

Tru64 UNIX Best Practice

Configuring a Netscape Directory Server for LDAP-Based Name Service in Advanced Printing Software

November 2001

Product Version: **Advanced Printing Software Version
1.1**

Operating System and Version: **Tru64 UNIX Version 4.0F or higher**

This Best Practice describes how to configure a Netscape Directory Server for LDAP-based name service in Advanced Printing Software.

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Configuring a Netscape Directory Server for LDAP-Based Name Service in Advanced Printing Software

This Best Practice describes how to configure a Netscape Directory Server for LDAP-based name service in Advanced Printing Software.

Note:

In this Best Practice, we refer to the iPlanet Directory Server and other iPlanet components by their former Netscape names, because the iPlanet interface and documentation have not been revised to reflect the new iPlanet name.

See the Tru64 UNIX Best Practices Web page for more information about Best Practices documentation:
http://www.tru64unix.compaq.com/docs/best_practices/index.html.

Is This Best Practice Right for You?

Not all Best Practices apply to all configurations, so you must be sure that this Best Practice is appropriate for your system and circumstances. To use this Best Practice, you must meet the requirements described in the following table:

Requirement	Description
Operating System	<i>Tru64</i> TM UNIX Version 5.0 or higher
Printing Software	Advanced Printing Software Version 1.1
Product Version	Netscape Directory Server Version 4.1
Impact on Availability	Printing services are not available when upgrading the software.

Before You Begin

Before you apply the Best Practice for *Configuring a Netscape Directory Server for LDAP-Based Name Service in Advanced Printing Software*, you must perform some preliminary tasks.

1. Install the required Netscape components on your server machine.
The required components are: Netscape Administration Server, Netscape Directory Server, and Netscape Console. These products are available as installable subsets on the Internet Express (formerly known as the Open Source Internet Software) software kit.
2. Use the `setld` installation procedure to install the required subsets on your server host or cluster.
The two required subsets are `IAELDRT5nn`, Netscape LDAP Runtime (Directory Services), and `IAENDIR5nn`, Netscape Directory Server (Directory Services).
3. Set up your administrative account user name and password by following the procedures outlined in the Netscape documentation set.

Applying the Best Practice

Before you configure the Netscape Directory Server for LDAP-Based Name Service in Advanced Printing Software, be sure to follow the recommendations in *Before You Begin*.

This Best Practice is presented in two parts: configuring the Netscape Directory Server and configuring the Advanced Printing Software for LDAP-Based Name Service.

You must configure the Netscape Directory Server first.

Configuring the Netscape Directory Server

To configure the Netscape Directory Server:

1. Start the Administrative Server:

```
# /usr/netscape/ns-home_v4.nn/start-admin
```
2. Start the Netscape Console:
If you are accessing the Directory Server host from a remote X Window console, enter the following two command lines:

```
>xhost +server host  
>rlogin server host
```

```
server_host>cd /usr/internet/ns-home_v4.nn
server_host>setenv DISPLAY X window display
server_host>./startconsole
```

The log-in dialog requests the user ID, password, and Administrative URL of your Netscape Administration Server. Refer to the example that follows and enter the requested information:

```
User ID: admin
Password: password (default is diradmin)
Administrative URL: http://hostname:8091/
```

The Netscape Console main dialog box is opened.

- a. Click on the Console tab, which is on the left.
Your organization's name, followed by the names of one or more server hosts, should be at the top of the hierarchy.
- b. Click on the plus sign (+) next to your server host to view the Server Group entry.
- c. Click on the plus sign (+) next to the Server Group to view the primary Netscape servers running on that host.
You should see the Administrative Server and the Directory Server. If the Directory Server is running, go to step 4, Create Organizational Unit; if not, go to step 3, Start Directory Server.

3. Start the Netscape Directory Server:

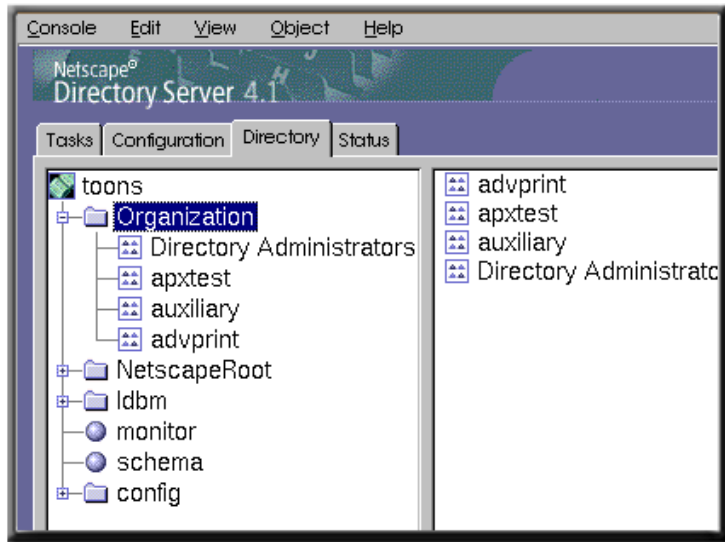
Check the Server Group in the Netscape Console to see if the Directory Server is running. If it is not, use the Netscape Administration Console to start it.

4. Create the Organizational Unit:

The Advanced Printing Software name space requires a unique node in the Directory Server database hierarchy. Use the Netscape Console to create a new node, the organizational unit, under the top-level organization node:

- a. Click on Directory Server to open the main dialog box.
In the examples in the following figures, the organization name is "Organization"; the name of your organization will appear here.
- b. Click on the Directory tab (*Figure 1: Directory Tab*).

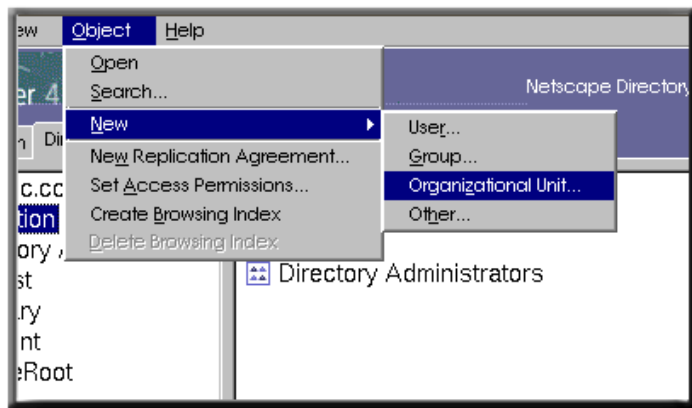
Figure 1: Directory Tab



The hierarchy on the left shows the server hosts (toons.zk3.dec.com:389) and the resources stored on the server host. Under the name of your server host, you should see the following: NetscapeRoot, ldbm, and config.

- c. Click on the name of your organization to open the Object menu (*Figure 2: Object Menu*), and choose New->Organization Unit.

Figure 2: Object Menu



- d. Enter a name of your choice for example, AdvPrint in the New Organizational Unit dialog box and enter a description, as shown in *Example 1: Name and Description Fields*. The Name field is required; the other fields are optional.

Example 1: Name and Description Fields

Name: **advprint**

Description: **Advanced Printing Software Name Space**

Phone:

Fax:

Alias:

Address:

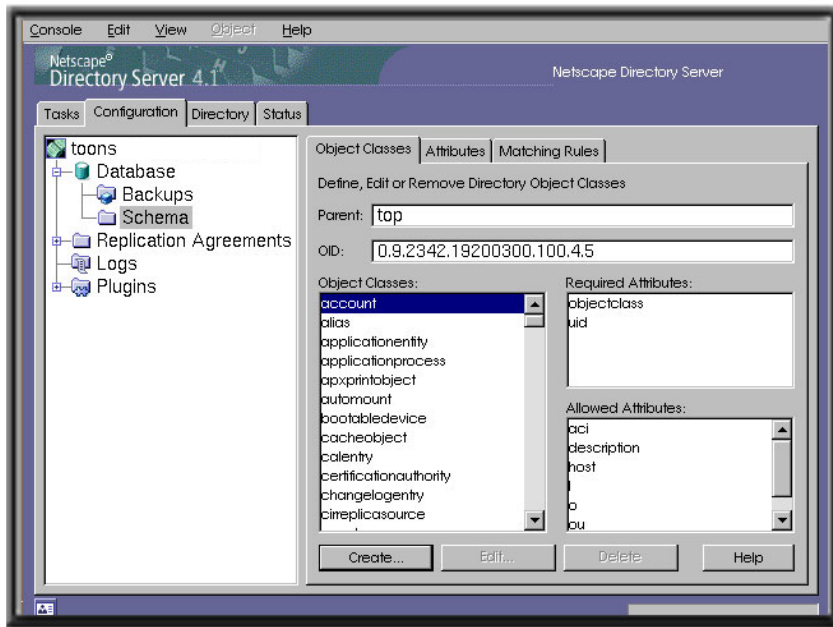
- e. Click on OK to create the entry. Verify that your new organizational unit appears in the hierarchy under your organization folder.
5. From the Directory Tab, extend the Directory Schema to include the Advanced Printing Object.

The Advanced Printing servers store printer, queue, and server names in an LDAP-Based directory in a special class of object called `apxprintobject`.

To create the `apxprintobject` class and two new attributes, `apxBinding`, and `apxType`:

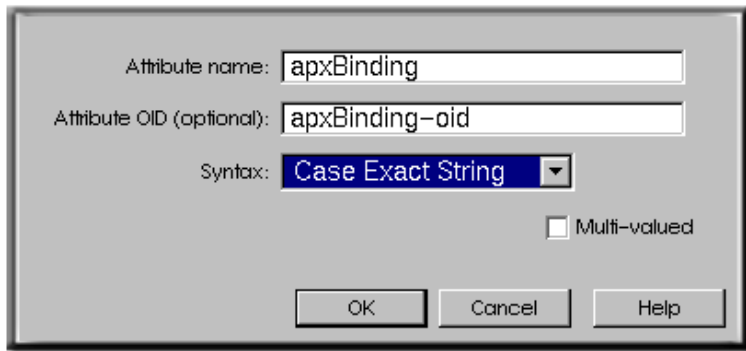
- a. Click on the Configuration tab in the Netscape Directory Server console.
The left side of the dialog box contains a hierarchy that shows one or more server hosts.
- b. Click on your server host to see entries for the Database, Replication Agreements, Logs, and Plugins (*Figure 3: Configuration Components*).
- c. Open Database by clicking on the plus sign (+) next to it. You will see the Backups and Schema components.
- d. Click on Schema.
- e. Click on the Object Classes tab. Click on an object class to view its required and allowed attributes.

Figure 3: Configuration Components



6. Create the apxBinding and apxType attributes.
 - a. Click on Attributes on the Configuration tab to view the existing standard and user-defined database attributes (*Figure 4: Attributes Tab*).

Figure 5: Create Attribute Dialog Box

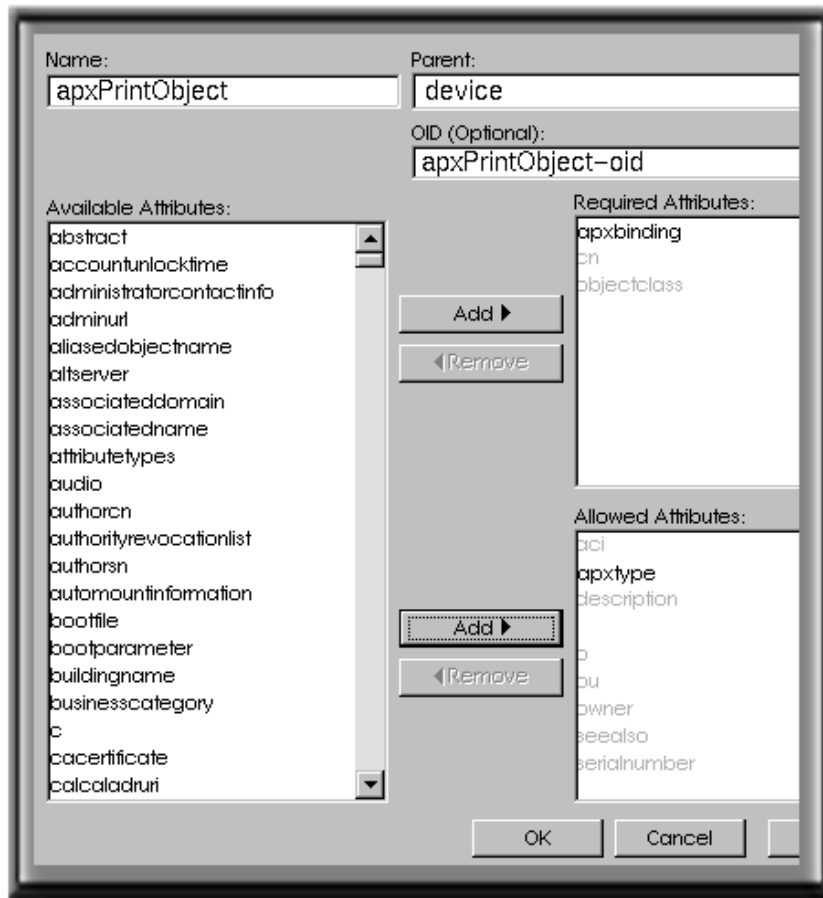


The dialog box contains the following elements:

- Attribute name:
- Attribute OID (optional):
- Syntax: (dropdown menu)
- Multi-valued
- Buttons: OK, Cancel, Help

- d. Click on OK when you have finished.
 - e. Repeat steps a, b, c, and d to create the apxType attribute.
 - f. Check the User-defined Attributes window in the bottom section of the Attributes tab to ensure that apxBinding and apxType are listed.
7. Create the apxprintobject Object Class:
- a. Click on the Object Classes tab.
 - b. Click on Create... to open the Create Object Class dialog box (*Figure 6: Object Class Dialog Box*).

Figure 6: Object Class Dialog Box



- c. Enter apxprintobject in the Name: field.
- d. Enter device in the Parent: field.
- e. Enter apxprintobject-oid in the OID (Optional): field.
- f. Click on apxbinding in the Available Attributes box.
- g. Click on the Add button to the left of the Required Attributes: box to move apxbinding to the Required Attributes: box.

Note that apxBinding and apxType are the same as the listed attributes, apxbinding and apxtype, which are shown as lowercase letters.

- h. Click on `apxtype` in the Available Attributes: box.
- i. Click on the Add button to the left of the Allowed Attributes box to move `apxtype` to the Allowed Attributes: box.
- j. Click on OK.
- k. Click on the Object Classes tab to verify that an entry for `apxprintobject` appears in the list of defined object classes.

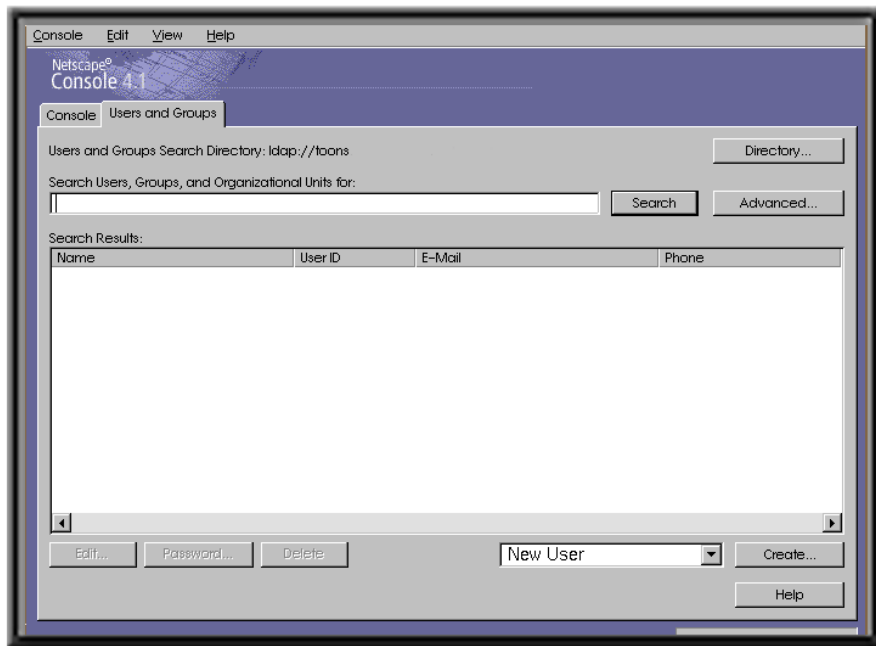
8. Create the Advanced Printing Access Account:

The Advanced Printing Software spooler and supervisor require write access to the LDAP-based directory database to create and delete printers and queues. The spooler and supervisor use the Advanced Printing Access Account, which is an LDAP account and a User ID not a UNIX account or UNIX UID.

To create the user entry that authenticates spooler and supervisor access:

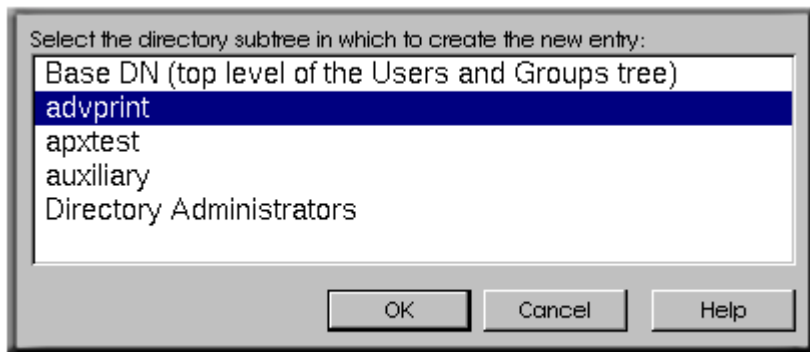
- a. Click on the Users and Groups tab on the Netscape Console menu (*Figure 7: Users and Groups Tab*).

Figure 7: Users and Groups Tab



- b. Click on Create... to open the Select Organizational Unit screen. This window (*Figure 8: Organizational Units Window*) shows the current organizational units.

Figure 8: Organizational Units Window



- c. Choose the organizational unit that you created for Advanced Printing in step 4. In *Figure 8: Organizational Units Window*, the example is advprint.
- d. Click on OK to open the Create User dialog box (*Figure 9: Create User Dialog Box*). Enter the required names in the fields marked by an asterisk [*]. You can enter any names you choose; however, Compaq recommends those shown in *Figure 9: Create User Dialog Box*, for your initial, name service setup.

Figure 9: Create User Dialog Box

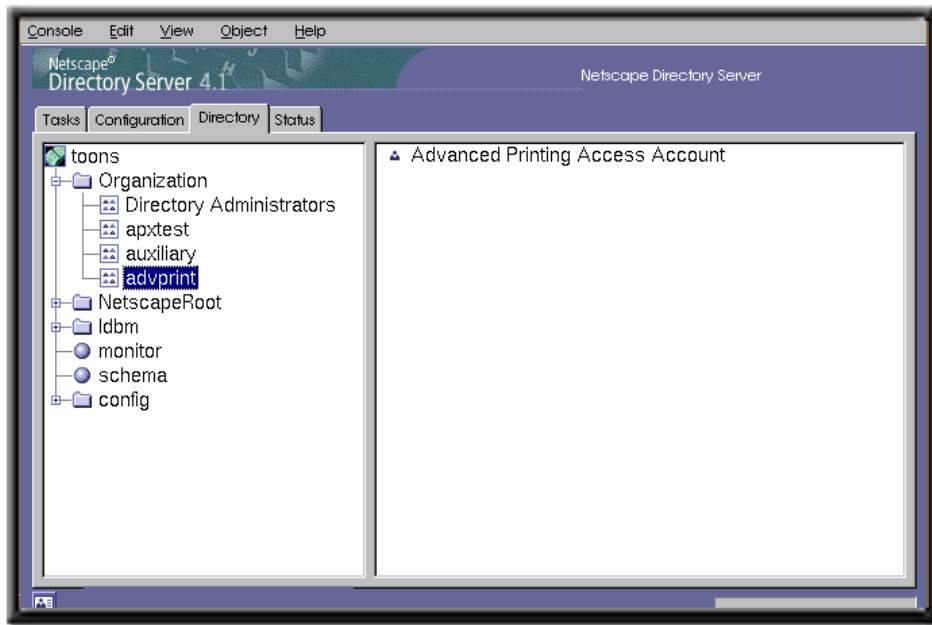
- e. Enter and verify a password.

Note

Record the User ID and Password entries. You will input them when you run `pdldappw`, before you start the Advanced Printing spoolers and supervisors.

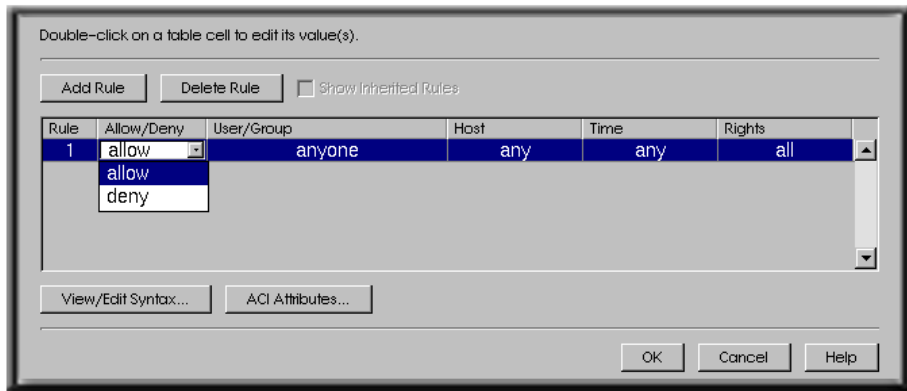
- f. Click on OK when you have finished.
9. Set Permissions for the Organizational Unit:
- You must set permissions on the organizational unit to allow adding, modifying, and deleting printer objects stored in it. Specifically, you need to limit write access to the Advanced Printing Access Account.
- a. Click on the Directory tab on the Netscape Directory Console (*Figure 10: Directory Tab*).

Figure 10: Directory Tab



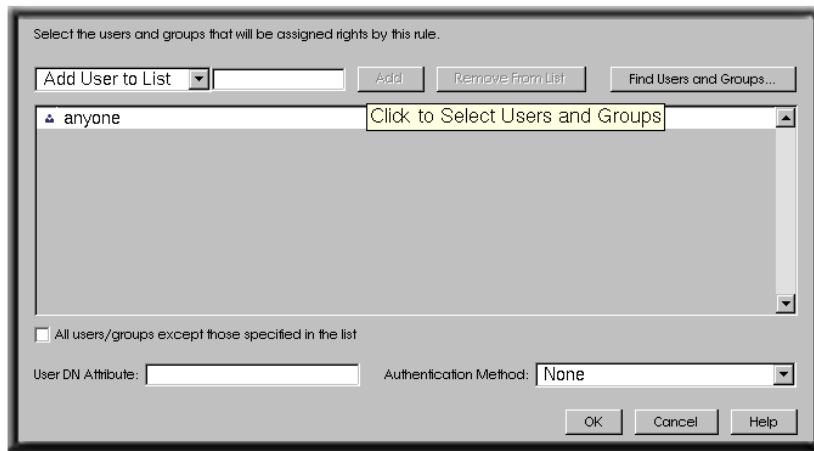
- b. Click on the organizational unit you created for printing objects. In *Figure 10: Directory Tab*, the entry is *advprint*.
- c. Position the cursor over the entry and right click. A submenu opens.
- d. Choose Set Access Permission from the submenu to open the Multi-value ACI Selector dialog box.
- e. Click on New... to display the dialog box to create an Access Control Information item (*Figure 11: Dialog Box to Create Access Control Information Item*).

Figure 11: Dialog Box to Create Access Control Information Item



- f. Double click on deny in the Allow/Deny box to open the submenu.
- g. Choose allow.
- h. Double click on anyone in the User/Group table cell to open the Users and Groups selection dialog box (*Figure 12: Users and Groups Selection Dialog Box*).

Figure 12: Users and Groups Selection Dialog Box



- i. Click on Find Users and Groups....

- j. Click on Search. You will see a list of entries from which to choose the Advanced Printing Access Account.
- k. Choose the Advanced Printing Access Account.
- l. Click on OK. The previous dialog box appears, and you will see Advanced Printing Access Account dialog box.
- m. Click on OK.
The Set Access Permissions table should contain the Advanced Printing Access Account in the User/Group submenu (*Figure 11: Dialog Box to Create Access Control Information Item*).
- n. Verify that the value under `Rights` is `all`. The `all` value allows the account full access to entries in the organizational unit.
- o. Click on OK.

The Netscape Directory Server configuration is complete.

Configuring Advanced Printing Software for LDAP-Based Name Service

After you complete the Netscape Directory Server configuration, you must supply the information in the Advanced Printing Access Account to the Advanced Printing Software. On the print server host (the Directory Server and the Advanced Printing servers might run on different hosts), specify the Directory Server host and database path in `/var/pd/config/apx.conf` and provide the user ID and password:

1. Enable the LDAP Name Service for Printing:
 - a. Stop all Advanced Printing spoolers and supervisors on the system.
If the spoolers and supervisors are not stopped, changing the name service currently in use by the server can cause unpredictable behavior.
 - b. Add the following entries to the `/var/pd/config/apx.conf` file. Edit or create the file, as necessary.


```
name-services = ldap file
LDAP-path = ou=advprint,o=Organization
LDAP-hosts = Netscape Directory Server host
```
2. Specify the LDAP Account Information:
 - a. As root, run `pdldappw`.

The `pdlldapw` command displays the current settings in `/var/pd/config/apx.conf` and prompts you for a user ID and a password.

- b. Enter the user ID and the password that you provided when you created the Advanced Printing Access Account in step 8 of Configuring the Netscape Directory Server.

The example that follows shows information about the host, `yourhost.bus.com`.

```
#!/usr/sbin/pdlldapw

Contents of configuration file
/var/pd/config/apx.conf:

name-services = ldap

LDAP-path=ou=advprint,o=organization

LDAP-hosts=yourhost.bus.com

LDAP User ID:advprintid

LDAP password:*****
```

The configuration is complete.

Verifying Success

After you apply the Best Practice for *Configuring Netscape Directory Server for LDAP-Based Name Service in Advanced Printing Software*, you can verify whether it was successful by setting up a client system in your network environment with Advanced Printing Software BASE and GUI subsets.

- To test the system without using an actual printer, set up a temporary spooler, supervisor, printer, and queue. Specify the printer-address as `/dev/null`.
- Create a configuration file on the client host in `/var/pd/config/apx.conf`. Specify the following:

```
name-services = ldap

LDAP-path = ou=advprint,o=your organization

LDAP-hosts = LDAP server hostname
```

- Use the `pdls` command, to verify that you can access the printers and queues on your printing server, for example `pdls -c server server name`. You can also use the `pdprintadmin` GUI tool on the client host.

If the LDAP name service is working correctly, the current print spooler status should be displayed. For example, if the spooler `my_spl` is working correctly, the return status would be similar to the following:

server-name	server-state	enabled
my_spl	ready	yes

If the LDAP name service is not working correctly, a message similar to the following is returned:

```
my_spl - Server process my_spl is not available
```

Additional information may be found in the system log file, `/var/adm/syslog.dated/current/lpr.log` on the client host, the print server host, or the host providing the directory services.

Comments and Questions

We value your comments and questions on the information in this document. Please mail your comments to us at this address:

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