

Transitioning from Tru64 UNIX to HP-UX without upgrading PeopleSoft



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About this document

This technical document is one in a series of documents that can assist in planning and implementing a Tru64 UNIX® PeopleSoft® application transition. Its purpose is to supply technical information that will help in the transition from Tru64 UNIX to Itanium®-based HP-UX if your business requirements do not require a PeopleSoft upgrade and/or database upgrade. If a PeopleSoft upgrade is involved, please see the document *Transitioning from Tru64 UNIX to HP-UX while upgrading PeopleSoft*.

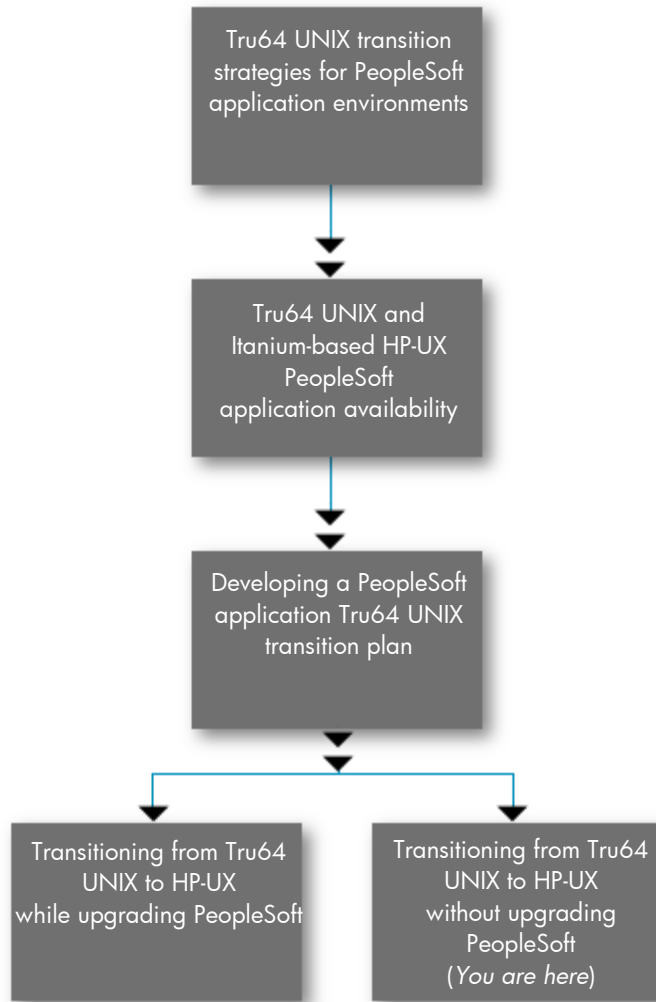
Note: This document refers to PeopleTools® 8.45 as the initial Itanium-based HP-UX release. As of the writing of this document, the PeopleTools release on Itanium-based HP-UX is expected from PeopleSoft in the second quarter 2004. The information in this document pertaining to PeopleTools 8.45 might change since this release was not final when this document was published.

[Figure 1](#) represents the documents that are relevant to each step in the upgrade process. Before you to proceed with your migration, you might want to review the background information in the documents *Tru64 UNIX transition strategies for PeopleSoft application environments* and *Tru64 UNIX and Itanium-based HP-UX PeopleSoft application availability*.

Before reading this document, make sure that you have:

- Reviewed the document *Developing a PeopleSoft application Tru64 UNIX transition plan*
- Developed a transition plan
- Familiarized yourself with the installation of PeopleSoft software, HP-UX, and an RDBMS product
- Developed a working knowledge of the PeopleSoft architecture and taken PeopleSoft training courses pertaining to PeopleSoft software installation and data migration
- Developed a working knowledge of HP-UX system administration and RDBMS database administration

Figure 1. Transition strategy documents



Introduction

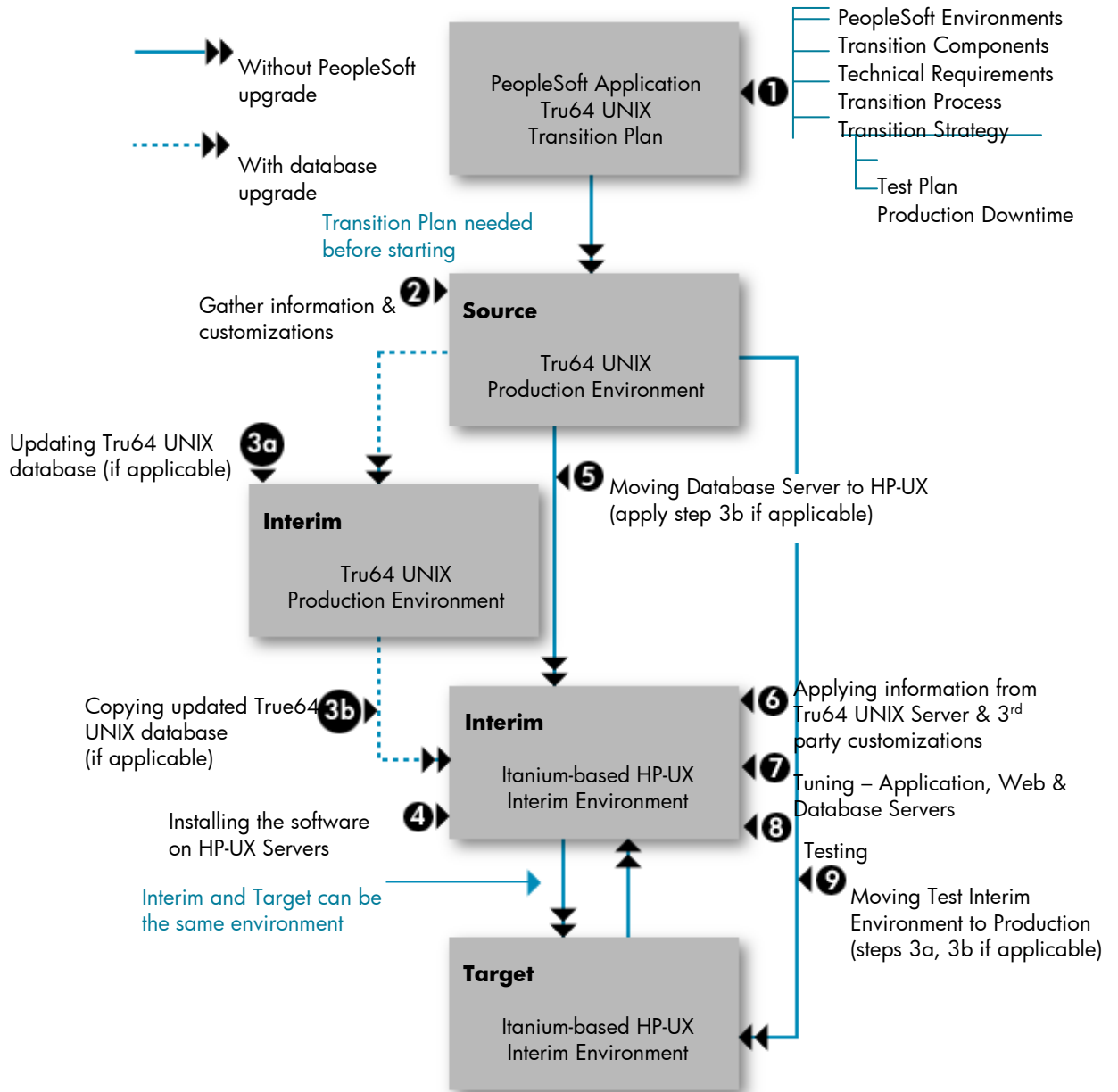
This technical document presents the implementation steps needed for a Tru64 UNIX PeopleSoft application transition to Itanium-based HP-UX without upgrading PeopleSoft, with or without a database upgrade. It summarizes some of the important concepts in a PeopleSoft application Tru64 transition plan and then discusses in detail the concepts of a *test plan* and *production downtime*. The steps needed to transition all PeopleSoft servers to Itanium-based HP-UX are presented, followed by a discussion of testing and tuning these servers and moving them to production.

An overview of the implementation steps described in this document is shown in [Figure 2](#). The Tru64 UNIX interim environment is only used to upgrade the database before a platform change. The Itanium-based HP-UX interim environment is used for testing and tuning. This environment can then function as your production environment when testing and tuning are completed.

Since this document only covers the transition without a PeopleSoft upgrade, the PeopleSoft environment being transitioned must be supported on Itanium-based HP-UX. That is, your current environment must have the following:

- PeopleTools minimum version level of 8.45
- PeopleTools minimum version level of 8.42 for database server implementation only
- PeopleSoft application that supports at least PeopleTools 8.45 (8.42 for Database server implementation only)

Figure 2. Tru64 UNIX transition implementation concepts without upgrading PeopleSoft, with or without a database upgrade



Tru64 UNIX transition plan

Developing a PeopleSoft application Tru64 UNIX transition plan discussed in detail the important transition concepts that you should include in your transition plan. These concepts are:

- *PeopleSoft environments* – Identifying the demo, development, test, and production environments, and the roles of each environment in the transition. You should use a test environment similar to the transition production environment for testing and tuning.
 - *Transition components* – Identifying which PeopleSoft components (environment, PeopleTools, application) need transitioning and/or upgrading
 - *Technical requirements* – Verifying the PeopleSoft support for each PeopleSoft component on Itanium-based HP-UX
 - *Transition process* – Identifying each upgrade and/or transition path
 - *Transition strategy* – Identifying the overall strategy for the transition and deciding whether to implement a partial (mixed environment) or full (all HP-UX environment) transition implementation
- In addition, you should include the following general project plan activities in your transition plan:

- *Staff and equipment resources* – The staff and equipment you will use for the transition with their schedule
- *Resource assistance* – The help you might need (for example, HP and PeopleSoft consultants)
- *Contingency plan* – Backup plan for failures and not meeting your schedule
- *Test plan* – Identifying the tests and methods you will use to test the newly created PeopleSoft environment
- *Allowable production downtime* – Identifying the amount of downtime that can be tolerated when moving the environment to production

This document will discuss the last two concepts.

Test plan

Your test plan should be composed of an environment and strategy that simulates the activity of your PeopleSoft application production environment. It should also include a schedule for the staff that will implement the test plan.

Test Environment

You should consider copying your production database and simulating the production load for your tests. An interim testing environment is recommended, because tuning might be an issue when changing to a new hardware platform. The interim testing environment should be similar to the production environment.

If the Tru64 UNIX transition plan involves a database upgrade from an earlier version of Oracle that is not supported on Itanium, it is recommended that the database be upgraded before moving it to another platform. You can accomplish this by creating another interim Tru64 UNIX environment for the database upgrade. A maintenance database upgrade (for example Oracle 9.2.0.1 to Oracle 9.2.0.3) is not considered a database upgrade in these series of papers.

If implementing a mixed environment, the test environment should have the same mixtures of Tru64 UNIX and HP-UX systems at all PeopleSoft tier levels. You might want to use your Tru64 UNIX demo, development, or test system to create a test environment for the PeopleSoft tiers that are not being transitioned.

Staffing

Identify the staff and consultants that will be used for testing and create a staffing schedule.

Test Strategy

You should also define the following in the test plan:

- Type of tests needed (for example, system, performance, acceptance, and so on)
- Method of testing (manual or with scripts)
- Number of simulated users

The PeopleSoft-published red paper *Applying PeopleTools Maintenance* (Testing section) might help you determine some of the tests required for testing a PeopleSoft application. It also documents the minimum recommended testing when applying a PeopleTools minor release for each different business process. The document is available on the PeopleSoft Customer Connection website:

<http://www.peoplesoft.com>

The objective of a test strategy is to perform tests that simulate your production environment. You might want to check the performance of your tests and perform scalability tests. Make sure that you test the functionality of all your critical business processes and do not forget to test any customizations that might have implemented.

Allowable production downtime

Refer to the following sources for ways to minimize downtime when moving an environment to production:

- PeopleSoft red paper *Applying PeopleTools Maintenance*, “Moving Maintenance to Production” section. This paper presents techniques for phasing in maintenance.
- Oracle MetaLink website provides notes that customers have posted on this subject:
<http://www.oracle.com>
- HP white paper *Oracle Database Migration: Tru64 UNIX to HP-UX (PA-RISC and Itanium- or Itanium 2-based)*. This paper discusses different Oracle migration methods and is available in the Packaged applications transition module:
<http://www.hp.com/go/transition-modules/>

Note: the Transition Modules are packaged in a downloadable Zip file for use by HP’s Tru64 UNIX customers. The Zip file is encrypted and HP’s Tru64 UNIX customers will need to register for a password key.

Transition environment setup

The overall steps involved in setting up a transition environment and moving it to production are outlined in [Figure 2](#). You must set up each PeopleSoft server (that is, Database, Batch, Application, and Web) that is being transitioned to Itanium-based HP-UX before it can be tuned and tested. Use the steps listed in [Table 1](#) to transition a PeopleSoft server (without upgrading PeopleSoft) to Itanium-based HP-UX. While you must repeat the steps for each transitioned PeopleSoft server, not all the steps may apply (Table 1 indicates which server type each step applies to).

Table 1. Transition environment setup steps on PeopleSoft server types

Transition environment setup steps	Database	Batch	Application	Web
Gathering information and customizations	X	X	X	X
Updating the Tru64 UNIX database	Z			
Installing the software on Itanium-based HP-UX servers				
* Operating system and patches	Y	Y	Y	Y
* RDBMS and PeopleSoft third-party products	Y	Y	Y	Y
* PeopleSoft	Y	Y	Y	Y
Moving the PeopleSoft Database server to HP-UX				
* Creating the database	Y			
* Database connectivity	Y	Y	Y	
* Populating the database	Y			
* Update statistics	Y			
Applying information from Tru64 UNIX server and third-party customizations to HP-UX		Y	Y	
Tuning Database, Application, and Web Servers				
* Operating system parameters	Y	Y	Y	Y
* PeopleSoft configuration parameters	Y	Y	Y	Y
* Database configuration parameters	Y			
X = Tru64 UNIX server (production) Y = HP-UX server interim (production) Z = Tru64 UNIX DB server (interim)				

Gathering information and customizations

(This section applies to all PeopleSoft servers)

HP recommends that you gather certain information from the PeopleSoft server that is being transitioned. Consider performing the following activities:

- Determine whether your customizations can be applied to Itanium-based HP-UX.
- Examine certain PeopleSoft configuration files obtained from your Tru64 UNIX PeopleSoft server. They might be useful in the transition (for more information, see [Installing the software on Itanium-based HP-UX servers](#)).
- Monitor Tru64 UNIX performance metrics such as CPU, I/O, and memory for comparison with the new Itanium-based HP-UX server. The Tru64 UNIX `collect` utility can monitor these characteristics (for example, `collect -scdm`).
- Test the integrity of your current PeopleSoft environment by executing SQR scripts such as `DDDAUDIT`, `ALTER_AUDIT`, and `SYSAUDIT`. Those scripts will help maintain the integrity of your PeopleSoft data as you transition to the new environment.
- Take a census of your Tru64 UNIX source database if it is being transitioned. Make sure that you have a [database layout](#). Consider performing RDBMS statistics on your database so that you can compare the performance with your new Itanium-based HP-UX database.

Example: Oracle Script for finding your database layout

```
set linesize 78 pagesize 60
spool dblayout.lis
column      "Location"          format a45
column      "Tablespace Name"   format a15
column      "Size(K)"           format 999,999,990
break on "Tablespace Name" skip 1 nodup
compute sum of "Size(K)" on "Tablespace Name"

SELECT      tablespace_name "Tablespace Name",
            file_name      "Location",
            bytes/1024      "Size(K)"
from sys.dba_data_files
order by 1;

column      "Group"             format 999
column      "File Location"     format A45
column      "Size(K)"           format 999,999,990

break on "Group" skip 1 nodup

select      a.group#           "Group",
            b.member          "File Location",
            a.bytes/1024      "Size(K)"
from v$log a,
     v$logfile b
where a.group# = b.group#
order by 1,2;

column      "Segment Name"     format A15
column      "Tablespace"       format a15
column      "Initial(K)"       format 999,999,990
column      "Next(K)"          format 999,999,990
column      "Min Ext."         format 990
column      "Max Ext."         format 990
column      "Status"           format a7

select      segment_name       "Segment Name",
            tablespace_name    "Tablespace",
            initial_extent/1024 "Initial(K)",
            next_extent/1024   "Next(K)",
            min_extents        "Min Ext.",
            max_extents        "Max_Ext.",
            status              "Status"
from sys.dba_rollback_segs
order      by 2,1;

clear columns
column value format a70

select value
from v$parameter
where upper(name) like 'CONTROL_FILES';

spool off
```

Updating the Tru64 UNIX database

(This section applies to the PeopleSoft Database server)

It is recommended that you first update your database version on Tru64 UNIX to a database version that is supported on Itanium-based HP-UX before attempting to move your database to Itanium-based HP-UX. You should create a Tru64 UNIX interim environment for the database update, if this is required. The additional Tru64 UNIX interim environment that is needed before moving the database to Itanium-based HP-UX is shown in [Figure 2](#).

The steps to create a Tru64 UNIX interim environment and implement a database upgrade are as follows:

1. Install a version and patch level of Tru64 UNIX that is supported by the target RDBMS version (for example, Oracle 9.2.0.4).
2. Install your current RDBMS software.
3. Copy your Tru64 UNIX database. See [Moving the PeopleSoft Database server to HP-UX](#) for information on how to copy your Tru64 UNIX database.
4. Update your Tru64 UNIX database version by executing upgrade procedures from your RDBMS database vendor.

Installing the software on Itanium-based HP-UX servers

You must install new software on all PeopleSoft Servers (Database, Batch, Application, and Web) that are being transitioned. The new software may include:

- Operating system and patches
- RDBMS and PeopleSoft third-party products
- PeopleSoft

Operating system and patches

(This section applies to all PeopleSoft servers)

You must install the HP-UX version that is certified with your PeopleSoft version (including patches). Refer to the *HP-UX installation guide* for installing the operating system and patches. Your HP Enterprise sales representative or reseller can provide additional information regarding the different operating system configurations. The HP-UX Enterprise Operating Environment and Mission Critical Operating Environment offer a wide range of diagnostic and analysis tools that might be useful during your upgrade, and later on for the fully deployed systems.

Note: If you plan to have files greater than 2GB, you must use large file support for your file system. Check `/etc/fstab` or use a utility like `sam` to see if you are currently using this option.

RDBMS and PeopleSoft third-party products

(This section applies to all PeopleSoft servers)

You must install either the client or server version of the RDBMS software that you currently use on your Tru64 UNIX Database server (after upgrading your current Database server if necessary). In addition, you must install the RDBMS client version (or database connectivity software) on all PeopleSoft Application or Batch servers that use the PeopleSoft Physical Tier architecture. Use the Oracle `netca` program to create a local net service name for the PeopleSoft database instance for these HP-UX servers.

You must install the RDBMS server version on your new HP-UX PeopleSoft Database server. Refer to the RDBMS vendor installation guide for installation instructions.

If applicable, you must install PeopleSoft third-party products such as BEA Tuxedo and Jolt, Merant/Micro Focus Server Express, Verity, Java, and SQR (depending on the PeopleTools version) on the PeopleSoft Application or Batch servers. You might also need licenses for some of these products (for example, Sever Express). Refer to the PeopleTools installation guides (for example, *PeopleTools 8.45 Installation for Oracle*) for installation instructions on BEA Tuxedo and Jolt, SQR, and Verity. Refer to the vendor’s installation guide for instructions not mentioned in the PeopleTools installation guide.

Check your current java version by executing the Java `-version` command. Install a new version of Java if the Java version is not the proper version for installing PeopleSoft. Refer to the PeopleTools installation guide for the proper version of Java.

PeopleSoft requirements

(This section applies to all PeopleSoft servers)

The PeopleTools installation guides (for example, *PeopleTool 8.45 Installation for Oracle*) describe the procedure to install the PeopleSoft Database, Batch, Application, and Web servers.

Follow those instructions for each PeopleSoft server that is being transitioned. Also, follow the installation or supplemental installation guide for your PeopleSoft applications.

You might consider using certain PeopleSoft Servers parameters from your Tru64 UNIX PeopleSoft server configuration files in your HP-UX implementation. Compare the contents of these files with their HP-UX equivalents, and use the parameter values that will benefit your HP-UX implementation. See [Tuning Application, Web, and Database servers](#) for details about which parameters you should change. The names of the configuration files containing these parameters on each PeopleSoft server are listed in the following table.

Table 2. PeopleSoft server parameter configuration files

PeopleSoft server	Configuration files
Database	<ul style="list-style-type: none"> All database creation scripts from your Tru64 UNIX system (<code>\$PS_HOME/script/UNIX</code>) Oracle initialization file (<code>\$ORACLE_HOME/dbs/init\${ORACLE_SID}.ora</code>) Oracle network files (<code>tnsnames.ora</code>, <code>listener.ora</code>, <code>sqlnet.ora</code>) in <code>\$ORACLE_HOME/network/admin</code>
Batch	<ul style="list-style-type: none"> <code>psprcs.cfg</code> <code>tnsnames.ora</code> (for non-local Oracle connection)
Application	<ul style="list-style-type: none"> <code>psappsrv.cfg</code> <code>tnsnames.ora</code> (for non-local Oracle connection)
Web	PeopleTools (8.4x only) <ul style="list-style-type: none"> <code>config.xml</code> <code>configuration.properties</code> <code>setEnv.sh</code> <code>startPIA.sh</code> <p>Note: You may want to make sure that Java has adequate memory (the default is 64m) to operate on your new Itanium-based HP-UX web server. Changing the <code>JAVA_OPTIONS</code> in <code>setEnv.sh</code> will accomplish this task (for example, <code>JAVA_OPTIONS="-256m -256mx"</code>).</p>

Moving the PeopleSoft Database server to HP-UX

(This section applies to the PeopleSoft database server)

Moving the PeopleSoft Database server to Itanium-based HP-UX only involves copying your database, since the PeopleSoft Database server is composed only of a database and its connectivity software. You can use either a vendor-supplied RDBMS copy utility (for example, Oracle Export/Import) or the PeopleSoft `Data Mover` utility to copy your production database. HP recommends using a vendor-supplied RDBMS copy utility, as the PeopleSoft `Data Mover` might be slow.

The following section describes a method of copying a PeopleSoft database to Itanium-based HP-UX, using Oracle 9 Export/Import as an example.

Creating the database

On the Tru64 UNIX system, export your Tru64 UNIX database to a dump file using commands similar to the following:

```
$ORACLE_SID=test;export ORACLE_SID
$exp sysadm/sysadm compress=y buffer=1000000
    log=database_export.log file=database_export.dmp
```

where `sysadm` is the PeopleSoft database owner ID.

An example script for exporting an Oracle database with compression and piping is shown in Appendix A.

Note: You must export the updated database (Tru64 UNIX interim database) if a database upgrade is involved. If a large database is to be copied, you might want to consider alternative methods to the traditional Oracle Export/Import. See [Copying your production database](#) for more information.

Itanium-based HP-UX steps

Perform the following steps on your Itanium-based HP-UX database server in order to create a PeopleSoft database:

1. Copy the Oracle initialization file (`$ORACLE_HOME/dbs/xxx.ora`).
2. Use the Oracle `netca` program to create both a listener entry and a local net service name for the PeopleSoft database instance on the HP-UX server. You can also use the `netca` program on the other servers to update the service name configuration to reflect the shift to an HP-UX database server.

Note: If you have problems with Oracle connectivity, you might want to consider comparing the `listener.ora`, `sqlnet.ora`, and `tnsnames.ora` for your Tru64 UNIX servers.

3. If you have modified the PeopleSoft database creation scripts (`$PS_HOME/scripts/UNIX`) on your Tru64 UNIX database server, transfer those same modifications to the corresponding scripts on the HP-UX server.
4. Create your database as described in the PeopleTools installation guides (for example, *PeopleTools 8.45 Installation for Oracle* under "Creating a database manually on UNIX").

Note: When creating the Oracle database, the database name, character set, and PeopleSoft database owner ID should be the same as they were on Tru64 UNIX.

5. Execute the following scripts as documented in the PeopleTools installation guide:
 - `createdb.sql`
 - `utlspace.sql`
 - `rollback.sql`
 - `dbowner.sql`
 - ddl scripts for your application
 - `psroles.sql`
 - `psadmin.sql`
 - `connect.sql`

Database connectivity

(This section applies to PeopleSoft Database, Application, and Batch servers)

If the PeopleSoft Application and Batch Servers are not local to the PeopleSoft Database server, then verify that the database instance is available on those servers and that the connectivity software (for example, Oracle's listener process) is running properly. Proceed with the importation only after you have confirmed that the database is accessible via `sqlplus` or another simple connection program.

Populating the database

(This section applies to the PeopleSoft Database server)

Use the following steps to populate your PeopleSoft database with production data:

1. Import your production data into the PeopleSoft database:

```
$imp sysadm/sysadm ignore=n commit=y indexes=y
file=database_export.dmp log=database_import.log
fromuser=sysadm touser=sysadm
```

An example script for importing an Oracle database with uncompression and piping is shown in Appendix B. If you elect to use `gzip`, the default `gzip` for HP-UX 11v2 does not support large files (greater than 2GB). To obtain a new `gzip` (for example, `gzip-1.3.3`) binary, go to:

<http://hpx.cs.utah.edu>

Note: You must import the updated database (Tru64 UNIX interim database) if a database upgrade is involved. The Oracle Metalink website mentions some parameters that you can use with the import utility that may speed up the process. You might want to consider these parameters. If you change the PeopleSoft database owner ID, you must encrypt all PeopleSoft passwords. The encryption algorithm for PeopleSoft uses this ID for encrypting. To access the Oracle MetaLink website, go to:

<http://www.oracle.com>

2. Execute the following commands using PeopleSoft Data Mover in bootstrap mode:

```
insert into PS.PSDBOWNER values ('QEDMO', 'SYSADM');
grant select on PSSTATUS to people;
grant select on PSOPRDEFN to people;
grant select on PSACCESSPRFL to people;
```

Note: In this example, 'QEDMO' is the database name and 'SYSADM' is the PeopleSoft owner ID. You need to encrypt your PeopleSoft passwords during this Data Mover step if you changed the PeopleSoft owner ID.

Update statistics

(This section applies to the PeopleSoft Database server)

Update the Oracle database statistics by executing:

```
$PS_HOME/scripts/UNIX/updstats.sql, or  
exec dbms_stats.gather_schema_stats ('SYSADM',cascade=>true);
```

Applying information from the Tru64 UNIX server and third-party customizations to HP-UX

(This section applies to PeopleSoft Application and Batch servers)

If you developed any Cobol or SQR customizations, move these files to your new Itanium-based HP-UX Servers. Cobol customizations apply to both PeopleSoft Application and Batch servers. SQR customizations only apply to the PeopleSoft Batch server.

Tuning Application, Web, and Database servers

(This section applies to all PeopleSoft servers)

Tuning is very important for optimal performance of your PeopleSoft application. Each PeopleSoft server that is transitioned to Itanium-based HP-UX should be tuned. The amount of available memory, CPU, and I/O can affect bottlenecks that cause performance degradation. They should be monitored in both your test and production environments. You can use utilities like `GPM`, `glance`, `sar`, `vmstat`, and `iostat` to monitor these values.

The tunable parameters are:

- Operating system parameters
- PeopleSoft configuration parameters
- Database configuration parameters

Operating system parameters

(This section applies to all PeopleSoft servers)

The PeopleSoft application uses certain operating system parameters that you can adjust to give optimal performance. These kernel parameters can be categorized by:

- System-wide settings (for example, number of threads, processes, files)
- Process settings (for example, the size of process data and stack segments)
- IPC settings (for example, the size and number of System V messaging)
- Network settings (for example, the number of available TCP ports, which is proportional to the number of file descriptors, and “keep alive”)

In general, you need to tune system-wide and process setting parameters on all PeopleSoft servers. The IPC setting parameters are necessary for the PeopleSoft Application server, Batch server (PeopleTools 8.4x and above), and Database server. The network setting parameters are necessary for the PeopleSoft Web and Application servers. Any changes in the network settings parameters should be applied to all PeopleSoft Web and Application servers (both Tru64 UNIX and HP-UX).

You can get the HP-UX operating system parameters used in PeopleSoft application benchmarks from the HP PeopleSoft website:

<http://www.peoplesoft-hp.com/salestools/faq>

You can also find additional parameters in the red papers that PeopleSoft publishes.

PeopleSoft configuration parameters

(This section applies to all PeopleSoft servers)

PeopleSoft has published the red paper *Online Performance Configuration Guidelines for PeopleTools 8.4x* on its Customer Connection website:

<http://www.peoplesoft.com>

This paper identifies which PeopleSoft configuration parameters are tunable.

The [PeopleSoft requirements](#) section of this document recommended that you copy certain configuration files from your Tru64 UNIX PeopleSoft server to your new Itanium-based HP-UX PeopleSoft server. It then asked you to compare the contents of these files to their HP-UX equivalents. The configuration parameters that were different probably resulted from a tuning effort. The reasons for these parameter differences are discussed in these PeopleSoft red papers.

Database configuration parameters

(This section applies to the PeopleSoft Database server)

The differences in I/O disk layouts and kernel design of Tru64 UNIX and HP-UX can cause differences in optimal database parameters for database performance. You may want to consider executing an RDBMS statistical package (for example, Oracle `Statspack`) on your new Itanium-based HP-UX PeopleSoft Database server to make sure that it is tuned properly. You can also compare these results to those on your Tru64 UNIX Database server. The PeopleSoft red paper *PeopleSoft 8 Batch Performance on Oracle Databases* can help you perform Oracle tuning. It can be found on the PeopleSoft Customer Connection website:

<http://www.peoplesoft.com>

Transition environment testing, tuning and integration

Once you have set up your new HP-UX PeopleSoft servers, it is time to integrate these systems into a test environment, check the integrity of your test environment, start testing, monitor performance, and tune, if necessary.

Testing environment integration

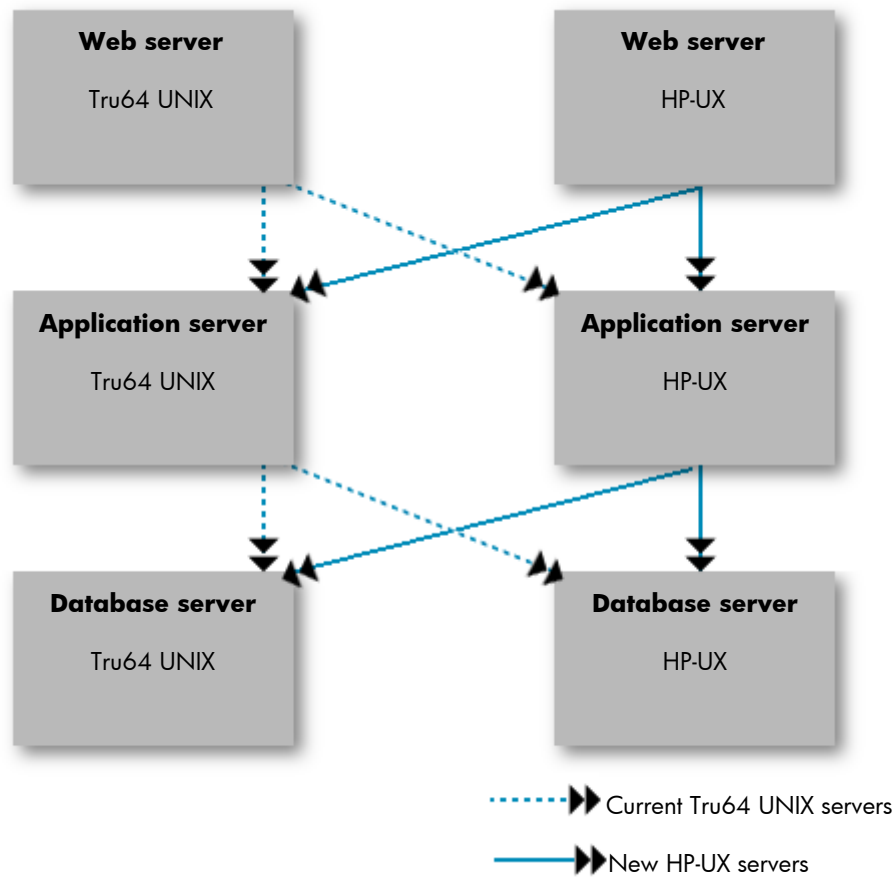
Integrating your new Itanium-based HP-UX PeopleSoft servers into a test environment is a simple process. The PeopleSoft installation process should have automatically integrated your PeopleSoft servers into a functional test environment, if your test configuration is a homogeneous environment with new Itanium-based HP-UX PeopleSoft servers.

In a mixed environment, you must modify some existing configuration files on your Tru64 UNIX PeopleSoft server to make your test environment functional. These files are:

- Web server – `configuration.properties`
- Application server – Database connectivity parameter file (for example `tnsnames.ora` for Oracle)
- Batch server (as a Physical Tier only) – Database connectivity parameter file

As shown in the following figure, you can integrate new Itanium-based HP-UX servers into your current Tru64 UNIX test environment.

Figure 3. Integrating Itanium-based HP-UX into the current Tru64 UNIX test environment



Testing environment integrity

PeopleSoft has developed a SQR script called `DDDAUDIT` that checks whether the PeopleTools tables are synchronized with the underlying SQL data tables in your database. Another SQR script called `SYSAUDIT` is designed to identify “orphaned” PeopleSoft objects. A process called `ALTER_AUDIT` checks whether the PeopleTools definition is synchronized with the underlying SQL data tables in your database.

You should execute these scripts to ensure that your database is clean and ready for testing. The instructions on how to execute these scripts and process are found in the PeopleTools installation guide.

Applying the test strategy

Your test environment is now ready for testing. Apply the test strategy from your Tru64 UNIX transition test plan.

- Execute scripts or manually simulate users
- Ensure that any customizations work properly
- Test your batch jobs and generate reports
- Check response time, or the time it takes to generate a report
- Check critical business processes
- Ensure that your new PeopleSoft configuration handles the required load.

See [Test Strategy](#) for more details.

Performance monitoring and tuning

Monitor the memory, CPU, and I/O performance of your new configuration. Make sure your database is performing optimally. Tune your system, application, or database if necessary.

Moving the test environment to production

You can move your new Itanium-based HP-UX PeopleSoft servers to production when you have completed all your tests and are satisfied with the performance.

Moving to production in a mixed environment

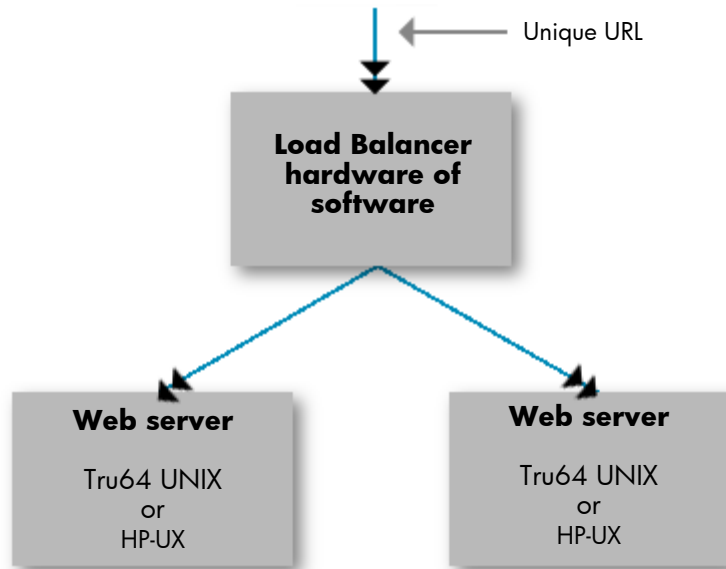
Your new Itanium-based HP-UX PeopleSoft Web and Application servers can replace their Tru64 UNIX PeopleSoft server counterparts either immediately or gradually. The PeopleSoft architecture is designed to have multiple PeopleSoft Web and Application servers. Your Tru64 UNIX PeopleSoft Web and Application servers can coexist with your new Itanium-based HP-UX PeopleSoft Web and Application servers in your production environment until you feel comfortable retiring these systems. These servers can also provide failover. See [Testing environment integration](#) for more details on integrating the Itanium-based HP-UX PeopleSoft Servers into the production environment.

Instructions for configuring multiple PeopleSoft Web and Application servers follow.

Multiple PeopleSoft Web servers

As shown in the following figure, you need load balancing hardware or software if your PeopleSoft application is accessed through a unique URL.

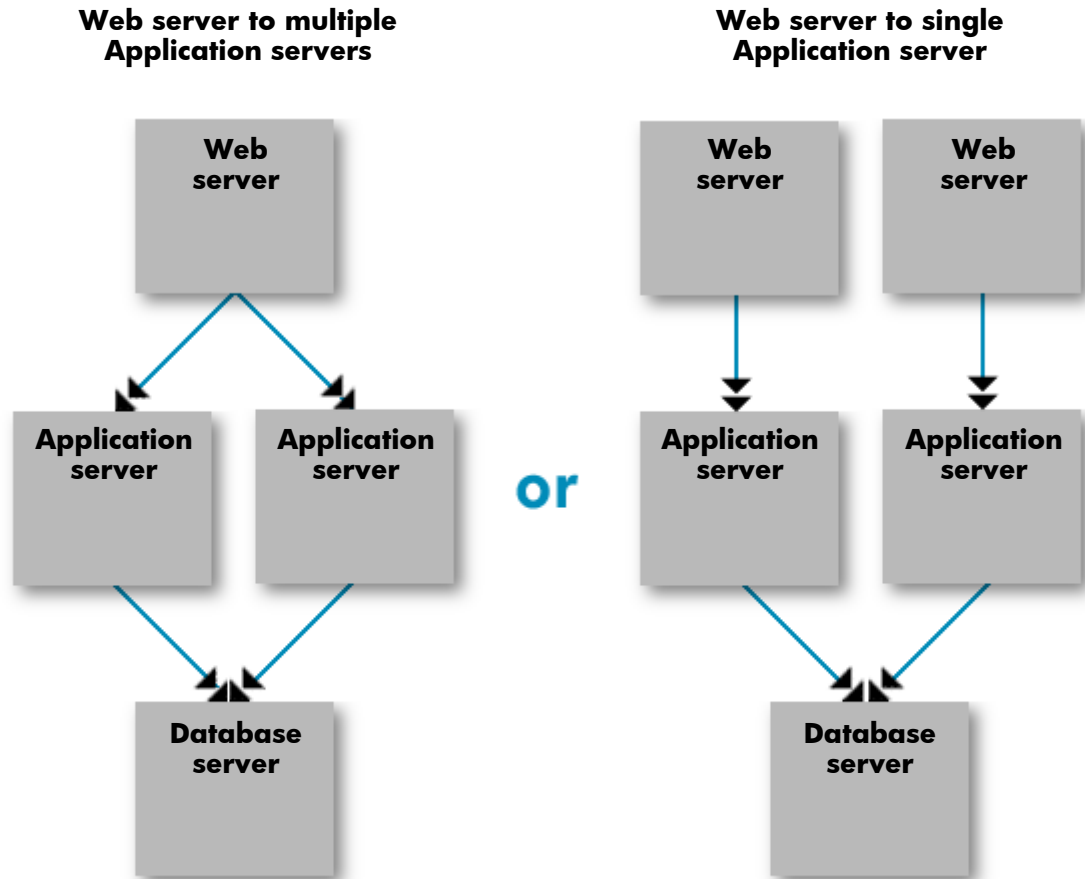
Figure 4. Web servers in a mixed environment using a unique URL



Multiple PeopleSoft Application servers

As shown in the following figure, each PeopleSoft Web server can service one or more PeopleSoft Application servers.

Figure 5. Multiple PeopleSoft Application servers in a mixed environment



If your new Itanium-based HP-UX PeopleSoft Application server needs to handle more traffic than its Tru64 UNIX counterpart in this mixed environment, then you can tune the ratios of user traffic between each PeopleSoft Application server. To do this, specify the ratios in the PeopleSoft Web server `configuration.properties` file:

```
PSSERVER:sc-hp01,sc-hp01,sc-hp02
```

Note: In this example, two users will be directed to the `sc-hp01` application server for every one user directed to the `sc-hp02` application server.

Failover

Multiple PeopleSoft Web and Application server configurations can provide failover. Refer to *Making the PeopleSoft Internet Architecture Highly-Available in an HP-UX Environment* for methods of implementing a highly available environment on HP-UX. The document is available at the PeopleSoft/HP Global alliance website:

www.peoplesoft-hp.com

Copying your production database

To move your Itanium-based HP-UX PeopleSoft database server into production, you must copy your production database while allowing minimum production downtime. There are many methods of copying your database across platforms. See [Allowable production downtime](#) for references that describe these methods. Your database administrator can decide the best method of copying the production database. In general, the Oracle Export/Import utilities work fine with a relatively small database. With a large database, this method can be very time consuming. Alternative methods might take less time. HP is currently working on different methods for copying large databases and will document these methods and post them on the Alpha Retain Trust website when they become available:

<http://www.hp.com/go/alpha-retaintrust>

Conclusion

There are numerous approaches for moving from Tru64 UNIX to Itanium-based HP-UX without upgrading PeopleSoft, with or without a database upgrade, and this document presents one of them. Since each company's environment is unique, HP recommends that you tailor your own implementation of the Tru64 UNIX transition while using the concepts and instructions contained in this document.

Appendix A

Example script for exporting an Oracle database on Tru64 UNIX with compression and piping:

```
# Script that exports to a compressed dmp file
## Next line is required for DIRECT PATH export
#export NLS_LANG=AMERICAN_AMERICA.US7ASCII

DumpDir=/usr/users/oracle
ExpFile=database.dmp

User=SYSADM
Password=SYSADM

mkfifo $DumpDir/dump_pipe$$
compress < $DumpDir/dump_pipe$$ > $DumpDir/$ExpFile.Z &

exp $User/$Password compress=Y direct=Y buffer=1000000
log=$DumpDir/$ExpFile.exp.log file=$DumpDir/dump_pipe$$ full=Y

sleep 20
rm $DumpDir/dump_pipe$$

chmod -w $DumpDir/$ExpFile.Z
```

Appendix B

Example script for importing an Oracle database with uncompression and piping:

```
# Script that imports from a compressed dmp file

## Next line is required for DIRECT PATH export
## export NLS_LANG=AMERICAN_AMERICA.US7ASCII

DumpDir=/usr/users/oracle
ExpFile=database.dmp

User=sysadm
Password=sysadm

mkfifo $DumpDir/dump_pipe$$
uncompress < $DumpDir/$ExpFile.Z > $DumpDir/dump_pipe$$ &

## Import command
imp $User/$Password ignore=N COMMIT=Y indexes=Y
file=$DumpDir/dump_pipe$$ log=$DumpDir/$ExpFile.imp.log
FROMUSER=SYSADM TOUSER=SYSADM

sleep 20
rm $DumpDir/dump_pipe$$
```

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5982-4722EN, 3/2004

