

z/TPF EE V1.1

z/TPFDF V1.1

TPF Toolkit for WebSphere® Studio V3

TPF Operations Server V1.2



IBM Software Group

TPF Users Group Spring 2007

z/TPF Migration experiences

Name: IBM z/TPF Support Team

Venue: Education session

AIM Enterprise Platform Software

IBM z/Transaction Processing Facility Enterprise Edition 1.1.0

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Introduction

We have provided guidance to multiple customers regarding the migration to z/TPF. IBM would like to share common experiences, hints, and tips that we have learned in working with customers.

We have conducted two programs with customers:

z/TPF Migration Readiness Assessment

- A high level analysis of a customer's system and ability to migrate to z/TPF.
- Provide basic recommendations for customers to investigate further.

z/TPF Rough Order of Magnitude (ROM)

- A more detailed analysis of a customer's z/TPF migration.
- Forecast specific timelines and resource estimates.

Hardware Compliancy

Most customers we have met with are compliant regarding hardware requirements. Below is a list of hardware that should be certified as z/TPF compliant. Refer to the z/TPF migration guide for specific guidelines.

- **IBM system z™** (z800, z890, z900, z990, z9BC, z9EC)
- **DASD**
- **Tape**
- **Interconnection devices**
- **Communication controllers**
- **Consoles**
- **Loosely Coupled considerations**

Timeline – When to migrate?

It is important to forecast potential dates for a z/TPF migration.

- Many customers have current projects that need to be completed before a z/TPF migration can start.
- Many customers have limited time periods when a z/TPF migration can occur.
- Forecast dates and work backward in understanding what needs to be accomplished and when.

Sample Time sequences

- Applications and testing
- Development environment and Systems

PUT Timeline

The table below shows the product release schedule for the next two years. Beginning in 2008, all product delivery cycles will be aligned to a November GA.

<i>PRODUCT</i>	<i>7-Jun</i>	<i>7-Nov</i>	<i>8-May</i>	<i>8-Nov</i>	<i>9-May</i>	<i>9-Nov</i>
TPF 41	PUT 21	(PUT 22)		(PUT 23)		(PUT 24)
TPF DF	PUT 22	(PUT 23)		(PUT 24)		(PUT 25)
z/TPF		PUT 04		PUT 05		PUT 06
z/TPF DF		PUT 04		PUT 05		PUT 06
TPF Op Srvr	1.2.05			1.2.06		1.2.07

Sample Time Sequence - Applications and Testing

A P P	Analyze code		Run conversion tools against code base (Single Source rules)	Integrate converted code base into new development environment	Validate Program mods			
	Detailed planning				Unit Testing	Problem resolution and reintegration into new development environment.		
T E S T	Develop test cases and investigate testing tools		Customize test tools	Integrate test tools into procedures and documentation.	Use test cases and new testing tools	Functional, Non-Functional and Performance Testing		
					Baseline testing			

Sample Time Sequence - Development Environment and Systems

D E V	Set-up Linux footprint								
		Set-up HFS environment							
			Implement Modern Development Environment		Customize Modern Dev Env, Problem resolution tracking		Support of users of Modern Dev Env, Problem resolution		Modern Dev Env implemented for test and production processes
	Upgrade developer desktops								
	Customize TPF Toolkit, IDE	Install TPF Toolkit on developer workstations	Training on Modern Development Environment for all users						
S Y S	Detailed planning for user mods, inhouse packages, single source issues, hardware compliancy, etc		Apply user mods to z/TPF	Populate Modern Dev Env with modified code					
			Unoack z/TPF, Generate vanillia z/TPF system	Generate z/TPF with user mods applied	Testing of z/TPF, local mods, middleware, and in-house packages. z/TPF problem resolution		Problem resolution and reintegration into modern development environment.	z/TPF installed on production system	
	Planning for migration of middleware and other inhouse packages		Run conversion tools against code	Integrate converted code base into new development environment			Preparations for migration to production		

User Modifications

Understand areas of change

Systems, Operations, Applications, Development, Testing process

Understand the purpose of change

- Function of change
- Evaluation of change
 - Is it still needed?
 - Is there a z/TPF function that can be used as a replacement?
 - How much time/effort is needed to accomplish change?
 - Complexity of change?
 - Is change needed before IPL of z/TPF test system ?
 - Is changed needed in order for applications to begin testing ?
 - Can change be a post cutover item ?

Experiences

- Eliminate a number of user modifications
- Move to new functionality
- Take advantage of user exits

Changes to Support Structures

Console Automation

- Production and Test systems
 - New function (z messages)
 - Changed messages
 - New/changed processes

Coverage

- Production and Test
 - New functions. (z messages)
 - New monitoring
 - Changed output messages and codes

Application

- New/changed development process
 - Load process
 - Testing/Debug process
 - Problem analysis

Changes to Support Structure (continued)

Performance

- Understand current tool set and what is actually utilized
- Investigate new tools
 - TPF Profiles
 - Continuous Data Collection (CDC)
- Post migration tuning
 - Bundling programs for efficiency
 - ECB initialization
 - Program timeout values

Other items

????

System and Application Impacts

System

- In general, system impacts are easier to manage than application impacts.
 - 64-Bit implications, Dump analysis, z/TPFDF
 - Single Source – Before or during z/TPF migration

Application

- Many customers want to minimize impacts to applications.
- Application development/maintenance usually not controlled by systems group.

Testing – Testing - Testing

- Many customers do not have automated testing tools. Manual testing is still done by application programmers and field agents. Major system and application changes require many hours of testing.
- Provide a testing environment as soon as possible. Testing applications and systems can be done throughout the migration process.
- Think of ways to automate, simplify, minimize testing effort without reducing quality.
 - Testing automation adds value to future development/maintenance testing.
 - Automation adds value future regression testing.

Application considerations

Basic Assembler Language (BAL) segments

- Need to be 31 bit compliant
- Global usage
 - Minimize changes by using current global process
 - Investigate switching to new global process (format 2) post cutover
 - Some 24 to 31 bit concerns
- Little to no code changes needed for z/TPF migration
 - Mainly process changes in packaging code (e.g makefiles, control file attributes)

C/C++ segments

- Single source implications
 - Single source rules in TPF Toolkit help identify and automate changes needed.
- GCC compiler implications
 - Stricter compiler, compiler options can be different
- Packaging implications

Future direction

- Define and understand the future usage of applications
 - SOA, OO, Re-design

z/TPF Development Environment

Development Environment

- For most customers this is the most challenging aspect to migrating to z/TPF.
- Change in philosophy from a PDS based development environment to a modern integrated development environment.
- Systems maintenance is Linux based. Linux skills will be needed.
 - MakeTPF
 - Grep, Find, Permissions

Requirements

- Linux for zSeries
 - HLASM for Linux
 - GCC Compiler for z/TPF

Recommended

- TPF Toolkit Integrated Development Environment (IDE)
- Source Control Manager (SCM)

•Integrate/Sync TPF 4.1. code base with modern development environment

Education

Customized z/TPF Migration Planning Workshops can be scheduled in addition to standard z/TPF Education offerings

Pre-Migration Education:

- **Feature, Functions & Benefits of z/TPF** – A one day course presenting an overview of the features and benefits of z/TPF.
- **Web Services and z/TPF** – A two to three day course focusing on application conversion and Web Service opportunities.
- **Single Source Considerations** – A two hour presentation discussing the modifications to TPF4.1 programs that can be applied today to ease migration to z/TPF.
- **z/TPF101** – A two day course providing z/TPF concepts and structures.

Education (Continued)

Migration Education:

- **z/TPF Migration** – A one week course presenting a detailed overview of z/TPF internals.
- **z/TPF Dump Analysis** – A three and a half day course to assist customers in acquiring and analyzing z/TPF problem information.

Other z/TPF Courses:

- **Coding with z/TPF** – A one to two day course covering TPF's usage of the new z/TPF BAL instruction set.
- **z/TPF File systems** - A two to three day course covering the new file system capabilities of z/TPF.
- **z/TPF Toolkit** – A one week course focusing on the installation and customization of the z/TPF Toolkit.

Education (continued)

Other z/TPF Courses (continued):

- **TPF/AR Workshop** – A two day hands on workshop introducing the TPF Application Requester which is the TPF interface to DB2.
- **z/TPF TOS For System Administrators** – A two day course introducing the concepts, functions, installation and customization of the TPF Operations Server (TOS) to z/TPF systems.
- **z/TPF TOS for Operators** – A half day course introducing concepts of the TPF Operations Server (TOS) console automation environment to z/TPF operations personnel with emphasis on the client console.
- **z/TPF Assembler Programming Features and Enhancements** – A three day course detailing architecture used by z/TPF. Techniques for more efficient programming based on the new features are compared to older methods of TPF application programming.

General Recommendations

Get Started Today!

- There are many things that can be done before ordering the z/TPF product.

Forecast Dates for z/TPF migration

Single Source APAR's

- Apply today? Apply at cutover? What are the impacts?

Testing Tools

- Invest in tools that will minimize testing effort.

Set up a Linux for zSeries footprint

- Investigate using an IFL
- Install/Configure Linux distribution
- Decide to run Linux 'Native' or 'under VM'

Decide on Development Environment and related components

- Source Control Manager
- Integrated Development Environment

Betting on z/TPF

Can we help validate technical and business commitments to z/TPF?

- Migration planning...Migration Assistance...z/TPF Education
- Technical/Business value of z/TPF varies for each shop:
 - Modernize - newer technology path via SOA. Additional memory provided by z/TPF is key
 - Programmer Productivity – z/TPF Development Environment
 - Customer User Modifications – many installed in z/TPF
 - 100% Availability – Norm State Pool Reallocation will help
 - z/TPF new pricing methodology (WLC)
 - Greater Security

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Notes

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