white paper

HP Print Server
Appliance 4250

July 2003

Installing and Configuring the HP Print Server Appliance

(PSA Firmware version 2.4.x and above)

Overview

The HP Print Server Appliance (PSA) is designed for quick and easy installation and configuration. With a few configuration settings and a minimal amount of time, the PSA will be up and running. The PSA easily integrates into existing Microsoft and Unix network infrastructures and utilizes the existing services and protocols.

This whitepaper guides you through the seven basic steps for smooth installation:

Step 1	Connect the Cables
Step 2	Configure the IP Settings
Step 3	Access the PSA's Web Interface
Step 4	Configure TCPIP Network Settings
Step 5	Configure Microsoft® Network Settings
Step 6	Set-up Administrator Accounts
Step 7	Configure Printers and Drivers

Description of the HP Print Server Appliance

The PSA is a network device used to manage and monitor printing (Figure 1). It has been designed to provide a quick and easy way to add print capacity without affecting the general-purpose server. It off-loads print spooling and printing services from general purpose file servers.

Figure 1 – HP Print Server Appliance 4250

Step 1: Connect the Cables

Connecting the cables is a 3-step process:

1. Rackmount the PSA (optional). A rackmount kit is shipped with the PSA for mounting it into an industry-standard rack or server cabinet. Follow the instructions in the kit for mounting.

2. Plug in the network cable. The network connection for the PSA (located at the rear of the PSA) will automatically sense your network speed and sync up to that speed. This is non-configurable. The PSA runs at 10mb (10 BaseT) or 100 mb (100 BaseT). The LEDs on the back of the PSA (near the RJ-45 connector) indicate the current speed. The PSA also detects whether your network connection is capable of running at full- or half-duplex.

3. Plug in the power cable to the back of the PSA and turn it on by pressing the Power button on the front panel.

Step 2: Configure the IP Settings

The PSA must have an IP address before it can complete its boot up cycle and route print jobs properly. If your network uses Dynamic Host Configuration Protocol (DHCP), the PSA obtains an IP address, subnet mask, and default gateway automatically. Go to Step 3.

If a DHCP server does not respond, the PSA displays a message asking you to manually configure the IP address. Manual IP configuration of the PSA is accomplished through the front panel buttons and the LCD display. Press the checkmark on the front of the PSA to start entering the IP address, subnet mask, and default gateway.

After the PSA is configured with the IP address, subnet mask, and default gateway, additional configuration information can be entered through the web interface.

Step 3: Access the PSA's Web Interface

You must use Microsoft ® Internet Explorer (version 5.5 or greater) or higher), or Netscape Navigator (version 6 or greater) to access the web interface for the PSA.

Point your browser to the PSA by typing the PSA's IP address. You will be prompted to type a user name and password. The default user name (admin) and default password (admin) can be used.

The PSA's **Overview** page (Figure 2) is displayed with the PSA's configuration information, including the default PSA name, IP settings, and firmware version.
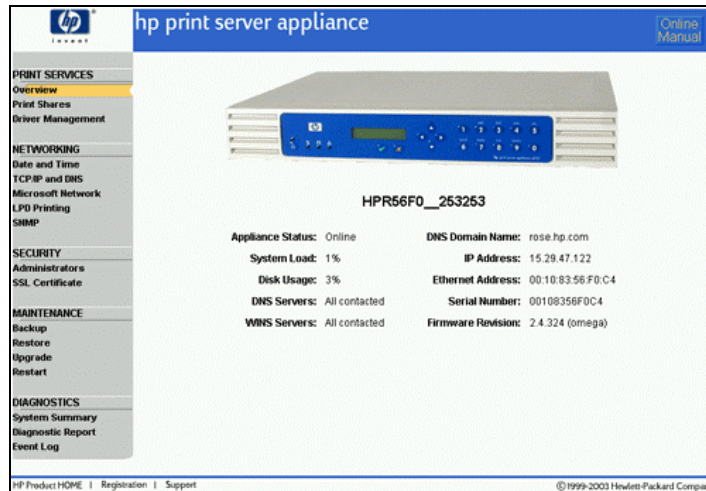
Figure 2 – Overview Page for the PSA

Step 4: Configure TCPIP Network Settings

To continue configuration the PSA, select **TCP/IP and DNS** under **Networking**. (The information in the gray box in Figure 3 was provided by the DHCP server or by you in Step 2 above.)
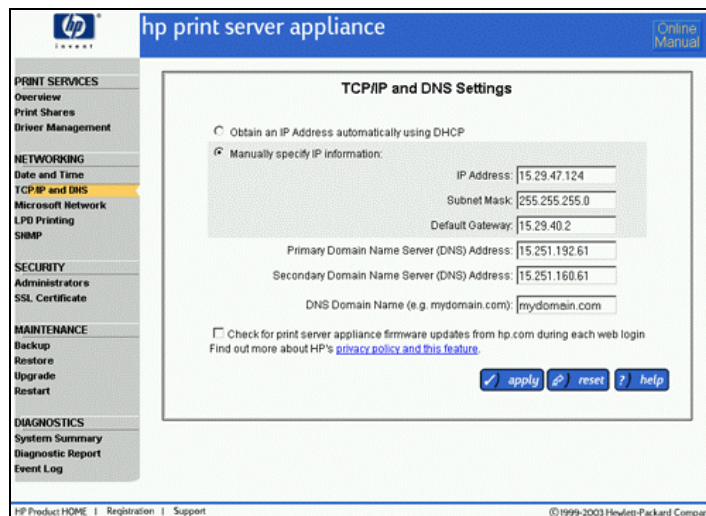

Figure 3 – TCP/IP and DNS Settings Page

On the **TCP/IP and DNS Settings** page, type information about a Domain Name Server (DNS). DNS allows network resources such as PCs and printers to be specified by a friendly name instead of an IP address. It is used by the PSA to locate itself or other network entities.

On this page, configure the:

- **Domain Name Server (DNS) address**: To ensure that the PSA functions correctly in large networks with many subnets, a DNS server should be used. Type the IP address of that server in this field.

- **DNS Domain Name**: The fully-qualified Domain Name should be entered in this field. The default DNS host name of the PSA is taken from the PSA system name.

In addition to configuring the DNS setting on the PSA, DNS entries for the PSA must be made in the forward and reverse lookup tables on the DNS server.

If you do not have DNS settings configured correctly on the PSA or on the DNS server, you may experience the following:

- **Slow performance when connecting to the PSA via Network Neighborhood**

- **Slow response when opening a printer's properties page**

  Note: When new firmware or other PSA-specific support information is available, your PSA can be notified automatically. On the **TCP/IP and DNS Settings** page, check the field **Check for print server appliance firmware updates during each web login**. When new firmware or support information is available, the picture of the PSA on the **Overview** page in the web interface will change.

Step 5: Configure Microsoft® Network Settings

Microsoft networking configuration settings must be configured on the PSA (Figure 4). These settings define the parameters for how the PSA appears and behaves on the network.

Figure 4 – Microsoft Network Settings Page

The following fields are on **Microsoft Network Settings** page:

- **Print Appliance Name** – By default, the PSA name starts with HPX followed by the last 6 digits of the hardware MAC address. This name:

- shows up on the PSA front panel during boot-up and in normal operating mode.
- is the DNS Host name for the PSA.
- is the default NetBIOS name for the PSA that will show up in your Network Neighborhood.

Note: Dashes (-) cannot be used as the first character of the PSA name.

- **Primary and Secondary WINS Server Address –** Windows Internet Name Service (WINS) enables network resources such as PCs and printers to be specified by their friendly or NetBIOS names instead of their IP addresses. WINS is also used for NetBIOS name registration on all subnets and to enable browsing across subnets.

  It is important to have the WINS server address configured properly because it is the first protocol used by the PSA to attempt name resolution for most network names. If configured incorrectly the PSA can experience slow performance.

  Note: To resolve a name on the network, the PSA will first use WINS. If this fails a NetBIOS broadcast will be attempted. If that fails, a DNS lookup will occur. In a large network with many subnets containing both Windows ® and UNIX machines, DNS and WINS will be used together.

  To verify that the WINS and network browsing is functioning properly, try pinging the NetBIOS name of the PSA from the command prompt. If you receive an error, verify that the WINS IP information entered is correct and verify the address with the network administrator.

- **Windows Domain or Workgroup –** Type the workgroup name or domain name that you want the PSA to be installed in. By default, the PSA installs itself in the workgroup "workgroup".

  The *nbtstat* command can be used to assist in diagnosing status of the PSA in the network as well as to verify WINS functionality. To use this command, type *nbtstat –a <psaname>* at a command prompt.

- **NT Domain Authentication -** Access to a printer share is granted based on the domain user's individual and group rights and permissions. Security is configured on an individual printer basis. In this mode, a machine account is created on the primary Domain Controller (PDC); the PSA uses authentication and authorization to determine if an individual is a member of the domain, and has sufficient rights to access a printer on the PSA. If you choose not to add the PSA to a domain, do not check this box. In this case, all users have print access to all of the print shares on the PSA.

- **NT Domain Controller -** You can set the PSA to automatically find the PDC in your network, or manually specify these controllers by either IP address or NetBIOS name. If you set the PSA to automatically discover the PDC, you must be using WINS on your network and have configured the PSA to use WINS.

- **Create an account for this device in the NT domain -** In order to use the Domain mode security, a machine account will have to be created on the PDC. This can be done through the NT native tools (server manager), or through the PSA's web interface by the following routine.

  1. Check the box that says **Create an account for this device in the NT domain** at the bottom of this page.
  2. Type an administrator name and password for the Domain. This is not the same as the administrator's name for the PSA.

  If the PSA has problems creating a system account, try the following steps:

- Verify that the Domain administrator name and password are correct.

- Try to create a system account directly on the PDC through server manager.

Step 6: Set-up Administrator Accounts

The PSA manages security through:

- **Local accounts (for user mode installation):** Administrator names are added directly to the local account group on the PSA. The names should match NT account names and passwords. All administrators will have the same access rights to the PSA.
- **NT Domain accounts (for Domain Mode installation):** Add administrator accounts on the Administrators page (Figure 5). If using Microsoft's Internet Explorer, administrators with Domain Admin accounts on the PSA will be automatically authenticated on the PSA using NTLM and will not be prompted for a password.
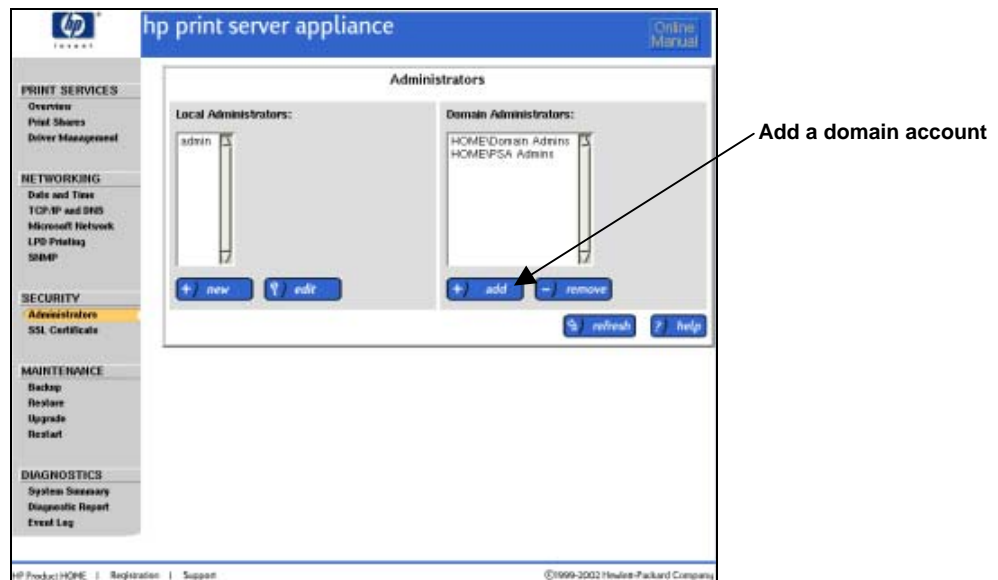

Figure 5 – Administrators Page With Domain Accounts

Step 7 – Configure Print Shares and Drivers

Print shares and drivers are added to the PSA and managed on the **Print Share List** page (select **Print Shares** under **Print Services**, Figure 6). If you click **Add**, the **Add Printer Wizard** is started. This is a three-screen wizard that walks you through adding a print share.
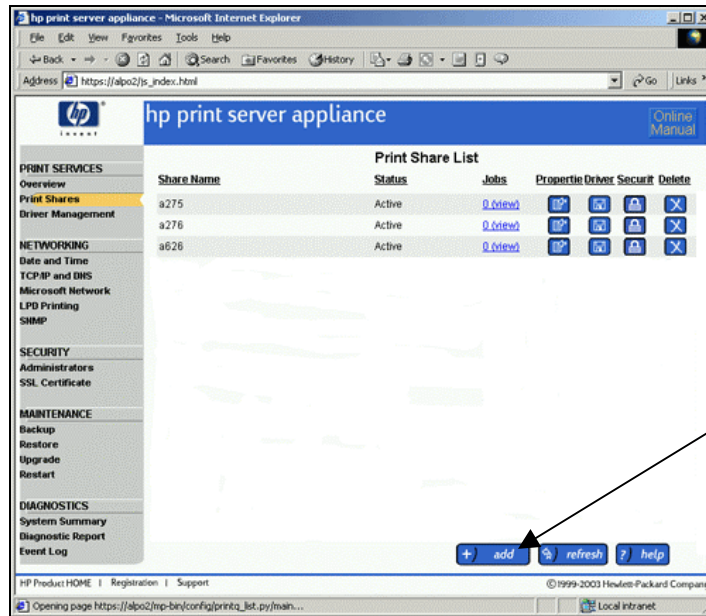
Figure 6 – Print Share List Page

On the last screen in the wizard, you must install a driver for the print share. The driver can be a pre-loaded driver (already on the PSA), or you can add a new driver by clicking **Add Driver** (Figure 7).
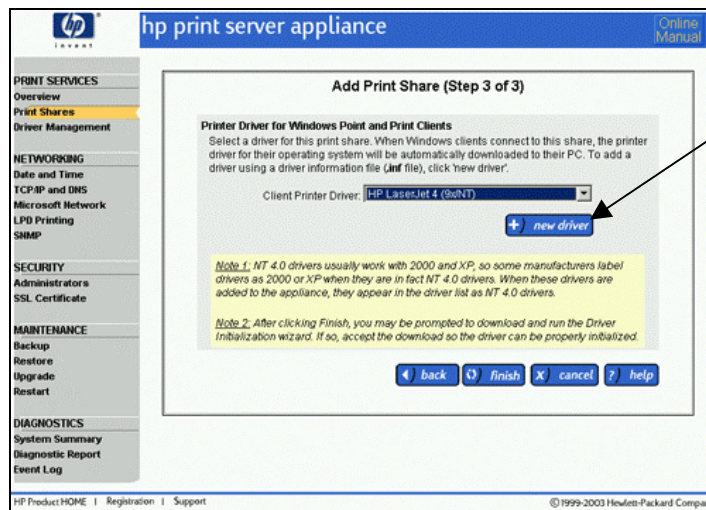

Figure 7 – Adding a New Driver through the Wizard

To install print shares and drivers, your PC must be running NT, 2K, or XP operating system AND you must have Power User rights or better on the PC you are using.

Before drivers can be initialized, Java Scripting must be enabled (in Internet Explorer, under: Internet Options-->Security (tab)-->Custom Level (button)-->Scripting-->Scripting of Java Applets (subheading). It is recommended that you first select either the 2K or NT version of the driver and then add the additional supported OS drivers if you need them. Repeat this process for each print share to be installed onto the PSA.

Once the print share is configured with its driver on the PSA, clients can install the print share.

Enabling and Disabling Drivers. On the **Driver Management** page (under **Print Services**), you can enable and disable drivers. A driver that has been installed and initialized properly will be enabled and available to work in the driver download model. That is, the driver will automatically be pushed to the client upon printer installation.

A disabled driver is displayed with a tilde (~) in front of it in the driver list on the **Driver Management** page. Drivers can be disabled in the following situations.

- **Manually disabled drivers**. If you want to remove the point and print functionality from a printer, you can disable the driver yourself. If a driver is disabled clients, will be prompted to install it manually. (The printer driver name that is installed locally on the client must match the name of the driver on the PSA that is disabled.)

- **Automatically disabled drivers.** If a printer driver goes through the installation procedure but fails the initialization step, the printer will still be created on the PSA but the driver for that printer will be disabled automatically. A disabled driver will not be automatically installed onto a client during printer installation. To try initializing the driver again, repeat the steps to add the driver through the Driver Management page. If it still fails to initialize, select a different driver for that printer.

Summary

After you have configured your PSA, you should back-up the settings and register your PSA.

Saving the configuration parameters makes it easy to restore those parameters if the PSA must be replaced or if its configuration values are accidentally changed or lost. Use the Backup Settings page (under Backup/Restore) to save the following configuration parameters:

- administrator account user names and passwords
- network settings
- print share information
- printer drivers

To register your PSA, go to: http://www.hp.com/go/printappliance_registration.

The PS was designed to quickly and easily integrate into your existing network. By using the existing protocols and services like WINS, DNS and NetBIOS Broadcasts, the PSA will seamlessly become part of your network at a fraction of the cost of more conventional print spooling devices.

Ensuring a proper configuration on the PSA and in the network infrastructure eliminates most of the installation and configuration roadblocks and ensures proper functionality of the PSA.

For More Information

http://www.hp.com/support/printappliance
http://www.hp.com/go/printappliance_registration
http://www.hp.com/go/psa_whitepapers
http://www.hp.com/go/wja_whitepapers