



# *Network Protocol Information*

© Copyright 2005 Ricoh Printing Systems, Ltd. All rights reserved.

No part of this document may be reproduced without the express permission of Ricoh Printing Systems, Ltd.

The material in this document is for informational purposes and is subject to change without notice. Ricoh Printing Systems, Ltd. assumes no responsibility for errors or omissions in this document. No liability is assumed for any damages resulting from the use of the information it contains.

## **NOTICE TO USER**

In an effort to meet the demands of a rapidly changing technology, the manufacturer is continually developing new features and functions to meet your changing printing or printer needs. Please be sure to consult all manual updates or addenda when using this product's documentation.

## Revision Table

[illegible]

---

---

# Table of Contents

---

## **Chapter 1. Supported Protocols**

## **Chapter 2. TCP/IP Configuration**

Overview .....	2-1
TCP/IP Configuration .....	2-1
Assigning an IP Address .....	2-2
Using the OCP to Assign the IP Address .....	2-2
Using DHCP to Assign the IP Address .....	2-2
Verifying the Connection .....	2-2
Berkeley UNIX Host Configuration .....	2-3
Sun Solaris Configuration .....	2-4
SunOS 4.1.3C .....	2-5
Solaris 2.5, 2.5.1, 2.6, 7, 8, 9 .....	2-6
HP-UX / HI-UX Configuration .....	2-9
HP-UX 10.10, 10.20, 11.00, 11i .....	2-10
HI-UX WE2 6.20 3050RX .....	2-11
IBM AIX Configuration .....	2-13
Raw TCP Ports .....	2-14
Configuring Other Systems .....	2-15

## **Chapter 3. Additional Protocols & Features**

SNMP .....	3-1
Using FTP to Retrieve Captured Print Files .....	3-2
Time Synchronization .....	3-3
IPP .....	3-3
IPP Notifications .....	3-3
SMTP .....	3-4

---

# Chapter 1

## Supported Protocols

---

The following table documents the protocols that are supported in the standard network interface.

Protocol	Standard
TCP VPT Printing	Yes
LPD	Yes
Port 9100	Yes
HTTP	Yes
FTP	Yes
Time (port 37)	Yes
IPP	Yes
SMTP Client	Yes
BOOTP	No
DHCP	Yes
AppleTalk (PAP)	No
Novell	No

---

OG	L	0 1	
----	---	-----	--



## Chapter 2

# TCP/IP Configuration

---

### Overview

Virtual Print Technology® (VPT) Print Servers support the Transmission Control Protocol/Internet Protocol (TCP/IP) protocol suite with either network configuration. Since virtually all UNIX host computers support TCP/IP, this capability allows a printer to be shared on a UNIX Ethernet network. TCP/IP communications can proceed concurrently with other protocols, which means that with the optional NIC, UNIX, Novell, and Apple users can all share a common printer via the VPT Print Server.

The VPT Print Server with TCP/IP appears to the network as a UNIX host computer with a unique IP address running the lpd line printer daemon protocol. As a result, any host computer that supports the Berkeley remote-LPR command can spool jobs to the Print Server without the need for any special software on the host computer. Application programs run transparently and users do not need to learn new procedures in order to use the printer. The Print Server also supports gateways for communications with hosts on remote networks.

### TCP/IP Configuration

The VPT Print Server comes preconfigured to run on a TCP/IP network with a minimum of setup. The only mandatory configuration is entering an IP address and subnet mask. This configuration can be done directly from the Operator Control Panel (OCP), or DHCP.

Parameter	Default Setting
Node Name (not necessarily the same as the name in the /etc/hosts file)	DPCxxxxxx, where xxxxxx is the last six digits of the Ethernet address (e.g., DPC041988)
Service or remote printer names (TCP Port)	Refer to the <i>VPT Configuration and Installation</i> manual for the default service names available.

---

## Assigning an IP Address

The default IP address is 192.0.0.192.

### Using the OCP to Assign the IP Address

To assign the IP address, make the following selections from the OCP:

*Setup / System / Network / IP Address*

### Using DHCP to Assign the IP Address

When the VPT Print Server is configured for DHCP, and there is an active DHCP server on the network, the printer will automatically be assigned an appropriate IP address and subnet mask during the power up sequence. The gateway address, if used, can also be configured by DHCP.

When using DHCP, it is recommended that DHCP IP Address reservation be used rather than dynamic assignment from an address pool. Printer addresses are normally manually entered when setting up print queues and an address change following a power cycle would require the re-establishment of all print queues.

## Verifying the Connection

Before proceeding to the print queue setup, verify the connection between the host and the Print Server using the `ping` command. For example:

```
ping    192.189.207.3
```

---

## Berkeley UNIX Host Configuration

Berkeley UNIX host computers include SunOS (not Solaris). Sun Solaris, HP-UX, and IBM AIX users should skip to the appropriate sections later in this chapter.

---

### **CAUTION!**

*Enter the Print Server's service name (vp-name) as the name of the printer (refer to the VPT Configuration and Installation manual for the default service names available), and enter the name of the printer (myprinter) that you assigned in the /etc/hosts file as the remote host name; note that this name must be unique for each printer.*

---

1. Edit the /etc/hosts file (or equivalent local host table). For example:

```
192.189.207.233    myprinter
```

2. Edit the printcap file: An example of a typical entry in the printcap file is:

```
LaserPrinter:\
:lp=:\
:rm=myprinter:\
:rp=vp-name:\
:sd=/usr/spool/lpd/LaserPrinter:
```

where:

*LaserPrinter* is the queue name.

*myprinter* matches the name in the hosts file.

*vp-name* is the Print Server's service name. **Note:** *This name is case sensitive.*

*sd* is the spool directory.

3. Create the spool directory. The lpd spool directory is usually located in the /usr/spool directory. To create a new spool directory, use the `mkdir` command. For example:

```
mkdir /usr/spool/lpd/LaserPrinter
```

4. Print using the standard `lpr` command:

```
lpr -Pvp-name filename
```

5. For AT&T based UNIX systems, use the standard `lp` command:

```
lp -dvp-name filename
```

---

## Sun Solaris Configuration

To use a VPT Print Server with Sun Solaris, first use the Host Manager in the Admintool utility to add the Print Server IP address and name to the /etc/hosts file.

1. Click None - Use /etc files on host.
2. Click Apply.
3. Click Edit, then click Add Host.
4. Enter the Print Server name as the host name (this name is anything you want, but should not contain an underscore character).
5. Enter the IP address and Ethernet address of the Print Server (the Ethernet address has the format aa:bb:cc:dd:ee:ff).
6. Click Add, then close the Host Manager windows.

```
192.189.207.33      myprinter
```

Then use the Printer Manager in the Admintool utility under Open Windows as follows:

1. Select Edit.
2. Select Add.
3. Select Add Access to Remote Printer.
4. At the Printer Name prompt, enter the desired name of the print queue (for example, myprinter).
5. At the Printer Server prompt, enter:

```
name\!servicename
```

where:

*name* matches the Print Server name as entered in the hosts table.

*servicename* is the print service name.

6. Make sure the Print Server OS is set to BSD (this is the default setting).
7. Select Add.
8. To print, use the standard lp command. For example:

```
lp -dvp-name filename
```

More detailed instructions for SunOS 4.1.3C and Solaris 2.5, 2.51, 2.6, 7,8,9 follow:

---

### NOTES:

*The System Administrator must be logged into the host as super user "root" with the proper password word.*

*In order to install the printer over Ethernet with the UNIX operating system, the printer's IP address, Subnet Mask and possibly a Gateway IP address must be set prior to installation. This can be done via the OCP.*

---

---

## SunOS 4.1.3C

The **remote host name** (a name associated with the printer's IP address) must be registered in the file `/etc/hosts` and a **printer name** defined for the printer. For example:

- A sample **remote host name** is "printer1".
- The **printer name** (printer name is used at the time of printing) registered as "rpr1".
- The **dummy device file** name for the printer is "nnn".
- For PCL printing only, the **Virtual Printer Name** is "vp-pcl".
- For Postscript printing only, the **Virtual Printer Name** is "postscript".
- Otherwise, the **Virtual Printer Name** is "lp".

---

**NOTE:**

*These names are case sensitive.*

---

1. Create the dummy device file

```
# touch /dev/nnn
# chown daemon /dev/nnn
# chmod 666 /dev/nnn
```

---

**NOTE:**

*This operation may require the system command, `chgrp`. Refer to Unix system manual.*

---

2. Create directory for spool files

```
# mkdir /usr/spool/lpd/rpr1d
# chown daemon /usr/spool/lpd/rpr1d
# chmod 755 /usr/spool/lpd/rpr1d
```

3. Use an editor to create the following description and add to the `/etc/printcap` file.(ex: "vi" editor)

```
rpr1 | rps | PCL only printer:\    (rpr1 is the printer name)
:lp=/dev/nnn:\
:rm=printer1:\                    (remote host name)
:rp=vp-pcl:\                      (Virtual Printer name)
:lf=/usr/adm/lpd-errs:\           (error log filename)
:sd=/usr/spool/lpd/rpr1d:\        (spool directory)
:mx#0:\                           (No limit buffer space)
:sh:\                             (No title page)
:sf:\                             (No form feed)
```

- 
4. Initialize the new spool device.

```
# lpc start rpr1 (using printer name as defined in the printcap file)
```

5. Printing is performed using the following "lpr-P" command.

```
# lpr -P rpr1 file_name
```

---

**NOTE:**

*For this example only straight text files or PCL files can be printed with the above definition.*

---

If the Postscript option has been installed on the printer, then the entry in the "/etc/printcap" might look like the following:

```
rpr2 | rps | Postscript only printer:\(rpr2 is the printer name)
:lp=/dev/nnn:\
:rm=printer1:\                (stays the same as above)
:rp=postscript:\              (Virtual Printer name)
:lf=/usr/adm/lpd-errs:\        (error log filename)
:sd=/usr/spool/lpd/rpr1d:\      (spool directory)
:mx#0:\                        (No limit buffer space)
:sh:\                          (No title page)
:sf:\                          (No form feed)
```

Specifying the number of copies on the lpr command is not supported.

## Solaris 2.5, 2.5.1, 2.6, 7, 8, 9

The **remote host name** (a name associated with the printer's IP address) must be registered in the file **/etc/hosts** and a **printer name** defined for the printer.

For example:

A sample **remote host name** is "printer1".

The **printer name** (printer name is used at the time of printing) registered as "rpr1".

The **dummy device file** name for the printer is "nnn".

For PCL printing only, the **Virtual Printer Name** is "vp-pcl". Otherwise, the **Virtual Printer Name** is "lp".

---

**NOTE:**

*These names are case sensitive.*

---

- 
1. The type of communication by the printer is specified as a BSD system host.

```
# lpsystem -tbsd printer1
-t : bsd
```

2. Check the status: `lpstat - o`
3. Use the following command to stop the lp scheduler.

```
# /usr/lib/lpshut
```

4. Register the printer with the following command.

```
# /usr/sbin/lpadmin -prpr1 -sprinter1!vp-pcl - I any
-Tunknown
```

**p** : The printer name "rpr1" created above.

**s** : The remote host name and the Virtual Printer Name are separated by "!". For this example: the host name is "printer1" and the Virtual Printer Name is "vp-pcl". All characters lower case.

**I** : The file format sent to the printer. (Content types), use "any".

**T** : The printer type. Use "unknown".

5. Execute the following command to set up the printer as a default printer. If this setup is performed, the printer name specified in the "-d" option is omitted at the time of printing.

```
# /usr/sbin/lpadmin -d rpr1
```

6. To restart the lp scheduler enter the following command.

```
# /usr/lib/lpsched
```

7. The registered printer is made applicable.

```
# /usr/sbin/accept rpr1
# /usr/bin/enable rpr1
```

8. In order to check the status of the printer, enter the following command.

```
# lpstat -t
```

9. To print a file, use the following "lp-d" command.

```
# lp -d rpr1 filename
```

---

---

**NOTE:**

*For this example only straight text files or PCL files can be printed with the above definition.*

---

---

---

If the Postscript option has been installed on the printer, then the entry in number 4 might look like the following:

```
# /usr/sbin/lpadmin -prpr1 -sprinter1!postscript - I  
any -Tunknown
```

---

---

**NOTE:**

*Specifying the number of copies on the lpr command is not supported.*

---

---



---

## HP-UX / HI-UX Configuration

To configure a Print Server using HP-UX 10.x, use the *sam* program and execute the following steps:

1. From the list of options, select Printers and Plotters.
2. Select LP Spooler.
3. Press the Tab key.
4. Select Printers and Plotters.
5. Select Actions and then Add Remote Printer/Plotter.
6. Enter any name as the Printer Name, e.g., myprinter. This will be the name of the print queue.
7. Enter the IP address of the Print Server as the Remote System Name.
8. Enter the desired Print Server service name (vp-name) as the Remote Printer Name.

---

---

**NOTE:**

*This name is case sensitive.*

---

---

9. Check the box next to Remote Printer is on BSD System.
10. You can accept the default values for the remaining items.
11. Click OK to configure the printer.
12. You should now be able to print using the `lp -d` command with the printer name.

---

---

**NOTE:**

*The configuration for earlier versions of HP-UX is slightly different.*

---

---

More detailed instructions for HI-UX WE2.6.20 3050Rx and HP-UX 10.10, 10.20, 11.00, 11i follow.

---

## HP-UX 10.10, 10.20, 11.00, 11i

The **remote host name** (a name associated with the printer's IP address) must be registered in the file `/etc/hosts` and a **printer name** defined for the printer. For example:

A sample **remote host name** is "**printer1**".

The **printer name** (printer name is used at the time of printing) registered as "**rpr1**".

The **dummy device file** name for the printer is "**nnn**".

For PCL printing only, the **Virtual Printer Name** is "**vp-pcl**". Otherwise, the **Virtual Printer Name** is "**lp**".

---

### **NOTE:**

*These names are case sensitive.*

---

1. Use the SAM (System Administration Manager) utility as executed by following commands (system management tool).

```
# sam
```

2. First screen explains the usage of the SAM utility. Press "Enter" key after reviewing the contents.
3. At the next screen select "**Printers and Plotters**" and press the "Enter" key. If "LP gas Spooler" is chosen, "Enter" key is pushed
4. Select "**Printers and Plotters**" and press "Enter" key. A list of printers registered in the host will be displayed.
5. Press the "**Tab**" key .
6. From the "**Action**" menu select "**Add Remote Printer/Plotter**" and press the "Enter" key.
7. In the "**Add Remote Printer/Plotter**" screen, the following required items are entered and select [OK].

Printer Name : The printer name – e.g., "**rpr1**".

Remote System Name : Remote host name – e.g., "**printer1**".

Remote Printer Name : Virtual Printer Name - "**vp-pcl**" lower case.

[X] Remote Printer is on a BSD System <-- to enable BSD functionality.

Leave all other items in the default state.

After reviewing the contents, press the "**Tab**" key to move the cursor to the [OK] button.

8. Completion of registration is displayed on the "Printer and Plotters" screen as follows.

```
Name Type Enable To Print Accepting Requests Location
-----
rpr1 remote yes, idle yes vp-pcl on printer1
```

- 
9. To end SAM, press the "Tab" key to the "File" menu and select "Exit".
  10. Printing can be performed using the following "lp -d" command.

```
# lp -d rpr1 filename
```

---

**NOTE:**

*If rpt1 was registered then -d rpt1 can be left off.*

---

## HI-UX WE2 6.20 3050RX

1. Create dummy device file.

```
# touch /dev/nnn
# chown daemon /dev/nnn
# chmod 666 /dev/nnn
```

---

**NOTE:**

*This operation may require the system command, chgrp. Refer to Unix system manual.*

---

2. Create directory for spool files.

```
# mkdir /usr/spool/lpd/rpr1d
# chown daemon /usr/spool/lpd/rpr1d
# chmod 755 /usr/spool/lpd/rpr1d
```

3. Use an editor to create the following description and add to the **"/etc/printcap"** file.

(ex: "vi" editor)

```
rpr1 | rps | PCL only printer:\(rpr1 is the printer name)
:lp=/dev/nnn:\
:rm=printer1:\                (remote host name)
:rp=vp-pcl:\                  (Virtual Printer name)
:lf=/usr/adm/lpd-errs:\       (error log file name)
:sd=/usr/spool/lpd/rpr1d:\    (spool directory)
:mx#0:\                       (no limit buffer space)
:sh:\                         (No a title page)
:sf:                           (No form feed)
```

4. Initialize the new spool device.

```
# lpc start rpr1 (using printer name in printcap file)
```

5. Printing is performed using the following "lpr-P" command.

---

```
# lpr -P rpr1 filename
```

---

**NOTE:**

*For this example only straight text files or PCL files can be printed with the above definition.*

*Specifying the number of copies on the lpr command is not supported.*

---

The **remote host name** (a name associated with the printer's IP address) must be registered in the file **/etc/hosts** and a **printer name** defined for the printer. For example:

A sample **remote host name** is "**printer1**".

The **printer name** (printer name is used at the time of printing) registered as "**rpr1**".

The **dummy device file** name for the printer is "**nnn**".

For PCL printing only, the **Virtual Printer Name** is "**vp-pcl**". Otherwise, the **Virtual Printer Name** is "**lp**".

---

**NOTE:**

*These names are case sensitive.*

---

If the Postscript option has been installed on the printer, then the entry in the "**/etc/printcap**" might look like the following:

```
rpr2 | rps | Postscript only printer:\ (rpr2 is the printer
name)
:lp=/dev/nnn:\
:rm=printer1:\           (stays the same as above)
:rp=postscript:\        (Virtual Printer name)
:lf=/usr/adm/lpd-errs:\  (error log file name)
:sd=/usr/spool/lpd/rpr1d:\ (spool directory)
:mx#0:\                 (no limit buffer space)
:sh:\                   (No title page)
:sf:                    (No form feed)
```

---

**NOTES:**

*We recommend using the /etc/hosts file for the printer name rather than NIS or other name services. Refer to "Raw TCP Ports" on page 2-14 for the workaround.*

*Due to a bug in the Sun lpd implementation on Solaris 2.4 and earlier releases, you may encounter problems printing very long print jobs.*

*Solaris print queues can also be configured from the UNIX shell using the lpadmin command.*

---

---

## IBM AIX Configuration

To configure a Print Server on IBM AIX 4.x, use the SMIT program as follows:

1. Enter `smit` and select Devices.
2. Select Printer/plotter.
3. Select Manage remote printer subsystem.
4. Select Client services.
5. Select Remote printer queues.
6. Select Add a remote queue.
7. Enter the following remote queue settings:
  - ☐ Name of queue to add: myprinter.
  - ☐ Activate the queue?: Yes.
  - ☐ Destination host: VPT Print Server IP address; or if you have configured the `/etc/hosts` file, use the name of the Print Server that you specified in that file.
  - ☐ Name of queue on remote printer: vp-name.
  - ☐ Name of device to add: user selectable; for example `lp0`.
8. You should now be able to print using the `lp -d` command with the printer name.

---

---

**NOTE:**

*The Print Server can also be configured as a JetDirect card using AIX. To do this, refer to your AIX documentation.*

---

---

---

## Raw TCP Ports

The VPT Print Server provides a raw TCP port capability that can be used by any application that can open and send data to a TCP port. See the *VPT Configuration and Installation* manual for a list of available TCP ports.

The ports pass data through unmodified, so there is no TELNET interpretation provided. When using the raw TCP ports, make sure that TELNET interpretation is disabled in your software or you may get distorted printouts.

The raw TCP port is compatible with many popular software packages, including HP's JetDirect software for UNIX, TGV Multinet (streams mode), IBM AIX for the RS/6000, and any TCP/IP-based software that supports HP's JetDirect Ethernet network interface card.

The HP JetDirect software for UNIX is available for Sun Solaris, SunOS, and HP-UX. HP printers users can download these utilities from HP's web site (<http://www.hp.com>) or FTP site (<ftp.hp.com>).

To use the VPT Print Server with the HP host printing utilities on an HP-UX or Sun system:

1. Download the software from the HP web site or FTP site.
2. If the download file is in tar format, use the `tar xvf filename` command to extract the software, where *filename* is the name of the software that you downloaded (you must be logged in as root). If the file is in pkgadd format, use the `pkgadd -d filename all` command to extract the software. Accept the default directory to store the files. Follow the instructions in the readme files to install the software.
3. Run JetAdmin by entering `jetadmin` at the UNIX prompt (on SunOS 4.xx systems, use the `hpnpcfg` program instead of JetAdmin, but the configuration steps are similar).
4. Select item 1 (Configuration) and then select item 3 (Add printer to local spooler).
5. Enter the desired name for the VPT Print Server or IP address at the "Enter the network printer name/IP Name" prompt.
6. Select the printer type (for example, "HP LaserJet IIISi Printers").
7. If desired, change any of the configurable parameters (note that the default queue name is the name of the printer plus an underscore and a number, e.g., `laser_1`). Then enter 0 to configure the queue.
8. Answer "Y" at the "OK to Continue?" prompt. Exit the JetAdmin utility by pressing Return and then "q" twice.
9. Print a job using the `lp` command. For example:

```
lp -dlaser_1 /etc/hosts
```

10. If you need a different TCP port number or if you want additional TCP ports, you can create new Virtual Printers using the printer Web pages.

---

## Configuring Other Systems

VPT Print Servers can be used with any computer system that supports either the lpr/lpd protocol or the HP JetDirect card. In the case of lpr/lpd, the Print Server looks to the software like a UNIX host computer with a remote printer attached, where the name of this remote printer is the VPT Print Server service name (vp-name). In the case of JetDirect printing, the software prints to TCP port 9100 for the MIO/EIO.

---

OG	L	0 2	
----	---	-----	--



## Chapter 3

# Additional Protocols & Features

---

### SNMP

The printer can be managed by many applications that use the Simple Network Management Protocol (SNMP). The following MIBs are implemented by the printer.

- MIB-2 (conforms to IETF RFC 1213)
  - System Group
  - Interfaces Group
  - AT Group (optional NIC only)
  - IP Group
  - ICMP Group
  - TCP Group (standard configuration only)
  - UDP Group
  - SNMP Group
- Host Resources MIB (conforms to IETF RFC 2790)
  - hrSystem group
  - hrStorage group
  - hrDevice group (hrDeviceTable and hrPrinter Table)
- Printer MIB (conforms to IETF RFC 3805)
- Finisher MIB (conforms to IETF RFC 3806)
- Job Monitoring (conforms to IETF RFC 2707)
- DpC Private MIB, version 3

---

## Using FTP to Retrieve Captured Print Files

The printer provides a capture feature that allows transmitted print data to be stored on the disk. The contents of the data stream can then be recovered for analysis. This feature is included as a trouble-shooting aid and is not intended for normal customer operation. See the VPT Configuration and Installation manual, “Data File Capture”.

1. Move following menu from Web page to set as “Enable” of FTP function.  
*Manage / Configuration / Communication / TCP/IP / FTP*
2. Power cycle the printer.
3. Move following menu from Web page to set as “Capture to File”.  
*Manage / System / Virtual Printer / Any Virtual Printer/ Spooling*
4. Send a job to above selected Virtual Printer.

To copy a captured file from the printer, establish an FTP connection to the printer using the login name *capture*. No password is required for this user name. The captured files will be named “*captureX*”, where *X* is set to the value 1 at power on and is then incremented after each captured file is saved. Set the transfer mode to binary before sending the FTP GET command.

After the file has been copied and verified to be properly transferred, delete the file from the printer’s disk.

---

## Time Synchronization

Support of the Time protocol (port 37) or SNTP protocol is included to allow the printer's internal real-time clock to remain in sync with the local network. Use of this feature requires that a master time server be available on the network and the IP Address of the server be known to the printer. The printer will synchronize with the master every 24 hours. The printer can also be configured to switch from standard to daylight time and back. All configurations are set using the printer's internal Web server. The setup screen can be found at:

### *Manage / Configuration / Configuration / Calendar*

Time Server Primary IP Address - Defines the master time server

Time Server Secondary IP Address - Defines a second time server to use if the master is not available. (optional)

Time Zone - This must be properly set, since the time protocol value is always GMT.

Protocol - Choose protocol for Time Server.

Synchronization Time - This is the hour the printer will contact the master to update the real-time clock.

## IPP

The Internet Printing Protocol (IPP) is an application level protocol that can provide distributed printing using internet tools and technologies. In addition to a new printing methodology, IPP provides a rich set of printer attributes to allow an application to determine the characteristics and status of the printer or a print job without the requirement of supporting additional protocols.

All required IPP operations are included plus the Notification operations:

- Create-Printer-Subscriptions
- Get-Subscriptions-Attributes
- Get-Subscriptions
- Cancel-Subscriptions
- Get-Notifications

IPP functionality is enabled in the factory default configuration. The enable/disable setting can be modified using the Web server screen at:

### *Manage / Configuration / Communication / TCP/IP*

## IPP Notifications

*ippGet* and *mailto* methods can be used for job or printer notifications.

Printer notifications are established using the Create-Printer-Subscriptions operation. The lease time is infinite. Subscriptions must be explicitly canceled when no longer desired.

---

Job notifications are established only within the job. Create-Job-Subscriptions is not a supported operation. Job subscriptions are automatically terminated at the end of the job.

- The *notify-recipient-uri* attribute will create a *mailto* notification.
- The *notify-user-data* attribute will create an *ippget* notification.
- The *mailto* job notifications support only *job-completed*.

## SMTP

A Simple Mail Transfer Protocol (SMTP) client is included to provide IPP Notifications, remote diagnostics, and service information. This feature includes the following configuration parameters in the Web interface.

- Local SMTP Server IP Address -  
***Manage / Configuration / Communication / TCP/IP***
- Destination Email Addresses
  - ☐ For diagnostics and service - ***Service / Configuration / Address Book***
  - ☐ For IPP, the address is defined within the IPP message.

---

---

### **NOTES:**

*Some SMTP Servers require the sender name (i.e. the printer name) to be fully qualified. In this case, the domain name must be defined within the printer.*

*Domain Name can be set from Web page.*

*Manage / Configuration / Communication / TCP/IP / Domain Name.*

---

---