Installing a configuration that uses IBM HTTP Web Server and InstantDB on HP-UX

The steps that follow describe the easiest way to install a single configuration of WebSphere Application Server that uses--

- HP-UX 11.0
- HP-UX SDK 1.2.2
- IBM HTTP Web Server 1.3.12
- InstantDB
- A single node

Installations using InstantDB should not be used in production environments and will not be supported if used in that manner. InstantDB is provided solely to help you evaluate WebSphere Application Server. Before installing, check the WebSphere Application Server Supported Hardware, Software, and APIs Web site at www.ibm.com/software/webservers/appserv/doc/latest/prereq.html to ensure that you have the correct prerequisites, including operating system patches.

Steps for installation

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Setting kernel parameters

For WebSphere Application Server to run effectively, you must change some operating system kernel parameters.

The *max_thread_proc* parameter must be set to at least 1024. Change the default value of 64 to 1024 (or higher).

The *maxfiles* and *maxfiles_lim* parameters should be set to at least 4096. The limit for both parameters is 60,000. However, the `sam` (System Administration Manager) program will not allow a value above 2048 without the following changes to the file /usr/conf/master.d/core-hpux:

- Change `*range maxfiles<=2048` to `*range maxfiles<=60000`
- Change `*range maxfiles_lim<=2048` to `*range maxfiles_lim<=60000`

Further, ensure that the following parameters are set to values at least as large as the following:

Parameter	Value
maxuprc	512
nproc	1024
nflocks	8192
ninode	2048
nfile	4 * ninode
msgseg	32767 (or less)
msgmnb	65 535
msgmax	65 535
msgtql	1024
msgmap	258
msgmni	256
msgssz	16
semmni	512

semmap	514
semmns	1024
semmnu	1020 (nproc value minus 4)
shmmax	268 435 456 (see below)
shmseg	16
shmmni	300

As to the *shmmax* parameter, ensure that it is set to 134217728 or 90% of the physical memory (in bytes), whichever is higher. For example, if you have 196 MB of physical memory in your system, set *shmmax* to `184 968 806` (196 * .9 * 1024 * 1024). Use SAM to determine your machine's physical memory.

If you will be redirecting displays to non-HP boxes, set LANG to a value shown by `locale -a` output before running applications that have a graphical user interface, such as the WebSphere Application Server applications started with the scripts install.sh or adminclient.sh. An example setting for LANG is--

```
export LANG=en_US.iso88591
```

Setting parameters using *sam*

To set the parameters, start `sam`. Select **Kernel Configuration** and then **Configurable Parameters**. Next, double-click on the parameter you want to change and enter the new value in the **Formula/Value** field. When you finish, click **OK**. Repeat these steps for each of the parameters listed above. After all of the parameters are set properly, select **Action** and then **Process New Kernel**. Your system will automatically reboot.

Mounting a CD-ROM on HP-UX

As the user root, perform the following steps one time:

1. Determine the device address for the CD-ROM by entering the following command:

   ```
   # ioscan -C disk -f -n
   ```

   Output similar to the following is displayed. This output example indicates that the CD-ROM device file is /dev/dsk/c1t2d0:

   ```
   Class I H/W Path      Driver  S/W State  H/W Type  Description
   ========================================================================
   disk  0 8/0/19/0.6.0  sdisk   CLAIMED     DEVICE    IBM       DDRS-39130WS
                         /dev/dsk/c0t6d0   /dev/rdsk/c0t6d0
   disk  1 8/16/5.2.0    sdisk   CLAIMED     DEVICE     TOSHIBA CD-ROM XM-6201TA
                         /dev/dsk/c1t2d0   /dev/rdsk/c1t2d0
   ```

2. Create a new directory called /cdrom at the root of the file system. This directory becomes the CD-ROM mount point; all CD-ROM files appear under this directory.
3. Determine whether the **pfs** daemon is running by entering the following command:

   ```
   # ps -ef | grep pfs
   ```

   If the **pfs** daemon is running, output similar to the following is displayed:

   ```
   root  1681  1651  0 11:39:20 pts/ta    0:00 /usr/sbin/pfs_mountd
   root  1682  1681  0 11:39:20 pts/ta    0:00 pfs_mountd.rpc
   ```

   If the **pfs** daemon is running, go to Step 6. If the **pfs** daemon is not running, complete Step 4 and Step 5 before trying to complete Step 6.

4. Edit the file /etc/pfs_fstab by adding a line similar to the following to indicate the hardware path for the CD-ROM:

    ```
    /dev/dsk/c1t2d0 /cdrom pfs-rrip xlat=unix 1 0
    ```

5. Enter the following commands. You must reenter these commands any time that you restart your system.

    ```
    # nohup /usr/sbin/pfs_mountd &
    # nohup /usr/sbin/pfsd &
    ```

6. To physically mount the CD-ROM, place the CD-ROM in the machine and enter the following command:

    ```
    # /usr/sbin/pfs_mount /cdrom
    ```

Unmounting a CD-ROM

After you finish using the CD-ROM, enter the following command to unmount it:

```
# /usr/sbin/pfs_umount /cdrom
```

You can now eject the CD-ROM.

Installing WebSphere Application Server -- Quick Install option

To install WebSphere Application Server, do the following:

1. If you have a version of IBM HTTP Server previous to Version 1.3.12 installed on your system, uninstall IBM HTTP Server. The installation of WebSphere Application Server will install Version 1.3.12.
2. Log into your machine with superuser (root) privileges.
3. If a Web server on your system is running, stop the Web server.
4. If you plan to use a Web server or database at a level that exceeds the current version required by WebSphere Application Server, you must disable the WebSphere Prerequisite Checker before installing WebSphere Application Server. To do this, perform the following steps:
    a. Copy the prereq.properties file from the /cdrom/hp directory to the /tmp directory on the machine on which you will install WebSphere Application Server.
    b. Edit this file by finding the line prereq_checker=1 and changing it to prereq_checker=0.
5. If you have not disabled the Prerequisite Checker as detailed in Step 4, run the installation script file by entering the following command:

    ```
    # /cdrom/hp/install.sh
    ```

    If you have disabled the Prerequisite Checker as detailed in Step 4, run the installation script file by entering the following command:

    ```
    # /cdrom/hp/install.sh /prereqfile  /tmp/prereq.properties
    ```

6. Click **Next** to pass the introductory page.
7. On the Install Options dialog, click **Quick Install** and then **Next**.
8. On the Security Options dialog, fill in the user ID, password, and confirming password to use for the application server and click **Next**.
9. Specify the destination directory. If you do not have IBM HTTP Server already installed on your system, then a fixed destination directory (/opt/HTTPServer) for IBM HTTP Server will be shown. Click **Next**.
10. Click **Next** again and then **OK** to begin the installation.
11. The next page points you to the README. If you select to view the README and a Netscape browser does not open on the README, look in the *<main_Application_Server_directory>*/web/InfoCenter/was directory for the readme.html file. For the most recent version of the README or release notes, go to **Library** section of the product Web site at http://www.ibm.com/software/webservers/appserv/.
12. Click **Finish**.

Testing the installation

1. Start the WebSphere Administrative Server by running the startupServer script in the /opt/WebSphere/AppServer/bin directory:

    ```
    ./startupServer.sh
    ```

2. Wait patiently. If the server is slow to start or does not start successfully, look at the tracefile log:

    ```
    tail -f opt/logs/tracefile
    ```

    If the trace file says *server is open for e-business*, the server has started.

3. Start the administrative console by running the adminclient script in the /opt/WebSphere/AppServer/bin directory:

    ```
    ./adminclient.sh
    ```

4. Wait until you see the console message *Console Ready*. Then administer the server:
    1. When the Administrative Console opens, the **Topology** tree view is shown. Click on the + sign next to **WebSphere Administrative Domain** to expand the view.
    2. Your host name should be listed. Expand the view of that node, and you should see an entry called **Default Server**. Expand that and you will see the default container and servletEngine.
    3. Select **Default Server**. If the **Current State** of DefaultServer is *Stopped*, click the **Start** icon on the tool bar. After an information dialog displays, stating that the server us running, click **OK**. Note that the current state changes from *Stopped* to *Running*.

        Once the server starts, it is marked in the configuration database that it should be running. If it stops, or if you reboot the machine, the administrative server will automatically restart it. Even if the administrative server fails, it will continue to run.

5. Test the server. Ensure that the IBM HTTP Server is running. If the IBM HTTP Server is not running, start the server by entering the following in the /opt/HTTPServer/bin directory:

    ```
    ./apachectl start
    ```

    Then, open a browser and go to http://localhost/servlet/snoop, which is a standard sample servlet installed by default. You should see information on /servlet/snoop.

Snoop Servlet - Netscape

File Edit View Go Communicator Help

Back   Forward   Reload   Home   Search   Netscape   Print   Security   Stop

Bookmarks   Location: http://localhost/servlet/snoop   What's Related

Requested URL:

http://localhost/servlet/snoop

Init Parameters

param1: test-value1

Request information:

```
Request method: GET
Request URI: /servlet/snoop
Request protocol: HTTP/1.0
Servlet path: /servlet/snoop
```

Document: Done