

The Migration Slide Set has been planned to be used by Field Sales personnel to present the migration story to customers and explain the process. The targeted audience is managers/decision-makers at high-end HP 3000 installations considering moving to a 900 Series system.

This slide set contains 28 slides that explain:

- The areas of compatibility that make it easy to migrate to the 900 Series.
- How migration to the 900 Series can be done in phases and take advantage of the features that HP Precision Architecture offers.
- What you can do today on existing MPE V based HP 3000s.

A master disc and overhead transparencies for this package have been sent to the SE Management. If you need to create transparencies for your presentation, please contact them directly.

Migration Slide Script

Slide #1

MPE V to MPE XL Migration

- Migration strategy
- Phased migration
- Preparing for migration

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Introduction

Hello. My name is [name] and I'd like to spend a few minutes giving you a presentation on migration from MPE V based HP 3000 systems to MPE XL based HP 900 Series systems. The goal of my presentation is three-fold. First, to introduce you to each of the areas of compatibility that make migration to the 900 Series easy. Second, to show you how migration to the 900 Series can be done in phases which allow you to get up and running immediately and take advantage of the features that the HP Precision Architecture offers over time. The third goal of this presentation is to show you the kinds of things that you can do today on an existing MPE V based HP 3000, in preparation for installation of a 900 Series system.

Slide #2

Easy Migration

1) No changes required! 2) Top performance
Minimum effort!

3) Transparent communications! 4) Minimum user retraining!

Migration Strategy

Objectives

The objectives of our migration strategy are summarized here. I will be talking about each of these key points as we go through the presentation.

(1) Run Existing HP 3000 Applications Without Changes

The first point is that customers will be able to take their applications that have been developed on an MPE V based HP 3000 in the past, and move them to the new 900 Series systems, and then run those applications without making any changes. We have designed the 900 Series systems so that data accessed by existing HP 3000 applications can be moved and used on the 900 Series systems without changes.

(2) Getting The Best Performance

Once customers are using the 900 Series system to run their businesses, using applications currently running on the HP 3000, they will want to get the best performance out of their applications. To make sure that this happens, HP has developed a very smooth migration path to better performance on the 900 Series systems. With varying amounts of effort, and depending on the particular application, the best performance can be achieved on the 900 Series system. I will go into more detail on that in just a few minutes.

(3) Move 900 Series Systems Transparently Into HP 3000 Networks

The third objective we have in developing the 900 Series HP 3000 systems is to make sure that our customers will be able to move 900 Series systems into HP 3000 networks, and continue to accomplish the same communications that they do today on existing HP 3000's.

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(4) Same Operating Environment


The fourth point is that you will be able to install your new 900 Series system in the same operational environment as the HP 3000 today. It is very important from our perspective that there is no major retraining effort required of our customers in order to move their applications over to the 900 Series operating environment.

I will talk about how we have implemented each of these objectives in detail during this presentation.

Slide #3

Components of Migration

- Object code compatibility
- Source code compatibility
- Data base compatibility
- Operational compatibility
- Network compatibility

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Components of Migration

We have been able to achieve this level of compatibility by providing the following elements:

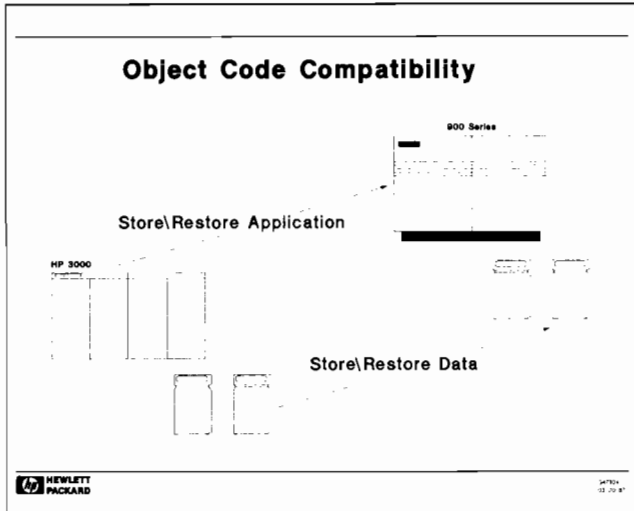
First, Object Code compatibility, so that you can run object code that has been compiled on an existing MPE V based HP 3000 system, on a 900 Series system without changes.

Second, Source Code compatibility, allowing customers to get the very best performance out of their applications, and in most cases, simply by recompiling their applications.

The third point, Database compatibility, is a high priority for us because database is such an integral part of the HP 3000 environment, and we want to make sure it's very simple to run databases as is, on 900 Series systems.

Next, Operational compatibility, as I've mentioned, the operational nature of the 900 Series systems will be the same as that of existing MPE V based HP 3000 systems, and networks will be compatible so that 900 Series systems can coexist with MPE V based HP 3000 systems in the same network. Now I will go into more detail on Object Code compatibility.

Slide #4

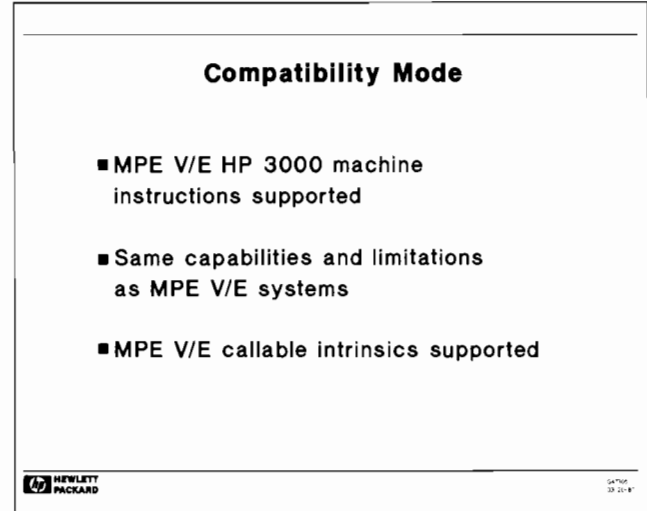


Object Code Compatibility

It will be very simple for you to move applications developed on MPE V based HP 3000's to 900 Series HP 3000 systems, without making any changes by simply using the MPE V 'STORE' command, to store the MPE V programs and data to tape, and the MPE XL 'RESTORE' with the 'TRANSPORT' option, to restore the programs and data to an MPE XL system. Data can be moved in the same manner. Applications can continue to run without making any changes.

There are some exceptions to this. For example, privileged mode applications may not run, since we have never guaranteed that privileged mode applications will continue to run over different versions of MPE. Another example is the FCARD intrinsic, which reads a punched card on a card reader, since we don't plan to support the card reader on 900 Series systems. The exceptions are few in terms of being able to move your applications from an MPE V based HP 3000 to a 900 Series system.

Slide #5



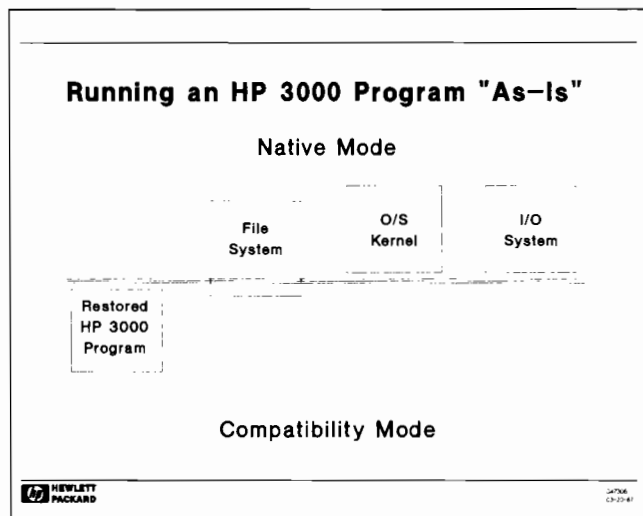
Compatibility Mode

We have been able to achieve this level of Object Code compatibility by providing the Compatibility Mode Environment, on MPE XL based systems. This mode of operation provides the MPE V HP 3000 Operating Environment. It provides the software support for the MPE V/E HP 3000 Machine Instruction Set, so that applications compiled on an MPE V/E based HP 3000 system can run on a 900 Series system. To provide the high degree of compatibility with MPE V/E systems the same capabilities and limitations that MPE V/E systems have, apply to programs which run in Compatibility Mode on 900 Series systems. MPE V/E callable intrinsics are also supported in Compatibility Mode (as well as Native Mode).

Native Mode

Now, obviously, we want our customers to be able to take full advantage of the HP Precision Architecture running applications they may have developed on their MPE V/E based HP 3000 systems. In order to do that there is a more efficient way of accessing the architecture to get the very best performance from the HP Precision Architecture. We call that Native Mode. It is simply the most efficient way of accessing the very fast HP Precision Architecture of the 900 Series systems, and it provides the best performance you can achieve with the 900 Series systems.

Slide #6



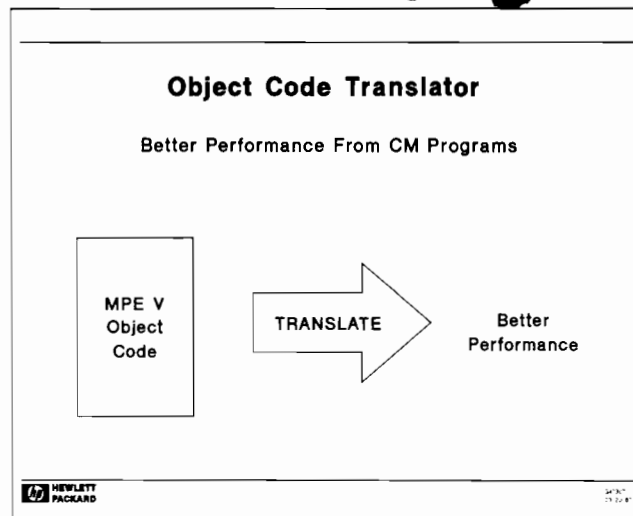
Running an MPE V/HP 3000 Program 'As-Is'

If we look at it another way, let's say we have an application that we move from an MPE V based HP 3000 system to a 900 Series system. At this point we haven't changed it in any way; we simply do the Store and Restore to bring it from an MPE V based HP 3000 to a 900 Series System. If we look at the way this application runs on the 900 Series system with the two modes, we have Native Mode and Compatibility Mode. Notice that the application is running in Compatibility Mode because we're just running the object code from the MPE V based system as is. It's not the most efficient way of accessing the architecture, but much of the time, while you are running your applications, you're actually accessing other pieces of code that are running in Native Mode. You're accessing the MPE XL file system in order to request information from your files; or the Operating System is doing things for you transparently because it is in Memory Management, Dispatching, or executing some other form of Resource Management for you, or may be going through the I/O system to access files.

While you're accessing these pieces of code, they're actually running in Native Mode. This is because the Operating System has been rewritten and almost all of the operating system will be executing in Native Mode. So, you're not really running in Compatibility Mode all the time your restored application is running on the 900 Series system. Still, to get the very best performance, you want to move as much of your application as possible into Native Mode. The ultimate goal is to get all of your performance sensitive applications running in Native Mode.

The switching between modes that the operating system performs is transparent to the user and application. You don't have to worry about which mode you're in, except when fine tuning your system to get the very best performance. You get the best performance on a 900 Series system by recompiling your applications.

Slide #7



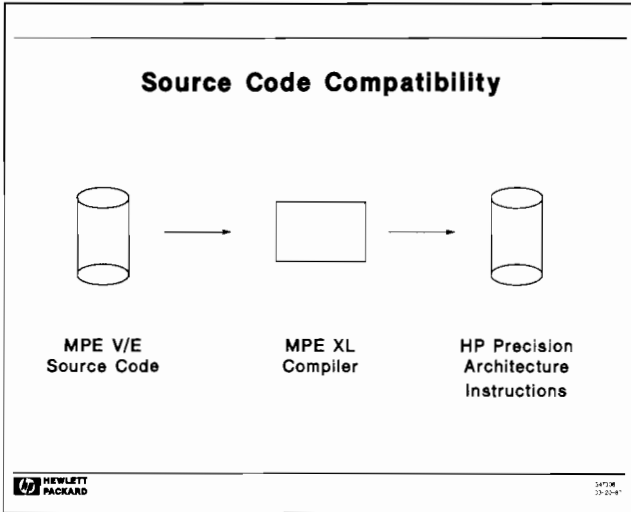
Object Code Translator

While your ultimate goal for performance reasons should be to migrate programs to Native Mode, in some cases this may be very difficult. If the source code for a program is not available, or it has been written in a language for which there is no Native Mode compiler, the Object Code Translator can provide increased performance even though the program will still run in Compatibility Mode.

Applications which are restored and run 'as-is' in Compatibility Mode are actually run by an MPE V HP 3000 Instruction Set Emulator. This emulator works much like a Basic language interpreter in that it converts the MPE V HP 3000 instructions into the equivalent 900 Series Instructions as the program executes. This conversion or interpretation of instructions at run time requires additional time over the method that compiled languages use. This is where the Object Code Translator can provide increased performance. While the Emulator works much like an interpreter, the Object Code Translator works like a compiler.

MPE XL systems will include a new command that works much like the existing compiler commands. This command will tell the translator to translate the instructions in an MPE V program or SL into the equivalent 900 Series instructions. From then on, when the program is run, the 900 Series instructions that the Object Code Translator generated can be executed directly, avoiding the conversion of MPE V HP 3000 instructions into 900 Series instructions as the program executes. (It is important to note that a program translated by the Object Code Translator still runs in Compatibility Mode. It still has the same capabilities and limitations that apply on MPE V/E based systems.)

Slide #8

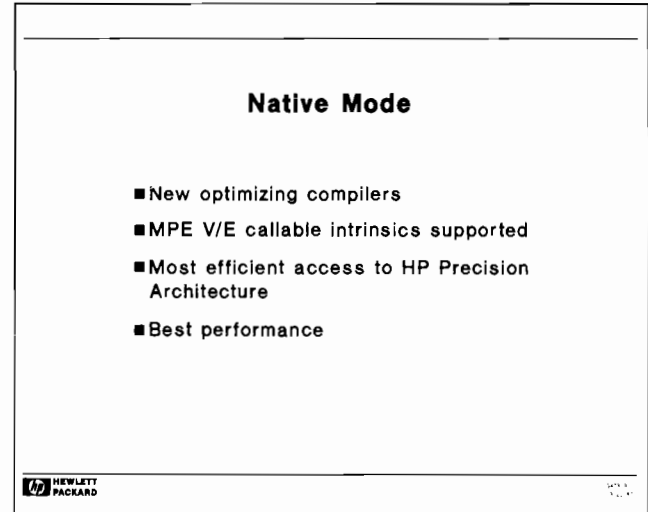


Source Code Compatibility

The basis for the easy migration path to Native Mode is Source Code compatibility. This simply means that by recompiling your application using one of the new MPE XL Native Mode compilers you will have a Native Mode application which efficiently accesses the power of the HP Precision Architecture.

There are a few exceptions to Source Code compatibility. An example includes increases in Pascal pointer sizes from 16 bits to 32 bits since Native Mode programs can use the greater addressing capability of the HP Precision Architecture.

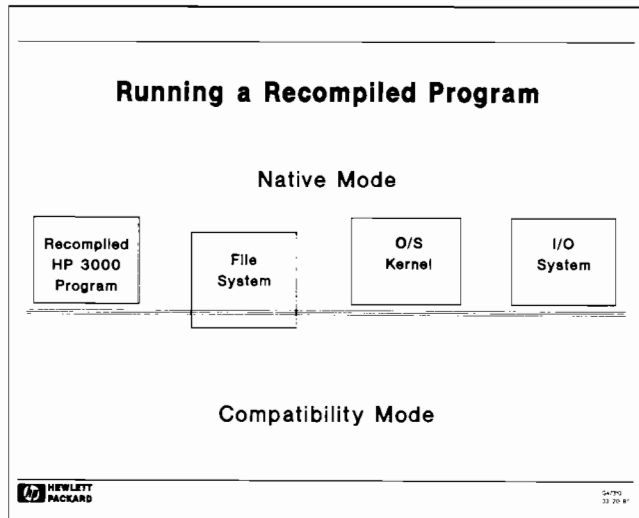
Slide #9



Native Mode

Besides providing Source Code compatibility, when migrating to Native Mode, programs can take advantage of new optimizing compiler technology which is being applied to the compilers available in Native Mode. Native Mode programs can also continue to call MPE V/E callable intrinsics as Compatibility Mode programs can. As mentioned earlier, migrating to Native Mode provides the most efficient access to the HP Precision Architecture which in the end produces the best performance for your application as well as providing new features.

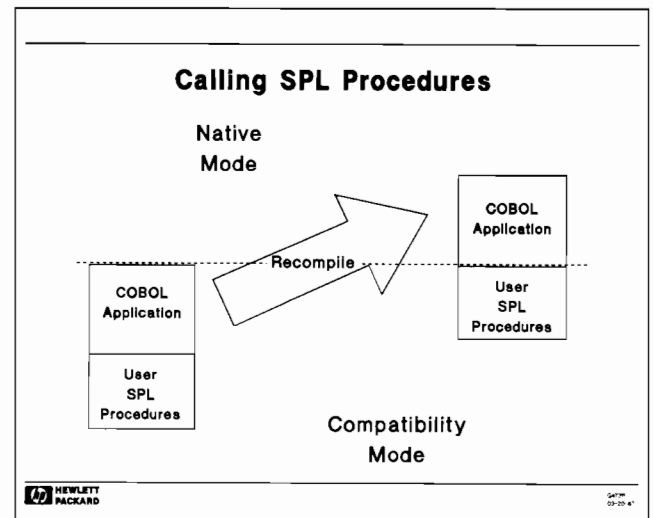
Slide #10



Running a Recompiled Program

When you have moved your application into Native Mode, you now have your recompiled application running very efficiently in Native Mode. You also have the added benefit of using MPE XL Operating System services which are in Native Mode directly avoiding the switching of modes in all but a few cases.

Slide #11



MPE XL Switch Subsystem

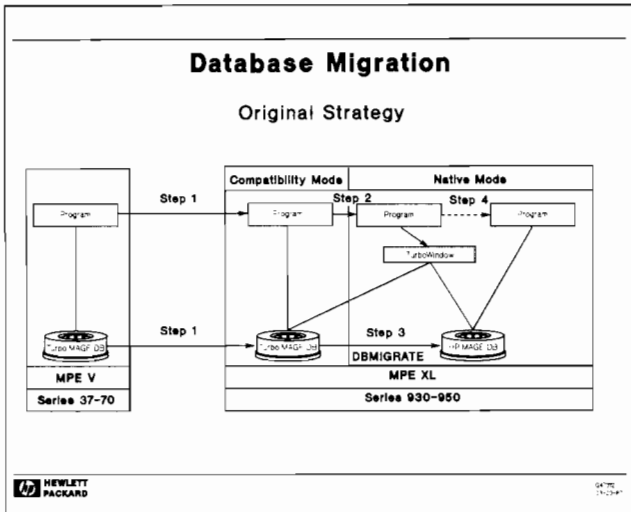
There are many situations where customers use SPL today on MPE V based HP 3000 systems in library procedures they've developed to do low level or utility functions, while the main applications are written in high level languages.

We want to make sure that customers can easily get the best performance from the 900 Series systems. Since the source code for a library procedure may not be available, or a procedure may have been written in a language for which there is no Native Mode compiler (such as SPL/V and FORTRAN 66/V), we have designed into MPE XL the ability for customers to recompile the main application and continue to call a library procedure that resides in Compatibility Mode. For example, if you had a COBOL II, FORTRAN 77, or Pascal application which called an SPL procedure, you would be able to recompile the main program portion of the application, and continue to call the library procedure in Compatibility Mode. The advantage is that customers get substantially better performance since they will have moved the main program into Native Mode and you don't have to rewrite anything. You don't have to change the COBOL program in order to recompile it and you don't have to rewrite the Compatibility Mode SPL procedures since you can call them from Native Mode.

Some effort will be required to achieve this. The customer must give the system some information, via a new MPE XL intrinsic, so it can know how to find the Compatibility Mode procedures, but in many cases it will be much simpler than rewriting the library procedures.

Remember, however, that the customer doesn't have to do this. They can run the application as is, without making any changes at all. But in migrating to Native Mode, the customer may wish to use this intermediate step to avoid rewriting of SPL code.

Slide #12



Database Migration — Original Strategy

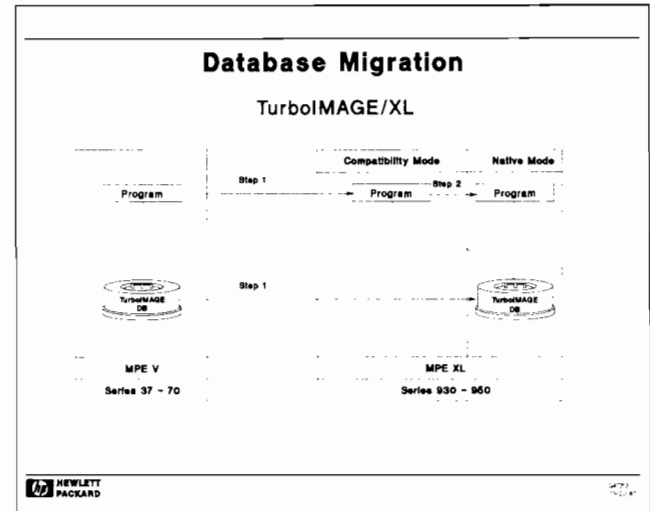
The original IMAGE database migration strategy consisted of 3 major components:

- TurboIMAGE in Compatibility Mode. This provided the 100% compatibility with TurboIMAGE/V on MPE V systems that allows programs and databases to be restored and run without modification.
- New HPIMAGE Native Mode database. This is an entirely new version of IMAGE developed to take full advantage of the HP Precision Architecture. Because HPIMAGE has a state of the art database internal architecture different than TurboIMAGE, source changes are required to migrate a TurboIMAGE application to HPIMAGE.
- TurboWindow Interface to HPIMAGE. TurboWindow is an interface that allows TurboIMAGE programs to access an HPIMAGE database with very few changes.

Why has this strategy changed:

- TurboWindow locking issues. One of the major differences between TurboIMAGE and HPIMAGE is the locking strategy. To provide the high degree of parallelism that HPIMAGE supports, an entirely new locking strategy is required. While TurboWindow attempts to hide the difference in locking strategy from a TurboIMAGE application, we encountered performance problems with TurboWindow.
- TurboIMAGE in Native Mode. Initial expectations were that, because of software limitations inherent in TurboIMAGE, a recompiled, Native Mode, TurboIMAGE would not be able to take advantage of the performance that the HP Precision Architecture provides. On further investigation projections indicate that a Native Mode TurboIMAGE can take advantage of the HP Precision Architecture at least through the Series 950.

Slide #13



Database Compatibility — New Strategy

So, what is the new database migration strategy?

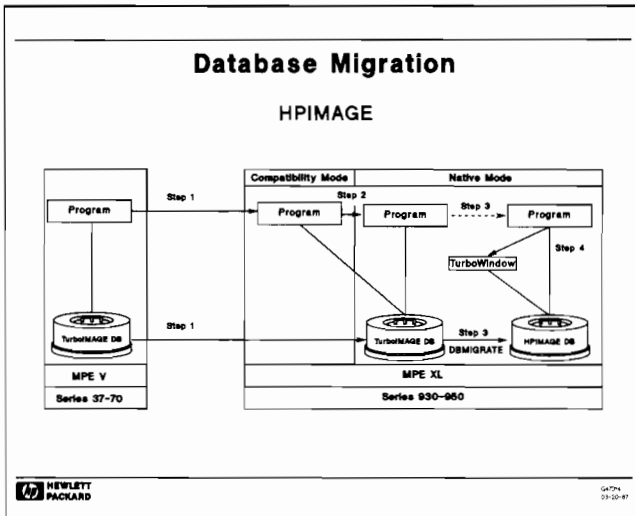
- While in the original strategy a program and database were restored and run in Compatibility Mode, under the new strategy the restored program continues to run in CM but the restored TurboIMAGE database is now accessed via a recompiled Native Mode TurboIMAGE called, TurboIMAGE/XL.

This provides the same ease of migration, since you only have to restore your programs and databases to use them, AND your applications get the increased performance by using a Native Mode TurboIMAGE.

- The second step towards better performance is to recompile the restored application using a Native Mode compiler. Compatibility Mode and Native Mode programs can access the same TurboIMAGE/XL database simultaneously.

By providing TurboIMAGE in Native Mode customers will gain the added performance benefit from the database running in Native Mode as well as maintaining compatibility with TurboIMAGE/V.

Slide #14



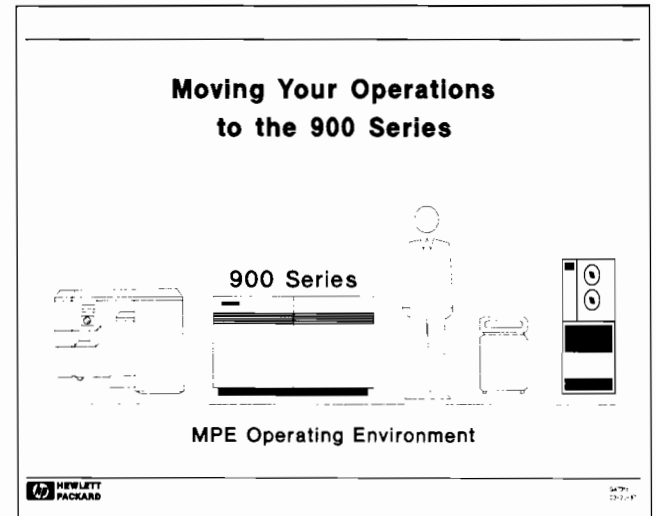
Database Compatibility

Since TurboIMAGE/XL may not be able to take advantage of the performance of systems beyond the Series 950, migration to HPIMAGE should be considered for customers who need the performance that these systems will provide. For applications that will run on 900 Series systems only, HPIMAGE provides the greatest feature set and performance. To maintain the ability to use the same source code on existing HP 3000 systems and 900 Series systems, TurboIMAGE/XL or TurboWindow should be used.

The migration strategy from TurboIMAGE/XL to HPIMAGE is the same as the original TurboIMAGE CM to HPIMAGE was. There will be a utility, called DBMIGRATE, which will convert a TurboIMAGE/XL database to HPIMAGE. TurboWindow will also be available as an intermediate step.

For applications that will run on 900 Series systems only, HPIMAGE provides the greatest feature set and performance. To maintain the ability to use the same source code on existing HP 3000 systems and 900 Series systems, TurboIMAGE/XL or TurboWindow should be used.

Slide #15

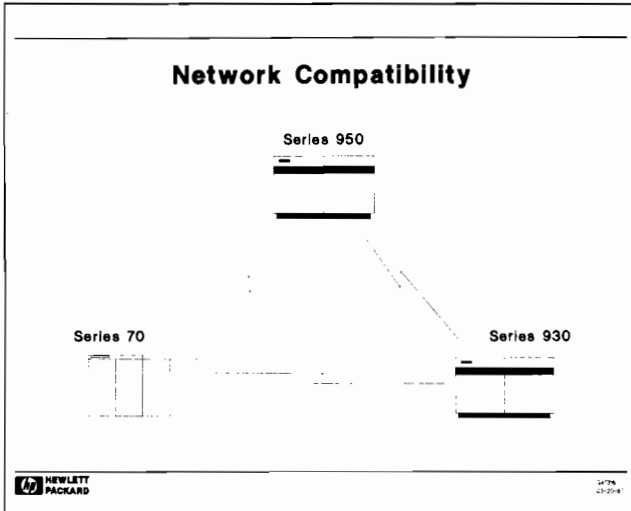


Operational Compatibility

What will it be like to move your operations to a 900 Series system in terms of the operating environment? We will be supporting the MPE environment for as long as we can see into the future. MPE XL will be a super set of MPE V/E. It has some new features and new capabilities, but basically, it's the same operating system externally. The MPE XL command structure is almost identical to MPE V/E. The way operators and system managers will interact with the systems is almost identical with the way they do today on MPE V/E based HP 3000 systems. One of the few differences is that addition of a new system generation utility which replaces the MPE V/E SYSDUMP utility. This new utility makes it much easier to manage the system and will require some retraining of system managers. But, basically, it will be a very minor retraining effort.



Slide #16



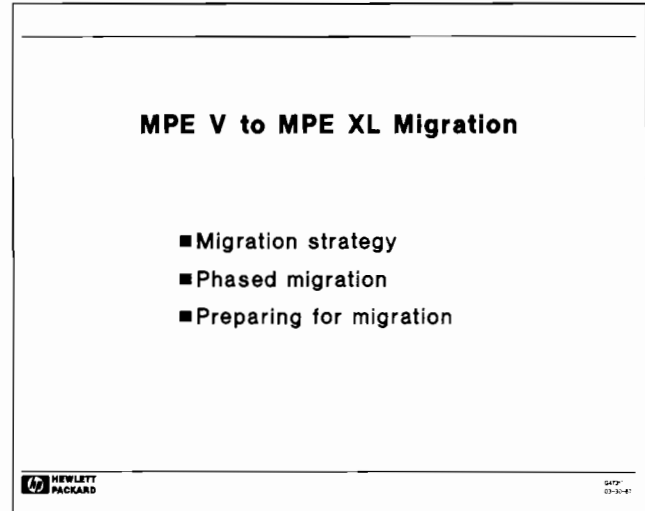
Network Compatibility

It is also very important for us to allow 900 Series systems to coexist in networks with existing HP 3000's and to continue to do the same kinds of communications that we've done in the past on HP 3000 systems. This will continue to be true with the 900 Series systems.

There is one caveat; Series II's, III's, 30's, and 33's will be able to communicate with 900 Series systems only through an intervening newer HP 3000 such as a Series 70 or Series 52. It is very important for us to make sure that the networks are compatible because we will be selling MPE V/E based HP 3000's well into the 1990's. We will see networks that include the Series 70 and 900 Series systems in the same network for many years to come. So, we've got to maintain network compatibility, and we're doing everything necessary to make sure that happens.

(Note: First release systems will be able to communicate with IBM systems only through an MPE V based system until the 900 Series IBM data communication products are released.)

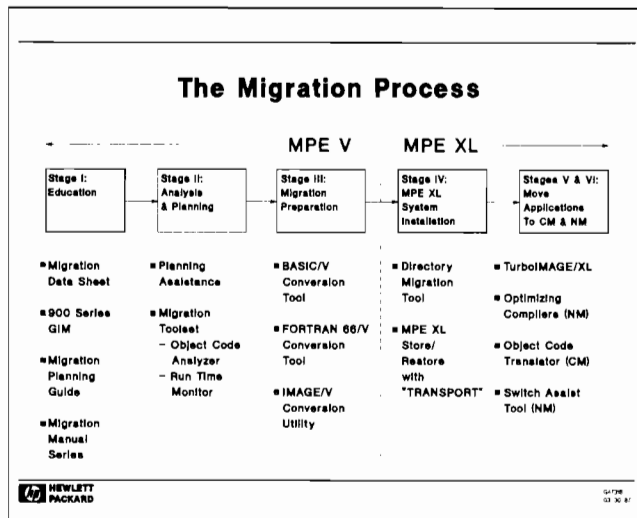
Slide #17



Now that we have looked at an overview of the 900 Series migration strategy and discussed some of the technology that makes this migration simple, I will address a phased approach to migration. A phased approach to migration provides a strategy that allows applications to get up and running as quickly as possible as well as taking advantage of the higher performance and new features of the 900 Series systems.

This discussion of the phased migration approach will place the technology discussed in the migration strategy section as well as the products, tools, and services that are being provided within the perspective of a phased migration.

Slide #18



This slide shows an overview of the migration process, and the steps you will go through. These steps are defined at a high level since the specific steps in the migration of a given application is highly dependent upon the applications characteristics. Below is a brief description of the stages. I'll briefly outline the process here, and the following slides will go into each step in more detail.

A typical migration process begins with Education using materials and documentation available to help understand migration. While migration is not difficult, as we have seen in the last section of this talk, there are a number of Tools, Services, and options available in migration.

The second Migration Step is Analysis and Planning. In this step the information learned in the Education step is applied to a specific application. This is the first step in which detailed analysis of Language, Database, and Network Migration and their relationship to an application is integrated. You will need a plan to evaluate tradeoffs of effort and performance, set goals, schedules and testing procedures to measure the success of your migration. The end product of this step is a migration plan.

The third step is Preparation. In this step preparation for the installation of the 900 Series system begins. This is also the first step in which implementation of the migration plan starts. It primarily includes the steps that may be taken on an existing HP 3000 system in preparation for installation and migration to the 900 Series system.

The next step is System Installation. This includes a series of steps that will be taken upon delivery and installation of the 900 Series system. In addition to the normal steps that are taken when a new HP 3000 system is installed, this step includes use of a new Migration Tool which duplicates the existing HP 3000 operational environment on a 900 Series system.


The fifth and sixth steps, Compatibility Mode and Native Mode operation, are both highly dependent upon the application and migration strategy. The first step in moving to a 900 Series system is to restore your programs and data into Compatibility Mode (CM). CM is provided to allow you to become productive quickly with your new system by letting you move your applications without having to make changes. Native Mode is the environment for optimum performance; we're providing optimizing compilers to move your code into NM and are allowing flexibility to continue to access TurboImage databases. This step may also include dual mode execution of programs. The goal of this step is to take as much advantage as possible of the high performance and features of the 900 Series systems.

Now we will cover these steps in greater detail and tell you about tools and documentation that will be available to help you with each step.

Slide #19

Education Stage

- Migration Data Sheet
- HP 3000 Configuration Guide
- 900 Series General Information Manual
- Migration Planning Guide
- User group papers and presentations
- Migration manual series

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The goal of the Education stage of the Migration Process is to learn about the Migration Process, Tools and Services as well as the new products being offered on the 900 Series systems so that this information can be applied to the development of a migration plan for a specific application. This slide shows a list of documentation and services providing information on migration.


- Migration data sheet is a high level overview of migration, available now.
- HP 3000 Configuration Guide has been updated to provide information on configuring Series 930 systems.
- 900 Series General Information Manual provides a high level overview of the 900 Series systems and software. Data Sheets and other information regarding MPE XL software is also available.
- Migration Planning Guide gives customers more in-depth information on migration and the tools and services available. It also outlines steps that can be undertaken on existing MPE V based HP 3000 systems to prepare for migration to a 900 Series system.
- User Group Papers and Presentations have been given at past Interex and regional user group conferences and will continue to be given to provide more information to customers concerning migration and the 900 Series systems.

The above information and other documents which will be released in the future should be reviewed as part of the Education stage of migration. These documents form a knowledge base by providing more information about MPE XL based products.

Slide #20

Migration Manual Series

- General User's Skills Migration Manual
- System Administrator's Skills Migration Guide
- Programmer's Skills Migration Guide
- Migration Process Guide
- COBOL Migration Guide
- Pascal Migration Guide
- FORTRAN 77 Migration Guide
- Data Communication Migration Guide

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Migration Manual Series

Looks like a lot of documentation; it's not because migration is difficult, we wanted to provide customers with information on every area and targeted for all user types, i.e. general users, system managers and programmers. This set of self-paced training will include manuals for System Managers, Programmers, and General Users which will update them on (a) the differences between MPE V and MPE XL systems; and (b) information on significant new features. This manual set will also include a Migration Process Manual explaining the process and migration stages in detail. Available at 1st release

Slide #21

Analysis and Planning

- Migration Toolset
 - Object Code Analyzer
 - Run Time Monitor
- Migration Toolset Guide
- Planning consulting

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Analysis & Planning

The goal of the Analysis and Planning stage is to produce a detailed plan for the migration of a specific application. This plan may include short term and long term goals for migration of the application. An example of a short term goal might include restoring a Segmented Library of SPL procedures in Compatibility Mode while the long term goal for these procedures might be to rewrite them in a language supported in Native Mode.

While MPE V programs and data can be restored and run in Compatibility Mode without changes, there are several options and combinations of options available when migrating to Native Mode. These include migration of any portion of an applications code. Consulting services will be available to provide information on these options and the tools available to implement a phased migration, as well as consulting on the development of a migration plan for a specific customer application. (At the time of this writing the details, including naming, of these services were still under development.)

While we've done everything possible to make MPE XL compatible with MPE V, you may encounter some incompatibilities, for instance if you've used privileged mode. We're providing tools to help you identify such incompatibilities, which together are called the Migration Toolset.

The Toolset provides an automated way of determining the incompatibilities within an application, avoiding the need to manually search through source code. The PTAPE intrinsic, which reads a paper tape, is an example of an incompatibility that would be identified by the Toolset since it is not supported on MPE XL based systems.

OBJECT CODE ANALYZER: a tool which scans program and SL files and generates a list of incompatibilities or potential incompatibilities found.

RUN TIME MONITOR: detects and reports incompatibilities which are dependent on information only available at execution time only.

These tools will be available when the 900 Series systems start shipping. We are trying to make them available on an MPE V MIT prior to Series 930 MR. (Pricing is yet to be determined but will be very very low)

A Migration Toolset Guide will be provided with the Toolset. Besides providing the information needed to use the tools, this manual will also describe the Migration Process in more detail.

As with the installation of any new machine, preparation of the facilities must be taken into consideration as well as planning for which system each group of users will be using after the new machine is installed. Hewlett-Packard will be offering an extended return program that will allow customers to inexpensively operate an existing HP 3000 Series 6x/70 in parallel with the 900 Series system. The extended return program allows customers to keep the Series 6x/70 to be returned, beyond the normal 30 day return policy.

Slide #22

Preparation Stage

- Follow guidelines in the migration planner
- Address any incompatibilities identified by the migration toolset

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Preparation

There are some things you can do now to prepare for migration before you receive a 900 Series system.

- If you haven't done so already, you will need to move to TurboIMAGE and NS/3000, the database management system and network communication system supported on the 900 Series.
- If top performance will be required from an application it will need to be in a high level language version for which there will be an optimizing Native Mode compiler. (slides on CM & NM compiler availability follow)
- Regarding migration from SPL to a higher level language - There will be an SPL to C migration aid available from HP (at MR this will be an SE usable tool, we don't yet know if it will be a customer usable tool, we may place it in the Contributed Library)

We are encouraging third parties to develop SPL to other source translators, such as Pascal (HP will not have an SPL to Pascal translator)

- Regarding moving to FORTRAN 77 and Business BASIC (from FORTRAN 66 and BASIC), tools exist today to aid with these conversions. (While we recognize that migration from BASIC to Business BASIC may be extremely difficult for some customers, there are currently no plans to provide a NM BASIC compiler. So, for the best performance on 900 Series systems BASIC customers should migrate to Business BASIC if possible.)
- Changes identified by the Migration Toolset can be made at this stage. If any incompatibilities were found in the planning stage they should be isolated and if possible re-coded.

Slide #23

System Installation Stage

- Directory migration tool
- MPE XL store/restore "TRANSPORT" option
- New system generation utility

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System Installation

Once the 900 Series system arrives, the System Installation stage begins. The primary goal of this stage is duplication of the existing HP 3000 operational environment on the 900 Series system. HP is providing new tools that provide increased functionality and ease of use in maintaining the operational environment as well as a migration tool which help migrate the existing HP 3000 environment to the 900 Series system.

- A Directory Migration Tool will be available to assist in migration of the operating environment. This tool will migrate an MPE V accounting structure to an MPE XL based system. It will also migrate RIN Table Information and User Logging IDs as well as the UDC environment and Private Volume information. (will be available in FOS of MPE XL at first release)
- The MPE XL Store/Restore command supports a 'TRANSPORT' option which allows MPE V compatible store tapes to be created and read. This option facilitates the transfer of data between existing HP 3000 systems and 900 Series systems. (Note: The MPE XL store tape format is different than the MPE V format to allow the for new enhancements on MPE XL systems.)
- A new System Generation utility, SYSGEN, replaces the MPE V SYSDUMP. The user interface for SYSGEN provides significant improvements over SYSDUMP. Specification of many devices with the same basic configuration can be done with a single command for all of the devices instead of requiring a command for each device. Because most MPE XL tables are self expanding the system manager no longer needs to configure these table sizes.
- Since MPE V/E is not supported on the Series II/III/30/33 systems, these customers may also purchase consulting services to aid in migration of these systems to 900 Series systems during the System Installation stage.

Slide #24

Compatibility Mode Stage

- Object Code Translator
- SPL/V
 - Business Basic/V
 - RPG/V
 - COBOL II/V(F)
 - Pascal/V(F)
 - FORTTRAN 77/V(F)
 - FORTTRAN/V(F)
 - Basic/V(F)



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Compatibility Mode

- Hewlett-Packard is supplying an Object Code Translator to improve performance within Compatibility Mode. The Object Code Translator will translate the MPE V HP 3000 instructions into a Compatibility Mode program or SL into 900 Series instructions and append the 900 Series instructions to the end of the program or SL file. A new command much like the existing compiler commands is used to perform the translation. The translator provides better performance when the program is run since the HP 3000 instructions do not need to be translated into 900 Series instructions at run time.

Besides providing increased performance by avoiding the decoding of instructions at run time, the Object Code Translator also optimizes the code. One of the side effects of optimizing and translating the code is that debugging becomes more difficult and the program file size increases.

- On first release of MPE XL the SPL/V, Business Basic/V, and RPG/V compilers will be available in CM. If Compatibility Mode provides such a high degree of compatibility with MPE V why aren't all of the MPE V compilers available on first release? This is because of the time consuming Quality Assurance testing requirements that these compilers must go through before they can be released. As time allows the other MPE V compilers will be released for use in Compatibility Mode on MPE XL.

Slide #25

Native Mode Stage

- Switch Assist Tool
- Floating point conversion intrinsic
- COBOL II/XL
 - FORTTRAN 77/XL
 - HP Pascal/XL
 - HP C/XL (F)
 - Business Basic/XL (F)
 - RPG/XL (F)



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Native Mode

As mentioned earlier HP is supporting mixed mode applications. A mixed mode application is one which executes in both Compatibility Mode and Native Mode. This feature is provided via the MPE XL Switch Subsystem and allows Native Mode programs to call procedures which reside in Compatibility Mode SLs. It also allows Compatibility Mode programs to call procedures which reside in Native Mode executable libraries (the Native Mode equivalent of SLs). The Switch Subsystem consists of three new intrinsics which are used to perform these mode switches.

We also mentioned that some effort would be required to use the Switch Subsystem. The customer must give the system some information, via a new MPE XL intrinsic to make cross mode procedure calls.

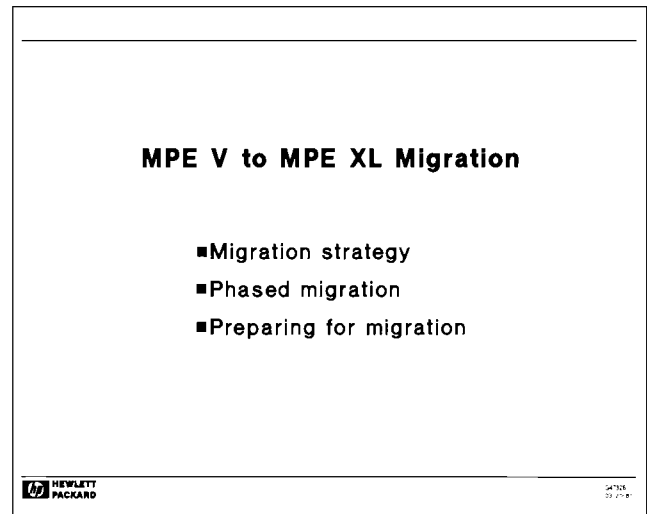
Hewlett-Packard will be providing a Switch Assist Tool which makes use of the Switch Subsystem significantly easier. The Switch Assist Tool allows entry of information about the procedure that needs to be called, and generates Pascal source code that makes the call to the proper Switch Subsystem intrinsic.

Based upon user requests for support of more international standards, and as a goal in providing a single standard across HP computer systems, the HP Precision Architecture machines support the IEEE floating point standard. While converting HP 3000 floating point data to the IEEE format is optional, Native Mode programs will have better performance if floating point data is converted to the IEEE format since the Floating Point Coprocessor supports the IEEE standard. To convert from the MPE V HP 3000 floating point format to the IEEE floating point standard format, which is supported in Native Mode on 900 Series systems, a new Floating Point

Conversion Intrinsic will be provided. This intrinsic allows 32, 64 and 128 bit floating point numbers to be converted between the HP 3000 floating point format and the IEEE floating point format. (It supports conversion in both directions.)

On first release of MPE XL optimized COBOL II/XL, HP Pascal/XL, and FORTRAN 77/XL compilers will be available. Shortly thereafter a new HP C/XL compiler will be released. NM compilers planned for future release are Business Basic/XL and RPG/XL.

Slide #26



MPE V to MPE XL Migration

- Migration strategy
- Phased migration
- Preparing for migration

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Transition Slide

This completes a summary of the phased migration stages and the Tools, Products, and Services that are being provided in support of phased migration.

Now that we have a more complete understanding of the technology and phases involved in migration let's quickly review the things that a customer can do to prepare for migration to an MPE XL system after they leave today's presentation.

Slide #27

General Migration Recommendations

Native Mode

To move to Native Mode for more performance

- Convert from SPL to Pascal or C
- Convert from FORTRAN/V to FORTRAN 77/V
- Convert from BASIC/V to HP Business Basic/V

■ Avoid use of Priv Mode

- Migrate from DS/V to NS/V
- Migrate from IMAGE/V to TurboIMAGE

To move to Compatibility Mode

Compatibility Mode

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Preparing For Migration (Languages/DB/DC)

This slide summarizes the conversions that can be made today on MPE V/E systems in preparation for migration to an MPE XL system. This includes updating from Image/V to TurboImage/V as well as DS/V to NS/V if possible. When possible conversion of FORTRAN/V to FORTRAN 77/V, BASIC/V to Business BASIC/V, and SPL/V to Pascal/V or C (Note: C/3000 is an HP+ product sold by CCS).

Slide #28

Preparing for Migration

- Migration Planning Guide
- Migration Data Sheet
- 900 Series General Information Manual
- HP 3000 System Configuration Guide
- User group papers

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Preparing For Migration (Documents)

There is also more migration information that is available today. Including an updated Migration Data Sheet, 900 Series General Information Manual, HP 3000 System Configuration Guide, as well as numerous User Group Papers and Presentations. (Existing papers can be found in the Interex Detroit and Vienna conference proceedings.)







