



HP-UX Web Server
Suite

October
2010

Migration Guide

Migration Guide

HP-UX Apache-based Web Server 2.x to HP-UX Apache-based Web Server 3.x

October 12, 2010



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Glossary

| | |
|-----------|---|
| ASF | Apache Software Foundation |
| CA | Certificate Authority |
| HP-UX WSS | HP-UX Web Server Suite |
| HP Apache | HP Apache-based Web Server |
| IPF | Itanium Processor Family |
| IPv6 | Internet Protocol Version 6 |
| JDK | Java Development Kit |
| JRE | Java Runtime Environment |
| LDAP | Lightweight Directory Access Protocol |
| MPM | Multi-Processing Module |
| PA-RISC | Precision Architecture, Reduced Instruction Set Computing |
| PHP | PHP Hypertext Preprocessor |
| RSA | RSA Security Inc. |
| WebDAV | Web-based Distributed Authoring and Versioning |

Document History

| | |
|------------------|-------------|
| October 12, 2010 | Version 1.0 |
|------------------|-------------|

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This documentation is based on information from the Apache Software Foundation (<http://www.apache.org>).

This product includes software developed by the OpenLDAP Project (<http://www.openldap.org>).

This product includes software developed by the OpenSSL Project for use in the OpenSSL Toolkit
(<http://www.openssl.org>).

This product includes cryptographic software written by Eric Young (eay@rpytsoft.com).

This product includes software developed by the Java Apache Project for use in the Apache JServ Servlet Engine (<http://java.apache.org>).

This product includes software developed by Ralf S. Engelschall (rse@engelschall.com), for use in the mod_ssl project (<http://www.modssl.org>).

This product includes software developed by Ralf S. Engelschall (rse@engelschall.com).

This product includes PHP, available from (<http://www.php.net>).

1 Using this Guide

This guide covers information about migration from HP-UX Apache-based Web Server Suite 2.x (WSS 2.x) to HP-UX Apache-based Web Server Suite 3.x (WSS 3.x) on servers running HP-UX 11i Version 2 and later and PA-RISC or Itanium Processor Family (IPF).

This guide can be used to:

- Understand the differences between HP-UX Apache-based Web Server 2.x and HP-UX Apache-based Web Server 3.x.
- Install the HP-UX Apache-based Web Server 3.x.
- Migrate the configuration of your HP-UX Apache-based Web Server from Version 2.x to Version 3.x.
- Verify that your HP-UX Apache-based Web Server migration was successful.

The guide is broadly divided into two sections:

- Chapter 2: Quick guide to migration solutions
- Chapters 3-7: Detailed Installation and Migration steps

2 Quick Guide to Migration Solutions

This section describes steps to migrate from the HP-UX Apache-based Web Server 2.x to the HP-UX Apache-based Web Server 3.x. Section 2.3.1 and Section 2.3.2 mention simple installations that require basic knowledge of Apache. If you have customized Apache, see the detailed sections (Section 2.4.1 and Section 2.4.2) later in the document. For implementing steps mentioned in Section 2.4.1 and Section 2.4.2, you must be familiar with the configuration files of Apache.

2.1 Quick Guide Assumptions

- 2.x refers to HP Apache-based Web Server 2.x.
3.x refers to HP-UX Apache-based Web Server 3.x.
- Files are in their default locations. For example:
HP-UX Apache-based Web Server 2.x is installed in the default locations:
<apache root> = /opt/hpws/apache and <tomcat root> = /opt/hpws/tomcat

HP-UX Apache-based Web Server 3.x is installed in the following default locations:
<apache root> = /opt/hpws22/apache, <tomcat root> = /opt/hpws22/tomcat,
<webmin root> = /opt/hpws22/webmin

The Apache documents are available at <apache root>/hpws_docs and /opt/hpws22/hp_docs/apache.

The Tomcat documents are available at <tomcat root>/hpws_docs and /opt/hpws22/hp_docs/tomcat.

The Webmin documents are available at /opt/hpws22/hp_docs/webmin.

(Note: The file /opt/hpws22/util/altroot.sh can be used to move Apache's root. Type "[altroot.sh](#) -h" for help with the script)

2.2 Preliminary Steps

2.2.1 HP-UX Apache-based Web Server 3.x Requirements

The minimum requirements for installing are:

- HP-UX 11i v2 and 11iv3 version
- 150 MB of disk. 200 MB of disk space for all four components installed
- Perl 5.8.8
- Java JDK 1.3 or later

2.2.2 HP-UX Apache-based Web Server 3.x Installation

To install the HP-UX Apache-based Web Server 3.x, perform the following steps:

- Stop Apache.
For example, if you are using HP Apache 2.0.x. then as root user, enter the following command:
`/opt/hpws/apache/bin/apachectl stop`
- Verify that all httpd processes have stopped by entering the following command:
`ps -e | grep httpd`
- Install the suite using the HP SW Depot Web Release:
[software.hp.com/](#) - Featured Products- HP-UX Apache-based Web Server. OR
[software.hp.com/](#) search for "HP Apache-based Web Server". The latest versions are always available online from the HP SW Depot.

You can also install using the HP-UX 11 iv2 or v3 Application Release CDs (when available).

2.3 Running HP-UX WSS 2.x and HP-UX WSS 3.x on a single system

2.3.1 Running the server on a single system consecutively

No additional steps are required if you have installed the HP-UX WSS 3.x on a system that already has HP-UX WSS 2.x. Both of them can coexist on a single system. However, because they use the same port assignments, they cannot be run at the same time without conflicting with each other. You could run both the versions of HP-UX WSS on the same machine by following the steps mentioned in the section 2.3.2 below.

2.3.2 Running the server on a single system concurrently

In order to run both Apache 2.2.x and Apache 2.0.x at the same time, you would have to change the ports on which they get executed so that the two Apache versions do not conflict with each other. By default both these versions use the same port. Here is how you can change the port number using ports.sh.

The steps for changing the port number are described below. The steps use Apache 2.2.x as example. Enter the following ports.sh command:

```
/opt/hpws22/util/ports.sh
```

The following output is displayed which shows information about the server configuration files:

```
Apache installed at /opt/hpws22/apache
Tomcat installed at /opt/hpws22/tomcat
Webmin installed at /opt/hpws22/webmin
```

Default locations of configuration files are displayed as:

```
Apache: /opt/hpws22/apache/conf/httpd.
Apache (SSL) : /opt/hpws22/apache/conf/extra/ssl.conf
LDAP: /opt/hpws22/apache/conf/ldap.
Tomcat: /opt/hpws22/tomcat/conf/server.
mod_jk: /opt/hpws22/apache/conf/mod_jk.conf
mod_jk: /opt/hpws22/apache/conf/workers.properties
Webmin: /opt/hpws22/webmin/conf/miniserv.conf
```

The following ports have been identified as used for a server:

```
HTTP port: 80
HTTPS port: 443
Tomcat ports: 8005 8081 8009
Webmin port: 10000
LDAP port: 389
```

Go to each file and manually change the port numbers. For example:

```
HTTP port: 8080
HTTPS port: 8443 (note 1)
Tomcat ports: 8105,8181,8109
Webmin port: 10100
LDAP port: 389 (note 2)
```

Notes

1. Your SSL URL must be in the <https://yourserver.com:8443> form because you are no longer using the standard SSL port.
2. The LDAP port does not change because it is the LDAP server's port. The HP Apache-based Web Server or HP-UX Apache-based Web Server is an LDAP client.

2.4 Migrating to HP-UX WSS 3.x by modifying httpd.conf

Migration methods mentioned below in section 2.4.1 and section 2.4.2 by modifying the “httpd.conf” file are based on opposite philosophies. First method edits the new configuration files to correspond to your needs, while second method edits copies of your old files.

2.4.1 Migrating to HP-UX WSS 3.x using new 2.2.x configuration files as base.

1. Save a copy of `/opt/hpws22/apache/conf/httpd.conf`.
2. Find the differences between the configuration files. For example:

```
diff /opt/hpws/apache/conf/httpd.conf /opt/hpws22/apache/conf/httpd.conf
```
3. Edit the `/opt/hpws22/apache/conf/httpd.conf` file based on differences.

2.4.2 Migrating to HP-UX WSS 3.x using old 2.0.x configuration files as base.

1. Save a copy of `/opt/hpws22/apache/conf/httpd.conf`
2. Copy your 2.0 httpd.conf file from directory `/opt/hpws22/apache/conf/` to `/opt/hpws22/apache/conf/httpd.conf`
3. Find the differences between the old and new configuration files.
4. Edit `/opt/hpws22/apache/conf/httpd.conf` based on the differences.

2.5 Starting Apache

To start Apache as root user, enter the following command:

```
/opt/hpws22/apache/bin/apachectl start
```

2.6 Verifying Apache Installation

To verify the installation, enter the following URL in the address field of a web browser:

<http://yourserver.com>

3 Getting More Information

The HP Apache-based Web Server or HP-UX Web Server Suite is built on the open source Apache HTTP Server software developed by the Apache Software Foundation (ASF) with additional open source components and HP proprietary content integrated and bundled by HP.

The following table lists resources for HP Apache-based Web Server or HP-UX Web Server Suite. For the latest HP Apache-based Web Server or HP-UX Web Server Suite information, see www.hp.com/go/webserver.

HP Apache-based Web Server or HP-UX Web Server Suite Resources

| Resources | Location |
|--|--|
| HP Apache-based Web Server | www.hp.com/products1/unix/webserver/apache/index.html |
| HP Apache-based Web Server | www.hp.com/go/webserver Click "downloads" |
| HP Apache or HP-UX Web Server | software.hp.com/ Search for "IPv6" |
| HP Developer and Solution Partner Portal | www.hp.com/ Search for "HP Apache-based Web Server" |

Integrated Applications

| Resources | Location |
|---|--|
| HP-UX Workload Manager | www.hp.com/go/wlm |
| BEA Weblogic connector to Apache (mod_wl) | www.bea.com |
| BroadVision connector to Apache (mod_bv) | www.broadvision.com |

The following table lists general information about Apache and the open source add-on products bundled by HP into the HP Apache-based Web Server or HP-UX Web Server Suite.

Apache Open Source Resources

| Resources | Location |
|----------------------------------|--|
| General | |
| Apache HTTP Web Server | httpd.apache.org/ |
| Apache Software Foundation (ASF) | www.apache.org/ |
| Apache 2.0 User's Guide | httpd.apache.org/docs/2.0 |
| Apache 2.2 User's Guide | httpd.apache.org/docs/2.2 |
| Developer resources | httpd.apache.org/dev/ |
| IPv6 | |
| IPv6 Home Page | www.ipv6.com |
| LDAP authentication | |
| OpenLDAP | www.openldap.org/ |
| auth_ldap | www.rudedog.org/auth_ldap |
| Perl | |
| Perl Interpreter | www.software.hp.com/ , search for "Perl v.5.8.8" |

| Resources | Location |
|--|---|
| General information on the mod_perl module | perl.apache.org/ |
| PHP | |
| PHP User's Guide | www.php.net/docs.php |
| General information on PHP | www.php.net |
| Servlets | |
| Tomcat User's Guide | http://tomcat.apache.org/tomcat-5.5-doc/index.html |
| SSL | |
| OpenSSL User's Guide | www.openssl.org/docs/ |
| mod_ssl User's Guide | www.modssl.org/docs |
| WebDAV | |
| webDAV Home Page | www.webdav.org/ |
| Webmin | |
| Webmin User's Guide | http://www.webmin.com/docs.html |
| Webmin Home Page | www.webmin.com/ |

4 New and Changed Features in HP-UX Web Server Suite

This section contains an overview of the new and changed features in HP-UX Web Server Suite.

4.1 File Location Differences between HP Web Server Suite 2.x and HP-UX Web Server Suite 3.x

The HP Apache 2.0.x files are located in `/opt/hpws/apache` directory.

The HP Apache 2.2.x files are located in `/opt/hpws22/apache` directory.

4.2 Version and Module Numbers

Version Numbers of HP Apache and HP-UX Web Server Suite Components

| Component | HP-UX Web Server Suite 2.x and HP-UX 11i Version 2 and later (PA-RISC & IPF) | HP-UX Web Server Suite 3.x on HP-UX 11.0/11 i and 11i Version 1.5 and later (PA-RISC & IPF) |
|----------------------------|--|---|
| Apache Web Server | 2.0.59 | 2.2.15 |
| OpenSSL | 0.9.7m | 0.9.8n |
| mod_ssl | A standard module of ASF Apache | A standard module of ASF Apache |
| BSAFE ® rypto-C | PA 5.2/IPF 5.2.1 | PA 5.2/IPF 5.2.1 |
| Tomcat Servlet Container | 5.5.23 | 5.5.29 |
| Apache Connector to Tomcat | mod_jk | mod_jk |
| modjk | 2.0.5 | 2.0.5 |
| mod_perl | 1.99.16 | 1.99.16 |
| PHP | 5.2.6 | 5.2.13 |
| auth_ldap | 1.54 | 1.54 |
| OpenLDAP SDK | 2.1.22 | 2.1.22 |
| Webmin | 1.070 | 1.070 |
| Xalan | 2.5.1 | Not available |
| Batik | 1.5 | Not available |
| FOP | 0.20.5 | Not available |
| Cocoon | 2.0.4 | Not available |

Note: The version numbers in the preceding table are correct for the HP Apache-based Web Server 2.0.26.06 and HP-UX Web Server Suite 3.0. For later releases, see the Release Notes in the documentation directory, or on the Software Depot website: software.hp.com/ - Featured Products - HP-UX Apache-based Web Server or www.hp.com/go/webserver- Click “downloads”.

4.3 Summary of New Features in the HP-UX Web Server Suite 3.x

Following is a summary of the new features in the HP-UX Web Server Suite 3.x.

4.3.1 Core Enhancements:

Authn/Authz

The bundled authentication and authorization modules have been refactored. The new [mod_authn_alias](#) module can greatly simplify certain authentication configurations. For more information about how these changes affects users and module writers, see [module name changes](#), and [the developer changes](#)

Caching

[mod_cache](#), [mod_disk_cache](#), and [mod_mem_cache](#) have undergone a lot of changes, and are now considered production-quality. [htcacheclean](#) has been introduced to clean up [mod_disk_cache](#) setups.

Configuration

The default configuration layout is simplified and modularised. Configuration snippets which can be used to enable commonly-used features are now bundled with Apache, and can be easily added to the main server config.

Graceful stop

The [prefork](#), [worker](#) and [event](#) MPMs now allow [httpd](#) to be shutdown gracefully via the [graceful-stop](#) signal. The [GracefulShutdownTimeout](#) directive has been added to specify an optional timeout, after which [httpd](#) will terminate regardless of the status of any requests being served.

Proxying

The new [mod_proxy_balancer](#) module provides load balancing services for [mod_proxy](#). The new [mod_proxy_ajp](#) module adds support for the Apache JServ Protocol version 1.3 used by [Apache Tomcat](#).

Regular Expression Library Updated

Version 5.0 of the [Perl Compatible Regular Expression Library](#) (PCRE) is now included. [httpd](#) can be configured to use a system installation of PCRE by passing the `--with-pcre` flag to configure.

Smart Filtering

[mod_filter](#) introduces dynamic configuration to the output filter chain. It enables filters to be conditionally inserted, based on any Request or Response header or environment variable, and dispenses with the more problematic dependencies and ordering problems in the 2.0 architecture.

Large File Support

[httpd](#) is now built with support for files larger than 2GB on modern 32-bit Unix systems. Support for handling >2GB request bodies has also been added.

Event MPM

The [event](#) MPM uses a separate thread to handle Keep Alive requests and accepting connections. Keep Alive requests have traditionally required [httpd](#) to dedicate a worker to handle it. This dedicated worker could not be used again until the Keep Alive timeout was reached.

SQL Database Support

`mod_dbd`, together with the `apr_dbd` framework, brings direct SQL support to modules that need it. Supports connection pooling in threaded MPMs.

4.3.2 Module Enhancements:

Modules in the “/opt/hpws22/apache/modules” directory have been renamed and offer better support for digest authentication. For example, `mod_auth` is now split into `mod_auth_basic` and `mod_authn_file`; `mod_auth_dbm` is now called `mod_authn_dbm`; `mod_access` is renamed to `mod_authz_host`. There is also a new `mod_authn_alias` module for simplifying certain authentication configurations.

`mod_authnz_ldap`

This module is a port of the 2.0 `mod_auth_ldap` module to the 2.2 Authn/Authz framework. New features include using LDAP attribute values and complicated search filters in the `Require` directive.

`mod_authz_owner`

A new module that authorizes access to files based on the owner of the file on the file system.

`mod_version`

A new module that allows configuration blocks to be enabled based on the version number of the running server.

`mod_info`

Added a new `?config` argument which will show the configuration directives as parsed by Apache, including their file name and line number. The module also shows the order of all request hooks and additional build information, similar to `httpd -V`.

`mod_ssl`

Added a support for [RFC 2817](#), which allows connections to upgrade from clear text to TLS encryption.

`mod_imagemap`

`mod_imap` is renamed to `mod_imagemap` to avoid user confusion.

4.3.3. Program Enhancements:

`httpd`

A new command line option `-M` is added that lists all modules that are loaded based on the current configuration. Unlike the `-l` option, this list includes DSOs loaded via `mod_so`.

`htt2dbm`

A new program used to generate dbm files from text input, for use in `RewriteMap` with the `dbm` map type.

4.3.4 Module Developer Changes:

APR 1.0 API

Apache 2.2 uses the APR 1.0 API. All deprecated functions and symbols have been removed from APR and APR-Util. For details, see the [APR Website](#).

Authn/Authz

The bundled authentication and authorization modules have been renamed along the following lines:

- `mod_auth_*` -> Modules that implement an HTTP authentication mechanism
- `mod_authn_*` -> Modules that provide a backend authentication provider
- `mod_authz_*` -> Modules that implement authorization (or access)
- `mod_authnz_*` -> Modules that implements both authentication & authorization

There is a new authentication backend provider scheme which greatly eases the construction of new authentication backends.

Connection Error Logging

A new function, `ap_log_cerror` has been added to log errors that occur with the client's connection. When logged, the message includes the client IP address.

Test Configuration Hook Added

A new hook, `test_config` has been added to aid modules that want to execute special code only when the user passes `-t` to [httpd](#).

Set Threaded MPM's Stacksize

A new directive, `ThreadStackSize` has been added to set the stack size on all threaded MPMs. This is required for some third-party modules on platforms with small default thread stack size.

Protocol handling for output filters

In the past, every filter has been responsible for ensuring that it generates the correct response headers where it affects them. Filters can now delegate common protocol management to `mod_filter`, using the `ap_register_output_filter_protocol` or `ap_filter_protocol` calls.

Monitor hook added

Monitor hook enables modules to run regular/scheduled jobs in the parent (root) process.

Regular expression API changes

The `pcreposix.h` header is no longer available; it is replaced by the new `ap_regex.h` header. The POSIX.2 `regex.h` implementation exposed by the old header is now available under the `ap_` namespace from `ap_regex.h`. Calls to `regcomp`, `regexexec` and so on can be replaced by calls to `ap_regcomp`, `ap_regexexec`.

DBD Framework (SQL Database API)

With Apache 1.x and 2.0, modules that required an SQL backend had to take responsibility for managing it themselves. Apart from reinventing the wheel, this can be very inefficient, for example when several modules each maintain their own connections.

Apache 2.1 and later provides the `ap_dbd` API for managing database connections (including optimised strategies for threaded and unthreaded MPMs), while APR 1.2 and later provides the `apr_dbd` API for interacting with the database.

New modules **MUST** now use these APIs for all SQL database operations. Existing applications **MUST** be upgraded to use it where feasible, either transparently or as a recommended option to their users.

The Apache product is built with options that provide maximum flexibility to allow enabling of new modules or disabling of existing modules. The modules included by default as shared objects with the HP-UX Apache-based Web Server are listed below. These modules are located in the `/opt/hpws22/apache/modules/` directory.

For a detailed description of the standard Apache modules, see <http://httpd.apache.org/docs/2.2/mod/>

For more information about new and changed features included in each HP-UX Web Server Suite release, see the release notes for each release on the web site www.hp.com/go/webserver

For more information about Apache 2.2, go to:

<http://httpd.apache.org/docs/2.2>

Table 4.3.1 : Components & Features of Apache and HP-UX Web Server Suite

| Components & Features | Apache 2.0 from ASF ¹ | HP Apache 2.0.x | Apache 2.2 from ASF ¹ | HP-UX Web Server Suite |
|---|----------------------------------|------------------------|----------------------------------|------------------------------|
| | | PA/IPF | | PA / IPF ² |
| Latest HP Apache available on HP SW Depot (Oct 2010). | | 2.0.59 | | 2.2.15 |
| Apache Web Server | 2.0.63 | 2.0.59 | 2.2.16 | 2.2.15 |
| SuEXEC | Yes | Yes | Yes | Yes |
| IPv6** | Yes | PA only | Yes | PA only |
| *Auto-restart Apache, Tomcat, or Webmin | | Yes | | Yes |
| *Shared Memory Caching | | apr_shm | | apr_shm |
| *Support Apache modules written in C++ | | Yes | | Yes |
| *altroot.sh | | | | Yes |
| *cache_util.sh | | | | Yes |
| *ports.sh | | | | Yes |
| Security | | | | |
| mod_ssl | | Built-in | Built-in | Built-in |
| OpenSSL | | 0.9.7m | | 0.9.8n |
| auth_ldap | | 1.54 | | 1.54 |
| *Chroot | | Yes | | Yes |
| *Certmig | | PA only | | PA only |
| *test_certmig.sh | | | | PA only |
| *mkcert.sh | | Yes | | Yes |
| Scripting | | | | |
| mod perl | | 1.99_16 | | 1.99_16 |
| PHP | | 5.2.6 | | 5.2.13 |
| PHP with Oracle extension | | Yes | | Yes |
| Miscellaneous | | | | |
| mod_dav/mod_dav_fs | Yes | Yes | Yes | Yes |
| mod_proxy | Yes | Yes | Yes | Yes |
| mod_define | | | | |
| Java | | | | |
| Tomcat Servlet Container | | 5.5.23 | | 5.5.29 |
| Apache connector to Tomcat | | modjerv modjk 1.2.0 | | modjk 1.2.23 modjk2 2.0.4 |
| Apache JServ | | 1.1.1 | | |
| Administration | | | | |
| Webmin | | 1.070 | | 1.070 |

Notes:

1 "Apache from ASF" indicates that if you go to <http://httpd.apache.org> download, and build Apache yourself, these features/components would be included in the standard distribution.

2 PA-RISC binaries are 32-bit and IPF binaries are 64-bit.

* Indicates HP added feature. Not available in Open Source.

** IPv6 is only available on PA-RISC 11i (11.11) with IPv6 product (T1 306AA) installed and 11i Version 1.6 (11.23). because Apache is dependent on other products, such as Java and Perl, some components are not completely supported.

Note: The version numbers in the preceding table 4.3.1 are correct for the HP Apache-based Web Server 2.0.x and HP-UX Web Server Suite 3.x. For later releases, see the Release Notes in the documentation directory, or on the website: www.hp.com/go/webserver

5 Preparing for Installing HP-UX Web Server Suite 3.0

5.1 Hardware and Software Requirements

The HP-UX Web Server Suite runs on 11i Version 2 and later. There are a small number of required patches that affect functionality. These can be reviewed after installation. They are listed in the Admin Guides for each component, which can be found in the directory `/opt/hpws22/hp_docs`.

The following table shows the necessary hardware and software for installing and running the HP Apache or HP-UX Web Server Suite. These requirements must be met before beginning a migration.

Table 5.1.1 : Hardware and Software Requirements

| HP Apache-based Web Server Products | HP-UX Platform | Disk Space | mod_perl | Webmin | Java Servlets and JSPs |
|---|----------------------|------------|---------------------|--------------------|--|
| HP Apache-based Web Server versions 2.2.x | | | | | |
| v.2.2.15 PA-RISC product # B9415AA | HP-UX 11i2 and later | 150-200 MB | Perl v.5.8.8 | Perl 5 and greater | HP JDK 1.2.2.04 and higher (JDK 2.0 and higher recommended) JSDK 2.0 for ApacheJServ 2.0 servlets |
| v.2.2.15 IPF Itanium Processor Family (IPF) Pre-enabled for 64-bit Perl product # B9415AA | HP-UX 11i2 and later | 150-200 MB | 64-bit Perl for IPF | Perl 5 and greater | HP JDK 2.0.0 for IPF and higher JSDK 2.0 for ApacheJServ 2.0 servlets |

5.2 Disk Space Requirements

350MB of disk space is required to install the entire HP-UX Web Server Suite. Installed separately, each product uses:

| | |
|-----------------------------------|--------|
| HP-UX Apache-based Web Server | 150 MB |
| HP-UX Tomcat-based Servlet Engine | 20 MB |
| HP-UX Webmin-based Admin | 17 MB |

5.3 Perl Requirements

Perl is needed when you use perl scripts, `mod_perl`, or `Webmin`. The Release Notes bundled with the product describe how to configure `mod_perl` and `Webmin`.

`apxs` is a utility perl script provided by Apache for compiling and installing modules. HP Apache-based Web Server 2.0.x for IPF expects perl to be at `/usr/contrib/Q4/bin`. All other versions expect Perl to be at `/opt/perl/bin/perl`.

The `mod_perl` module is an add-on feature that is compiled into HP Apache or HP-UX Apache-based Web Server but is not configured by default. `mod_perl` enables Perl CGI to run faster and allows Apache add-on modules to be written in Perl.

The `Webmin` tool is the web-based GUI administrator for HP Apache or HP-UX Web Server Suite. The `Webmin` tool requires Perl version 5.002 and later; HP-UX Web Server Suite `mod_perl` requires Perl v 5.8.8. Therefore, HP recommends using Perl V5.8.8.

On IPF, Apache 2.x is a native 64-bit application. Its `mod_perl` modules require respective 64-bit perl libraries v 5.8.8.

To download Perl 5.8.8, go to HP Software Depot at software.hp.com and search for “Perl v.5.8.8”.

5.4 Java Development Kit (JDK) Requirements

As part of its distribution, the HP Apache-based Web Server or HP-UX Web Server Suite includes a servlet and a JSP container. Apache 2.0.x bundled Tomcat and JServ; the HP-UX Web Server Suite bundles only Tomcat (JServ is being phased out). If you want to use a servlet/JSP container, you must have HP-UX Java Developer's Kit (JDK) release 1.2.2.04 or later. However, it is recommended that you use version 2.0.0.2 or later.

The latest versions of Java can be downloaded from: www.hp.com/go/java.

The IPv6 version of the HP-UX Web Server Suite requires JDK 1.4 only if your Tomcat servlets or JSPs use IPv6 addresses. For example, in many cases Apache handles the long IPv6 addresses and Tomcat is insulated from them. In this situation, the earlier version of the JDK is sufficient. In other words, if you use Java classes that require IPv6 support, JDK 1.4 is required. If you use Java classes without reference to IP addresses, the earlier JDK is adequate.

6 Installing HP-UX Web Server Suite

This section describes two methods of upgrading to the HP-UX Web Server Suite. Choose the procedure that is appropriate to your site environment.

- [Installing HP-UX Web Server Suite on a Server, where HP-UX WSS 2.x is Not Running](#)
Choose this method if you need to make the web server you are upgrading unavailable while installing the HP-UX Web Server Suite.
- [Installing HP-UX Web Server Suite on a Server Concurrently Running HP-UX WSS 2.x](#)
Choose this method if you need to have HP Apache 2.0.x continuously running on the server you are upgrading to the HP-UX Web Server Suite.

6.1 Installing HP-UX Web Server Suite 3.x on a Server, where HP-UX WSS 2.x is not Running

Step 1: Preparing the Web Server Environment

Prepare the web server environment if not done. For more information, see [Preparing for Installing HP-UX Web Server Suite](#)

Note: Remember to backup your system

Step 2: Stopping HP Apache 2.0.x

Before you install `hpws22` (which uses default ports 80 and 443), ensure that HP Apache Version 2.0.x (which uses the same default ports) is stopped. This ensures that there will be no conflict in port numbers between the two versions of HP Apache.

To stop Apache, Tomcat and Webmin, as root user, enter the following commands:

```
/opt/hpws/apache/bin/apachectl stop
/opt/hpws/tomcat/bin/shutdown.sh
/opt/hpws/apache/webmin/webmin-init stop
```

Step 3: Performing the Installation

The HP-UX Web Server Suite product bundle is part of HP-UX. To install the HP-UX Web Server Suite 3.x, use one of the following methods:

- Install using the HP SW Depot Web Release,
- Install using the HP-UX 11i v2/v3 Application Release CDs (when available).

Step 4: Startup after Installation

To start Apache after installation, enter the following command:

```
/opt/hpws22/apache/bin/apachectl start
```

Step 5: Perform a Quick Check of the HP-UX Web Server Suite Installation

Access the `index.html` page. In the browser address bar, enter the following:

<http://yourserver.com>

The HP-UX Apache-based Web Server home page appears

Execute the test CGI script. In the browser address bar, enter the following:

<http://yourserver.com/cgi-bin/test-cgi>

Several lines of text listing the environment variables appear. The first line must be: `CGI/1.0`

```
test script report:
```

Step 6: Stop HP-UX Apache-based Web Server

Stop HP-UX Apache-based Web Server, if it is running, before continuing with the migration process. As root user, enter the following command:

```
/opt/hpws/apache/bin/apachectl stop
```

Step 7: Migrating to an HP-UX Web Server Suite Environment

Configure your HP-UX Web Server Suite to retain any customizations you have made to your HP Apache-based Web Server 2.0.x environment. For more information, see [Migrating Your Apache Configuration from 2.0.x to HP-UX Apache-based Web Server 3.x](#).

You can also refer the release documents that are bundled with the product to familiarize yourself with the HP-UX Web Server Suite's capability. You can access the administrator guides, user guides, and configuration information, at the following location:

```
/opt/hpws22/hp_doc
```

6.2 Installing HP-UX Apache-based Web Server on a Server Concurrently Running HP-UX WSS 2.0

The HP Apache 2.0.x and HP Apache 2.2.x can run simultaneously on the same machine if they use different port numbers or use different IP addresses. Each web server has its own binary.

Both HP Apache-based Web Server 2.0.x and HP Apache 2.2.x use port 80 and port 443 (SSL) by default. If you want to maximize availability during the migration by keeping HP Apache 2.0.x running on the server you are upgrading, you can temporarily change ports using the following procedure.

Step 1: Preparing the Web Server Environment

Prepare the web server environment before starting the installation process. For more information, see [Preparing for Installing HP-UX Web Server Suite](#).

Note: Remember to backup your system.

Step 2: Performing the Installation

While HP Apache 2.0.x is running, perform the HP-UX Web Server Suite installation.

The HP-UX Web Server Suite product bundle is part of HP-UX. To install the HP-UX Web Server Suite, you can use one of the two methods listed below

- Install using the HP SW Depot Web Release.
- Install using the HP-UX 11i v2/v3 Application Release CDs (when available).

Step 3: Assigning Port Numbers

Modify the `httpd.conf` and the `httpd-ssl.conf` files to assign non-default ports in the HP-UX Web Server Suite.

Default Port Assignments in HP-UX Web Server Suite:

To check that the proposed new port assignments are not already being used, enter the following command:

```
netstat -a | egrep "8080|8443"
```

Select other unused port numbers, if necessary.

In `/opt/hpws22/apache/conf/httpd.conf/opt/hpws/apache/conf/httpd.conf`, the port is configured by: `Listen 80`

To eliminate the conflict, change it to: `Listen 8080`

In `/opt/hpws22/apache/conf/extra/httpd-ssl.conf` the ports are configured by:

```
Listen 443
ServerName www.yourserver.com: 443 VirtualHost
<www.yourserver.com: 443>
```

To eliminate conflicts, change them to:

```
Listen 8443
ServerName www.yourserver.com: 8443 VirtualHost
<www.yourserver.com: 8443>
```

Step 4: Startup After Changing Port Assignments

Start HP-UX Web Server Suite by entering as root with the following change:

Uncomment

```
#Include conf/extra/httpd-ssl.conf line in httpd.conf
```

```
/opt/hpws22/apache/bin/apachectl start
```

Step 5: Perform a Quick Check of the HP-UX Web Server Suite Installation

Access the `index.html` page. In the browser address bar, enter the following:

<http://yourserver.com:8080>

The HP-UX Apache-based Web Server home page appears.

Execute the test CGI script. In the browser address bar, enter the following:

<http://yourserver.com:8080/cgi-bin/test-cgi>

Several lines of text listing environment variables appear. The first line must be: `CGI/1.0 test script report:`

To access the `index.html` page securely, enter the following:

<https://yourserver.com:8443>

The HP-UX Apache home page appears.

Step 6: Stop HP-UX Apache

Stop the HP-UX Web Server Suite, if it is running, before continuing with the migration process. As root, enter the following:

```
/opt/hpws22/apache/bin/apachectl stop
```

Step 7: Migrating to an HP-UX Web Server Suite Environment

Configure your HP-UX Web Server Suite to retain any customizations you have made to your HP Apache-based Web Server 2.0.x environment. For more information, see [Migrating Your HP Apache Configuration from 2.0.x to HP-UX Web Server Suite 3.0.x](#).

Also, see the release documents that are bundled with the product to familiarize yourself with the HP-UX Web Server Suite's capability. For administrator guides, user guides, and configuration information, see:

```
/opt/hpws22/hp_docs
```

7 Migrating Apache Configuration from HP Web Server Suite 2.x to HP-UX Web Server Suite 3.x

During the installation of HP-UX Web Server Suite, the new default `httpd.conf` file that configures the operation of HP-UX Web Server Suite is placed in `/opt/hpws22/apache/conf/httpd.conf`. Ensure that this new file incorporates any customizations that you made to the 2.0.x version of the file `/opt/hpws/apache/conf/httpd.conf`.

You can accomplish these migration changes by two methods. You can edit your old 2.0.x `httpd.conf` file to conform to the HP-UX Web Server Suite requirements (usually the most convenient method). If you use this method, ensure that the updated `httpd.conf` file is placed in `/opt/hpws22/apache/conf`. As an alternative method, you can transfer your 2.0.x `httpd.conf` file customizations to the new HP-UX Web Server Suite version of the `httpd.conf` file. For more information, see [Quick Guide to Migration Solutions](#).

The following sections list the features that are new, changed, and deleted in HP-UX Web Server Suite, and the changes you may need to make.

You must follow the suggested order of migration because some things will not work unless previous steps have been performed.

In order to assist folks upgrading, we maintain a document describing information critical to existing Apache users. These are intended to be brief notes, and you can find more information in either the [New Features](#) document, or in the `src/CHANGES` file.

This document describes only the changes from 2.0 to 2.2. If you are upgrading from version 1.3, you should also consult the [1.3 to 2.0 upgrading document](#).

7.1 Compile-Time Configuration Changes:

The compilation process is very similar to the one used in version 2.0. Your old `configure` command line (as found in `build/config.nice` in the installed server directory) can be used in some cases. The most significant change required will be to account for changes in module names, in particular for the authentication and authorization modules. Some details of changes:

- `mod_imap` has been renamed to `mod_imagemap`
- `mod_auth` has been split up into `mod_auth_basic`, `mod_authn_file`, `mod_authz_user`, and `mod_authz_groupfile`
- `mod_access` has been renamed to `mod_authz_host`
- `mod_auth_ldap` has been renamed to `mod_authnz_ldap`
- Upgraded to require the APR 1.0 API.
- Updated bundled PCRE version to 5.0

7.2 Run-Time Configuration Changes:

Your existing version 2.0 config files and startup scripts can usually be used unchanged in version 2.2. Some small adjustments may be necessary for particular configurations as discussed below. In addition, if you dynamically load the standard modules using the [LoadModule](#) directive, then you will need to account for the module name changes mentioned above.

If you choose to use the new default configuration file for version 2.2, you will find that it has been greatly simplified by removing all but the most essential configuration settings. A set of example configuration settings for more advanced features is present in the `conf/extra/` directory of the installed server. Default configuration files are installed in the `conf/original` directory.

Some runtime configuration changes that you may notice:

- The `apachectl` option `startssl` is no longer available. To enable SSL support, you must edit `httpd.conf` to include the relevant `mod_ssl` directives and then use `apachectl start` to start the server. An example configuration to activate `mod_ssl` is included in `conf/extra/httpd-ssl.conf`.
- The default setting of `UseCanonicalName` is now `Off`. If you did not have this directive in your config file, you can add `UseCanonicalName On` to retain the old behavior.
- The module `mod_userdir` will no longer act on requests unless a `UserDir` directive specifying a directory name is present in the config file. To restore the old default behavior, place the directive `UserDir public_html` in your config file.
- The directive `AuthDigestFile` from `mod_auth_digest` has been merged with `AuthUserFile` and is now part of `mod_authn_file`.

7.3 Miscellaneous Changes:

The following modules which were experimental in Apache 2.0, are now standard modules:

- `mod_cache`
- `mod_disk_cache`
- `mod_mem_cache`
- `mod_charset_lite`
- `mod_dumpio`

7.4 Third Party Modules:

Many third-party modules designed for version 2.0 will work unchanged with the Apache HTTP Server version 2.2. But all modules must be recompiled before being loaded.