sends a job through the print queue to verify the queue is working correctly. The test page includes information such as the queue name, device name, and printer type.

1 Right-click the print queue icon.

2 Select **Print Test Page**.

Printing a duplex job

Duplex printing is printing on both sides of the paper. The printer must have an optional duplex unit installed in order to print on both sides of the paper. Check the documentation that came with the printer to determine if this option is supported.

If you have an optional duplex unit installed in your printer, you can specify duplex printing by indicating the binding edge you want to use from the Duplex options.

If you select Long-edge, the pages of the document turn like the pages of a magazine. If you select Short-edge, the pages turn like the pages of a legal pad

Printing multiple pages on one sheet

The multiple-page printing option lets you print images of multiple pages on one sheet. You can specify the direction the multiple images fit on the page and whether images are separated by a border. When you make a selection, the graphic to the right of the option changes to show how the printed page will look.

1. From the Properties dialog box, click **Setup**.
2. Choose the number of page images you want to print on the same sheet of paper.
3. Click **OK**.

Note: Not all printers support the multiple-page feature. Check the documentation that came with the printer to determine if the printer supports this feature.

Printing multiple copies of a document

Use the Copies option to print more than one copy of a document at a time. The Copies box on the Setup tab is independent of a Copies option that may be available in the Print dialog box of some programs. Program settings usually override the settings on the Setup tab.

Specifying the number of copies on the Setup tab usually prints uncollated copies faster. Specifying a multiple numbers of copies on both the Setup tab and in a program Print dialog box may produce unpredictable results.

1. From the Properties dialog box, click **Setup**.
2. Enter the number of copies.
3. Click **OK**.

Collating copies

By default, multiple copies of a document are not collated. All copies of the first page are printed, followed by all copies of the second page, and so on. If you want to print collated copies, select the **Collate Copies** check box. This enables the printer to print copies in sequence (one copy of the first page, followed by one copy of the second page, followed by another copy of the first page, followed by another copy of the second page).

Note: If the printer does not have enough memory to collate a large document, it prints collated pages of part of the document. It then prints collated pages of the remainder of the document.

Changing the orientation of a print job

You can specify the orientation you want to use for printing documents in the Print Queue Properties dialog boxes.

- Select **Portrait** if you want the document taller than it is wide.
- Select **Landscape** if you want the document wider than it is tall.
- Select **Reverse Landscape** or **Reverse Portrait** to rotate the document 180 degrees. This rotates the document "upside down."
- Select **Printer Setting** to let the printer determine the orientation.

Note: These settings are only supported by the PCL emulation printer language.

Changing the Lines Per Page setting

Some applications do not have page settings or print settings capability, or they do not let you change the number of printed lines on a sheet of paper. You can adjust the number of printed lines on a single page, or the number of printed lines in an inch from the PCL Emulation Properties of a print queue.

1. Open the print queue properties.

   For more information, see "Changing the print queue properties" on page 21.
2. Click **Page Layout**.
3. Change the number of Lines Per Page.
4. Change the number of Lines Per Inch.
5. Click **OK**.

Notes:

- This feature is only supported by the PCL emulation printer language.
- The lines per page and lines per inch numbers work together.
- You can select 66 Lines Per Page which deactivates the Lines Per Page and Lines Per Inch settings and prints 66 lines on a letter-size piece of paper.

Defining the printable area when printing text files

1. Open the print queue properties.
2. Click **Page Layout**.
3. From the Page Layout dialog box, click ❯ next to the text boxes to select the margin size, indentation, and page width.
4. Select **Text Wrap** if you want lines to wrap when they reach the printing area margins.
5. Select **Auto CR** if you want carriage returns when a line feed is encountered. This is commonly used by UNIX users to fix problems with ASCII text printing.
6. Select the orientation for the print job.
7. Click **OK**.

Note: These settings are only supported by the PCL emulation printer language.

Using the Print and Hold setting

When sending a job to the printer, you can hold a job in the printer memory using the printer driver. When you are ready to print the job, access the printer control panel menus to select the held job you want to print.

1. Open the print queue properties.

   For more information, see "Changing the print queue properties" on page 21.

2. Click **Print and Hold**.

3. Select the type of print and hold setting you want to apply.
   - Select **Off** if you do not want to hold your print jobs.
   - Select **Confidential** if you want to hold your jobs in the buffer of the printer until a personal identification number (PIN) is entered from the control panel. There is a default PIN for the printer driver; it appears in the Job Information to the right of the Print and Hold options. The PIN must be four digits. This ensures the job does not print until you are ready to retrieve it, and it ensures no one else using the printer can print the job.
   - Select **Verify** to print one copy and hold all remaining copies in the printer memory. For example, you may want to make sure the first copy is satisfactory before printing the remaining copies. After you print all the copies, the Verify job is deleted from the printer memory.
   - Select **Repeat** to print the originally requested copies of the print job, and then store the job in memory so you can print additional copies later. You can print additional copies as long as the job remains stored in memory.
   - Select **Reserve** if you do not want to print the job immediately, but want to store the job in memory so you can print it later. The job is held in memory until you delete it from the Held Jobs menu.

Note: Reserve and Repeat print jobs may be deleted if the printer requires extra memory to process additional held jobs.

4. Click **OK**.

To use the confidential Print and Hold function from the command line of a Sun Solaris, HP-UX, IBM AIX, or Linux with CUPS system, enter the following command:

```
# lp -d queue_name -o print_hold=confidential -o pin_no=pin file_name
```

To use the confidential Print and Hold function from the command line of a Linux with the LPRng system, enter the following command:

```
# lpr -P queue_name -C "lexopts:print_hold=confidential pin_no=pin"
file_name
```

Note: Not all printers support the Print and Hold feature. See the printer documentation to determine if the printer supports this feature.

Creating custom banner pages

You can write a program that generates customized banner pages from your print queues. Creating customer banner pages does not automate any printer administration, but it can make it easier to find your print jobs at the printer.

Writing a banner program

You can create custom banner pages for your queues by writing a program that takes seven positional arguments and prints the banner page on the standard out (stdout). The seven banner program arguments are:

- file
- user
- host
- queue
- message
- paper
- locale

All the arguments are strings and should be enclosed in double quotes (" ") if they contain spaces.

The data output by your banner program should be readable by the selected printer emulation. For example, PCL emulation banner programs should create valid PCL emulation data.

Using a banner program

When you have written your custom banner program, you must configure your print queue to use it.

1. Open the print queue properties.

   For more information, see "Changing the print queue properties" on page 21.
2. Click **Banner**.
3. Clear the **Default Banner** check box.
4. Enter the name of the banner program, or click **Browse** to search for the file name.
5. Make any additional changes to the banner page options, such as Paper Size, Paper Source, and Paper Type.
6. Click **OK**.

Changing a virtual device

1. Click **Device Manager**.
2. Select the virtual device you want to change.
3. Click **Properties**.
4. Make your changes.
5. Click **OK**.

Notes:

- You cannot modify a virtual device from the command line.
- You cannot change a virtual device type after creation. If you need to do this, delete the existing device and then re-create it.

Removing a virtual device

1. Click **Device Manager**.
2. Select the virtual devices you want to remove.
3. Click **Remove**.

   Note: A virtual device cannot be removed if a print queue is currently associated with it. A notification message appears if you try to remove a device that has queues associated with it.

You can also remove a virtual device from the command line using the following command:

```
# /usr/lexprint/bin/rmdevice -d device_name
```

Changing a print queue to print to a different printer

1. Open the printer driver.
2. Right-click the print queue icon.
3. Select **Change Device**.
4. Select a device from the Device Manager table.

   If you do not see your printer listed in the table, you can create a new virtual device by clicking **Add Device**.
5. Click **OK**.

Note: You cannot change a print queue's virtual device from the command line.

Removing a print queue

From the icon view

1. Right-click the icon for the printer you want to delete.
2. Select **Delete**.

From the detail view

1. Select any number of the print queues listed in the table that you want to delete.
2. Right-click, and then select **Delete**.

From the printer driver

1. Click **Remove Print Queue**.
2. Select the print queues you want to delete.

3 Click **Remove**.

Note: The queue must be idle before you remove it. A notification message appears if you try to remove a queue that is in use.

You can also remove a print queue from the command line. To remove a print queue, type the following command:

```
# /usr/lexprint/bin/rmqueue -q queue_name
```

Plugin Manager utility (software updates)

Using the Plugin Manager utility

You can download and install new plug-ins for added device support. The Plugin Manager utility can be run from the printer driver or the command line.

Note: Your specific printer driver may not be included in the standard package. Check the *Software and Documentation* CD or the Lexmark Web site to determine if there are any plug-ins available for your printer.

- To access the utility from the printer driver, click **File ➞ Software Update**.
- To access the utility from the command line, enter the following command:

  ```
  # /usr/lexprint/bin/plugin_manager
  ```

The Plugin Manager utility lists all the currently installed plug-ins. If there are no plug-ins listed, you can download the latest device support from **http://downloads.lexmark.com**.

Installing plugins from the printer driver

1 Click **File ➞ Software Update**.

2 Select **Install**.

3 Select a plugin from the directory.

A confirmation dialog appears. It contains more specific information about the plugin you selected, and gives you the option to proceed with the installation.

4 Follow the instructions on your screen to complete installation.

After installation, you may be required to restart the application for changes to take effect.

Removing plugins from the printer driver

The Remove option allows you to uninstall a selected plugin.

1 Click **File ➞ Software Update**.

2 From the list, select the plugin you want to uninstall.

3 Select **Remove**.

You must restart the application for the changes to take effect.

Using the Plugin Manager utility from the command line

Installing, listing, and removing plug-ins is scriptable. You can maintain plug-ins from the command line.

Installing plug-ins

```
# /usr/lexprint/bin/plugin_manager -i plugin_file
```

Listing installed plug-ins

```
# /usr/lexprint/bin/plugin_manager -l
```

Removing plug-ins

```
# /usr/lexprint/bin/plugin_manager -r plugin_name
```

Frequently asked questions

Command line

How can I find the command line options for a print queue?

The command line program **`lsqueue_opts`** provides a list of options available for this queue.

For more information, see “Printing from the command line” on page 24.

Can I create a print queue from the command line?

You can create and remove both virtual devices and print queues from the command line.

For more information, see “Creating virtual devices” on page 17 and “Creating a print queue” on page 19.

What is the command line submission GUI, and how does it work?

The command line submission GUI is accessed by typing **`lexlp`** instead of the **`lp`** command when you print from the command line. If you use **`lexlp`**, the Print Queue Properties dialog appears. From this dialog, you can customize the print properties for this particular print job before the job prints.

For more information, see “Printing from the command line” on page 24.

Note: You can also use the **`lexlp`** in applications such as Mozilla. Replace the existing **`lp`** command with the **`lexlp`** command.

Print queue management

I see special icons on the printer in the icon view. What do the icons mean?

Three different icons may appear on the print queues.

- An “X” means the print queue is rejecting print jobs. The detail view shows the queue in red.
- A “!” means the print queue is disabled. A disabled queue continues to accept print jobs. These jobs are stored in the queue but are not printed. The detail view shows the queue in yellow.

  Note: An enabled queue might reject print jobs, just as a disabled queue might accept them.
- A graphic of a person means the user has personalized settings. The detail view shows a check mark in the Printer Settings column.

A print queue I used to print to has disappeared. What happened?

The print queue was probably removed by an administrator. Try printing to a different queue, or contact your administrator.

Why can't I add or remove print queues?

You probably have normal user permissions. Only administrators have the ability to add or remove queues.

Do I need the root password to add or remove a print queue?

No, but you must open the printer driver as an administrator.

How can I enable or disable a print queue?

To enable a print queue:

1. Open the printer driver as an administrator.
2. From the main window, right-click the print queue icon.
3. Select the **Enabled** check box.

To disable a print queue:

1. Open the printer driver as an administrator.
2. From the main window, right-click the print queue icon.
3. Clear the **Enabled** check box.

Normal user or administrator

Why are some toolbar icons unavailable and some options missing when I start the printer driver?

The printer driver has two levels of access: user mode and administrator mode. The unavailable and missing icons represent administrative options that regular users cannot access. This protects the print subsystem while still providing users their own print queue settings. If you need administrative permission, see your administrator.

What are user and system settings, and how do they work?

When you open the print driver as a normal user, and you change the settings of a particular queue, you are creating new settings for that queue. Those settings are stored in your home directory as your user settings. If a user logs in as an administrator and makes changes to a particular queue, those changes are for everyone. The only settings not affected are those user settings that were created before the administrator changed the system settings. The print driver always checks to see if you have user settings in place before following the system settings.

How do I make a normal user an administrator?

The system administrator adds the user to the administrative group.

For more information, see “Adding or removing a user from the administrative group” on page 17.

Default settings for the program or queue

I am a normal user and do not have permissions to add or remove queues. Can I change the settings (such as duplex or input trays) of the queue ?

Yes, you can change the settings for a particular print queue, and those settings are saved to your home account. You can also change the settings for a single print job.

I changed the settings on the queue, but when my colleague prints to the same queue on the same host, the settings are different from mine. What is wrong?

You have created user settings for that print queue, but if your colleague has not, the system settings are still in effect. Your colleague must open the printer driver and change his or her user settings.

Can I make My Printers my default group?

No.

Related topics

What are the network options in the virtual device, and how do they work?

When you add a network device, you can set options such as Administrator User ID, Logfile Name, Printer Intervention Information for User, and Printer Intervention Information for Administrator.

- The Administrator User ID is the ID of the system administrator who receives printer intervention information.
- The Logfile Name is the field where you can specify the location and name of the logfile.
- The Printer Intervention Information for User and Administrator are the fields where you select how the printer driver communicates important information to the current user (whoever is sending the job when the error state is reached) and Administrator (the person listed in the Administrator User ID field).

What are printer classes, and how do they work?

Printer classes are available only when you are creating a queue on Sun Solaris, HP-UX, Linux with CUPS, or IBM AIX. Enabling classes for a printer and then adding the printer to a class means that if one printer in that class has a print job in process when another job comes in, the new print job can be printed on another printer in that class.

For more information, see "Working with printer classes" on page 22.

What are printer groups?

Printer groups are ways of organizing print queues to make them manageable for a user. There are two default printer groups in the printer driver: All Printers and My Printers. My Printers is a subset of All Printers the user selects to organize the volume of printers available on a system connected to a large network.

What is the difference between All Printers and My Printers in the tree on the left pane?

All Printers is a list of all print queues available on the system. My Printers is a subset of All Printers, and is determined by the user.

When I right-click the print queue icon, I see the Web page for some printers. Why does it not appear for others?

The page is available only for network-connected printers. It is not be available for printers connected by a parallel, serial, or USB connection.

Can I change a print queue's printer type after creation?

No. You must re-create the queue with the appropriate printer type.

Troubleshooting

The print queue is empty but my document did not print

Make sure you are sending the proper data to the printer. If you send PCL emulation or text data to a queue that accepts only PostScript data, the job leaves the queue but does not print. Try printing to another queue, or see an administrator for other printing options.

The print job is probably in the buffer of the print server or printer. As soon as the printer is available, the job prints.

- Make sure you are sending print jobs to the correct printer virtual device.
- Verify the properties of the virtual device to make sure the print job is going to the correct printer.
- Make sure the printer is working properly.

Jobs appear in the print queue for an extended time

- The printer is probably busy receiving other jobs. If you are using a print server, you may receive a Check the Printer message when this situation occurs.
- Check the print queue status. Make sure the queue is enabled.
- Check the printer connection.

If you are connected to the printer over a network	– Verify the proper device is selected in the virtual device. – See "The printer driver is unable to find the network printer" on page 39. – Try using the Print utilities to print directly to the printer. Example: **`send_network -f /etc/hosts hostname`** Replace **`hostname`** with the appropriate hostname of the printer. If this prints, recreate the virtual device and print queue. – Restart the **`lpsched`** or **`lpd`** process. – See the documentation for your operating system.
If you are connected to the printer locally	– Verify the proper device is selected in the virtual device. – Make sure the parallel, serial, or USB cable is working and is securely connected at both ends. – If you are printing over a serial cable, verify the serial setting in the virtual device matches the printer.

If you are using a Sun Solaris SPARC system	– Check to see if the parallel device is a bpp type. If it is, make sure bpp device is selected. If it is not, make sure bpp device is not selected. – Try using the Print utilities to print directly to the printer. Example: **`send_parallel -f /etc/hosts /dev/lp0`** Replace **`/dev/lp0`** with the appropriate device file name. If this prints correctly, recreate the virtual device and print queue. – Try printing directly to the device to see if the problem is with the communication of the server to the printer or the print queue. Example: **`cat /etc/hosts >> /dev/lp0`** Replace **`/dev/lp0`** with the appropriate device file name. If this prints correctly, re-create the virtual device and print queue. If it does not print, the problem is with the device, cable, or printer. – Restart the **`lpsched`** or **`lpd`** process. – See the documentation for your operating system.

The print queue does not receive print jobs

- The queue is in a rejecting state. When the queue is in this state, you cannot submit a print job to the print queue. To make the queue accept jobs again, right-click the queue icon, and then select **Accepting**.
- Recreate the print queue.
- Restart the **`lpsched`** or **`lpd`** process.

The print queue is disabled or down

- If the printer is connected locally (by way of a parallel, serial, or USB cable), check the printer cable.
- If the printer is connected to a network, check the print server.

If you are using an internal print server	– Make sure the print server is properly installed and enabled. To check this, print a setup page for the printer. The print server should appear in the list of attachments on the setup page. – If a network-related message appears on the control panel, see “Additional problems” on page 40. – Make sure TCP/IP is activated on the print server. The protocol must be active in order for the print server and Print Drivers to work. You can activate TCP/IP from the printer control panel. For more information, see the print server documentation.
If you are using an external print server	– Check the print server lights. For more information, see the print server documentation. – Print a setup page from the print server. For more information, see the print server documentation.

- If the printer is connected to a network, PING the print server.
  - If PING works, check the IP address, netmask, and gateway to make sure they are correct. Turn the printer off and PING again to check for duplicate IP addresses.
  - If PING does not work, check the setup page you printed to be sure IP is enabled.

- If TCP/IP is enabled, check the IP address, netmask, and gateway to make sure they are correct
- Make sure bridges and routers are functioning properly.
- Make sure all the physical connections between the print server, the printer, and the network are working.

- If the printer is connected to a network, compare the IP address of the print server to the address stored for the network printer in the name server or /etc/hosts file. If the addresses do not match, edit the /etc/hosts file, or update the name server to correct the address.
- Print a setup page from the print server.

  For more information about printing a setup page, see the print server documentation.
  - If the page prints, the connection between the print server and the printer is working correctly.
  - If the page does not print, check all physical connections.
  - Make sure the print queue is Enabled and Accepting jobs after you correct the problem.
  - Re-enable the queue with the printer drivers.
  - Remove all print jobs from the queue, and then re-enable the queue.
  - Verify the virtual device selection in the queue.
  - Create a new virtual device, and then change the queue to point to the newly configured virtual device.
  - Restart the **`lpsched`** or **`lpd`** process.

The file I sent to the print queue came out as garbage

You can create PCL emulation, PostScript emulation, Automatic, Automatic Plus, Automatic PDF, and raw data queues.

- Automatic queues support both PCL emulation and PostScript emulation data.
- Automatic Plus queues support PCL emulation and PostScript emulation data, as well as ImageQuick data (such as HTML, PDF, TIFF, and BMP).

  Note: Automatic Plus data queues work only with printers that support Direct Image or ImageQuick data. If you use an Automatic Plus queue with a printer that does not support ImageQuick data, the job will not print correctly.
- Automatic PDF queues support PCL emulation, PDF, and PostScript emulation data.

  Note: Automatic PDF data queues work only with printers that support PDF data. If you use an Automatic PDF queue with a printer that does not support PDF data, the job does not print correctly.
- PostScript emulation queues can print PostScript emulation data.
- PCL emulation queues can print PCL emulation and ASCII data.
- Raw data queues pass the print data directly to the printer without adding any additional printer-related commands.

If you want to print HTML, graphics, or PDFs on a printer that does not support these formats, you need to print them through an application that converts these data files into PCL emulation or PostScript emulation.

For more information, see “Printing a file” on page 25.

The hostname does not resolve

- If a DNS hostname does not resolve, your system may not be configured to search for a hostname without a domain name. Try using the full DNS domain name.
- Check your name server (DNS server). Add the hostname to either NIS, DNS, or the /etc/hosts file.
- For more information, see the operating system documentation, or contact the system administrator.

The printer driver is unable to find the network printer

- Make sure the printer is on and ready.
- Make sure the LAN cable is plugged into both the print server and into the LAN, and the LAN is working properly.

  Note: If you have an internal print server, the LAN cable is plugged directly into the printer.

If you are using an internal print server	• Make sure the print server is properly installed and enabled. To check this, print a setup page for the printer. The print server should appear in the list of attachments on the setup page. • If a network-related message appears on the control panel, see "Additional problems" on page 40. • Make sure TCP/IP is activated on the print server. The protocol must be active for the print server and printer driver to work. You can do this from the printer control panel. For more information, see the print server documentation.
If you are using an external print server	• Check the print server lights. For more information, see the print server documentation. • Print a setup page from the print server. For more information, see the print server documentation. • Make sure all physical connections between the print server, the printer, and the network are working. • Turn the printer and print server off and back on. Turn the printer back on first.

- Make sure the SNMP community name you supplied to the printer driver is the same as the one set in the print server.
- PING the print server.
  - If PING works, turn the printer off, and then PING again to check for duplicate IP addresses.
  - If PING does not work, check the IP address, netmask, and gateway to make sure they are set up correctly for your environment.
- Make sure bridges and routers are functioning properly.

My printer model is not listed

- Make sure you have the latest version of the application.
- If you have the latest version, check the *Software and Documentation* CD or the Lexmark Web site to determine if there are any software plug-ins available.
- Make sure any plug-ins are installed.

  For more information, see "Plugin Manager utility (software updates)" on page 31.

Jobs are not printing

If you are using Linux with CUPS you may encounter printing problems due to mime types controlling how to filter print jobs. In order for jobs to print correctly, you must remove this mime type, allowing the print jobs to filter properly. For more information, see "CUPS" on page 16.

Additional problems

- Before you call Customer Support, make sure you read through the symptoms covered in this troubleshooting section to help you diagnose the problem.
- Before calling Customer Support, gather the following information:
  - What version of the printer driver is being used
  - What operating system and version is being used
  - What printers are involved
  - How the printer is attached to the system
  - How the queue is configured
  - What applications, if any, are involved
- If this is a network printer, and the problem is sending data to the printer, determine the print server firmware level.

  Enter the following on the command line, and then press **Enter**:

  ```
  # finger info@hostname
  ```

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Glossary

accepting — The state of a print queue when it allows the submission of new print jobs.

If a queue is in the accepting state, the user is able to use the **`lp`** or **`lpr`** command to submit printer requests.

AIX — IBM's version of the UNIX operating system.

alias — A part of the BSD printer subsystem, aliases let you create multiple names for the same print queue.

Automatic Printer Language — A printer language option for printers that support both PostScript and PCL emulation printer languages. This option gives users the ability to print PostScript, PCL emulation, and ASCII text files to the same print queue.

baud rate — The transmission speed of the serial communication. The sending device speed must match the receiving port speed.

BPP device — A designation for Sun's bidirectional parallel port.

This type of destination usually has a device name that resembles /dev.bppxx, replacing xx with the appropriate device number.

community name — See **SNMP community name**.

disabled — The state of a print queue when print jobs are held in the print queue.

DNS — See **Domain Name System**.

Domain Name System (DNS) — Something that resolves IP addresses to hostnames

enabled — The state of a print queue when print jobs are sent from the print queue to the printer.

external print server — Hardware used to connect printers to a LAN using either a Token-Ring or Ethernet cable.

The external print server allows network connectivity of a parallel or serial printer.

firmware — Software that resides in the print server; also called microcode.

firmware level — The version of the firmware.

gateway — The connection device between the LAN and other equipment, such as computers.

hostname — Name used to identify a network printer or computer.

internal print server — A card installed inside a printer to connect the printer to the network.

Internet Protocol (IP) — A standard protocol that specifies how packets are passed through networks. It identifies the format of the packet and describes how it should be delivered in a seamless manner. Although it is a separate protocol from TCP, it is often referred to as TCP/IP because TCP and IP protocols are often used together.

IP address — The unique physical address of the printer on a network using TCP/IP protocol.

LAN — See **Local Area Network**.

LAN segment — Any portion of a LAN that operates independently of, but is connected to, the network by bridges or routers.

lexlp	A program that opens the Print Properties for a particular job.
lines per inch	A function of the printer driver that allows the user to specify the number of lines to be printed on one inch of the paper. This number works with the lines per page setting to specify how much of the paper will be covered with text.
lines per page	A function of the printer driver that allows the user to specify the number of lines to be printed on a page. This number works with the lines per inch setting to increase or decrease the font size.
Local Area Network (LAN)	A computer network located on a user's premises within a limited geographical area.
lsqueue_opts	A command line program that lists print queue property options that are required when printing with command line options.
mkdevice	A command line program that creates a virtual device.
mkqueue	A command line program that creates a print queue.
My Printers	A subgroup of printers set aside by a user to simplify printing options.
name server	A DNS server that resolves hostnames to addresses.
netmask	A bit mask that specifies the local network portion of an IP address, letting you logically subdivide a network.
network address	The logical location on the LAN where a device, such as a printer, is located, typically 12 characters long.
Network Information System (NIS)	A UNIX service that lets administrators configure users, groups, hostnames, and other network information for a group of systems, rather than on each individual system.
network print server	The print server card installed in the printer.
network printer	A printer with either an internal print server or an external print server connecting it to the LAN.
NIS	See **Network Information System (NIS)**.
NIS tables	Configuration tables. See **Network Information System (NIS)**.
Packet Internet Groper (PING)	Software that tests whether an IP destination can be reached by sending it an ICMP echo request and waiting for a reply.
parity	A type of error detection method used in serial communications. Choices are Even, Odd, None, or Ignore. The sending device must match the receiving port.
PING	See **Packet Internet Groper**.
pkgadd	The System V software package add utility.
pkginfo	The System V software package list utility.
pkgrm	The System V software package removal utility.
port	The physical opening on the computer or external print server into which the printer cable connects.
Print and Hold	A function of the printer driver that allows you to store a job in the buffer of the printer and print from the control panel.
print file	A method of selecting a specific file from within the printer driver to print.

print queue	A "staging area" used to store print jobs, to be fed to a predefined printer or pool of printers. The place in the server where print jobs are stored for printing.
Print Queue Name	The name given by the administrator to the print queue when it is created. It is used by the **`lp`**, **`lpr`**, and **`lexlp`** commands to direct print jobs.
print server	Hardware or software (or a combination of hardware and software, such as network print servers) that takes information from a print queue and sends it to a printer. See **internal print server** and **external print server**.
print server's Web page	A page stored on the print server that contains information about that server.
print test page	A page that is printed from within the printer driver to test the communication between the software and the printer.
printer class	A pool of printers containing similar characteristics and capabilities. When one printer is busy, the job is then submitted to the next available printer.
Printer Type	The model name of the printer connected to a particular virtual device.
printq group	An AIX group authority. Members typically have authority to perform functions such as setting up printers, making print queues, and deleting printers.
process_printcmd	A command line program that generates command-line arguments for other transport agents, such as send_network.
process_printjob	A command line program that formats print jobs for printing according to queue settings.
protocol	A set of rules governing the communication and the transfer of data between two or more devices in a communication system.
range	Specified boundaries of a subnet, used when searching for IP addresses.
raw data	ASCII or plain text data that requires no interpretation by the print queue. Raw data can contain coding that is interpreted by the printer.
Red Hat Package Manager (rpm)	Linux packaging manager, which can be used to install, query, verify, and uninstall software packages.
rejecting	The state of a print queue when the user is not able to use the **`lp`** or **`lpr`** command to submit print requests.
rmdevice	A command line program that removes virtual devices.
sam	The system administration utility on HP-UX.
send_network	A command line program that sends data to a TCP/IP network printer.
send_parallel	A command line program that sends data to a printer connected to a parallel port.
send_serial	A command line program that sends data to a printer connected to a serial port.
send_usb	A command line program that sends data to a printer connected to a USB port.
SMIT	See **System Management Interface Tool (SMIT)**.

SNMP community name	A plain-text password mechanism used to authenticate queries to agents of managed network devices on a weekly basis. In order to prevent others from using your network printer, change the community name for the printer from the standard word "public." This breaks many tools used to print and manage the printer and should be done only if absolutely necessary. The SNMP community name selected in a virtual device must match the community name selected in the print server.
subnet	A segment of a network that is connected to a larger network. A local area network is sometimes referred to as a local subnet.
System Management Interface Tool (SMIT)	The administration tool used on the AIX operating system.
tar	A UNIX program used for archiving files together. Often used with a compression program to distribute programs on the Internet.
TCP/IP (Transmission Control Protocol/Internet Protocol)	A network protocol used to connect computers and hosts. It is commonly used in UNIX environments.
virtual device	Virtual devices contain information about the printer the virtual device represents. Queues use the information from the virtual device to transport the data to the printer. Virtual devices, however, are not system devices located in the /dev directory, and other applications cannot send information to a printer using a virtual device.
X client	A program that runs using the X Window System.
X server	A program that handles displaying graphical X client output on a display as well as distributing input from input devices to X clients.
X Window System	The X Window System is a window system capable of displaying programs over a network. X Window System servers run on computers connected to a monitor. The X server handles transferring input from keyboard and mouse devices to the X Window System program, called an X client. The X server also accepts output from X clients and displays the graphics on the monitor.
XON/XOFF	A type of serial transmission signaling used in serial communications. The sending device must match the receiving port.

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