

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 2006

Single Source Conversion using IBM TPF Toolkit

Andrea Rice

Development Tools Subcommittee

AIM Enterprise Platform Software

IBM z/Transaction Processing Facility Enterprise Edition 1.1.0

© IBM Corporation 2006

Any references to future plans are for planning purposes only. IBM reserves the right to change those plans at its discretion. Any reliance on such a disclosure is solely at your own risk. IBM makes no commitment to provide additional information in the future.

Single Source

- Goal: Create and maintain one set of source code that will run on TPF 4.1 and on z/TPF until migration is complete.
- Single Source APARs introduce changes into TPF 4.1 that are required for z/TPF
 - Allows the changes to be made to applications on TPF 4.1
 - Don't need two copies of application source.
 - Enables the same application source to be built for TPF 4.1 or z/TPF with minimal conditional code.
 - See migration guide for a list of single source APARs
- Other Single Source Changes
 - Not all required / recommended changes have an associated APAR.

Rules

- TPF Toolkit uses rules to identify areas of C/CPP and HLASM code that require review and/or changes in order to be single source compatible.
- Each rule has a unique ID and flags a particular type of single source error.
- Individual rules can be enabled and disabled allowing you to do migration in stages.

Conversion Overview

- General Flow



Invoking Scans

- Pop-up Menu Invocation
 - Project
 - Filter
 - Folder
 - File
- Command Line Invocation
 - Windows command line invocation through TPFTool API
 - For Example

```
tpftool -s MigrationScan -o \\MYHOST\u\ts12345\FolderA\MyApplication -d C:\temp\myresults.txt
```

- Validation
 - Scan when files are modified

Results

- Remote Error List View lists results


Filter matched 71 of 71 messages

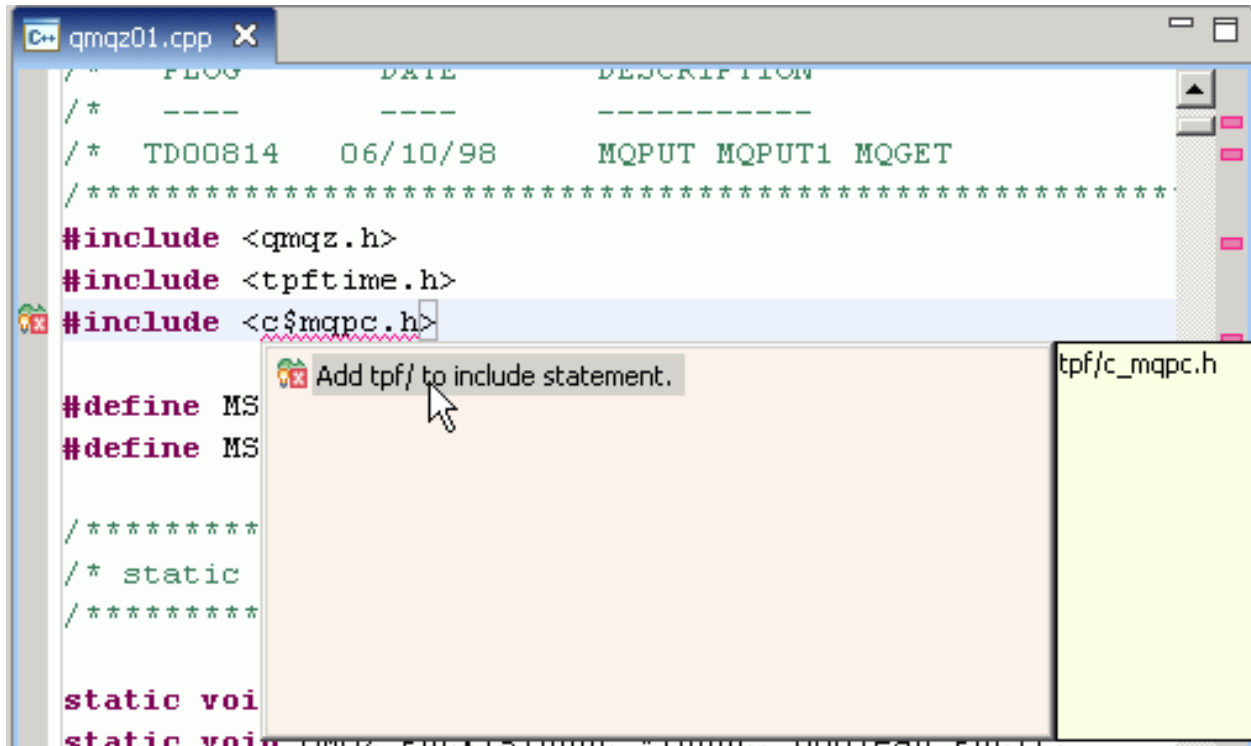
ID	Message	Sev...	Line	Locatic
OTRKYWDb	z/OS specific keyword ' <code>__cdecl</code> ' is obsolete on z/TPF.	9	68	/u/vaide/ari
PJ29593a	TPF-unique header files moved to <code>/include/tpf</code>	10	83	/u/vaide/ari
PJ29593d	<code>#include</code> statements with quotes may not be standard...	10	90	/u/vaide/ari
PJ29593a	TPF-unique header files moved to <code>/include/tpf</code>	10	91	/u/vaide/ari
PJ29593a	TPF-unique header files moved to <code>/include/tpf</code>	10	92	/u/vaide/ari
PJ29593a	TPF-unique header files moved to <code>/include/tpf</code>	10	95	/u/vaide/ari
PJ29593a	TPF-unique header files moved to <code>/include/tpf</code>	10	96	/u/vaide/ari
OTRLONGa	Use <code>int</code> instead of <code>long</code> because <code>long</code> changes from 4 b...	10	1160	/u/vaide/ari
OTRPRACa	#pragma support not supported on z/TPF	5	1000	/u/vaide/ari

Fix Methods

- Editors
 - Quick Fix
 - Manual Fix
- Remote Error List
 - Auto Correct
 - Compare file with Migrated version

Quick Fix

- Available while Editing
 - Look for light bulb 



The screenshot shows a C++ editor window titled 'qmz01.cpp'. The code contains several include statements and defines. A tooltip is displayed over the include statement `<c$mqpc.h>`, suggesting the addition of `tpf/` to the path. The tooltip text is 'Add tpf/ to include statement.' and the path `tpf/c_mqpc.h` is shown in a separate box to the right of the tooltip.

```
/*      PROG      DATE      DESCRIPTION
/*      ----      ----      -----
/*  TD00814  06/10/98  MQPUT MQPUT1 MQGET
/*****
#include <qmz.h>
#include <tpftime.h>
#include <c$mqpc.h>

#define MS
#define MS

/*****
/* static
/*****

static voi
static voi
```


Compare Files

- Compare file with migrated version action
 - Allows you to compare your file with a fixed version of the same file.
 - Features Include
 - Comments
 - Preference Page: TPF Toolkit > Migration to z/TPF > Actions

Compare Example

qmz01.cpp Compare (qmz06.cpp-qmz06.cpp) x

C Compare

Translation Unit

- Inq
- Inq
- c\$mqs.h
- tpf/c_mqs.h

C Compare Viewer

```
/*
/* PLOG      DATE      DESC
/* ----      ----      -
/* TDxxxxxx  mm/dd/yy
/*****
#include <qmz.h>
#include <c$mqs.h>

#define DEFAULT_MSG_BUFFER 200

static void Case1(), Case2(),
static void Case5(), Case6()

/*
/* PLOG      DATE      D
/* ----      ----      -
/* TDxxxxxx  mm/dd/yy
/*****
#include <qmz.h>
/*#include <c$mqs.h> */
#include <tpf/c_mqs.h>

#define DEFAULT_MSG_BUFFER 2

static void Case1(), Case2
```

Auto Correct Action

- Automatically updates files with fixes
 - Features Include
 - Commenting (Preference Page: TPF Toolkit > Migration to z/TPF > Actions)
 - Restore Files (Preference Page: TPF Toolkit > Migration to z/TPF > Restore Files)

Demo

- Single source conversion using TPF Toolkit
 - [Demo](#)

Command Line Invocation

- TFFtool commands
 - `tpftool -s MigrationScan`
 - `tpftool -s MigrationAction`
- Quick & Easy way to find and fix problems
 - [Demo](#)

TPF Toolkit Benefits

- Review changes before they are made
- Comments
 - Flag changed lines with a comment
 - Preserve original code as comments
- Enable / Disable Rules
- Maintain single source using validator
- Restore auto-corrected files from backups
- Problem markers stay with problems as files change.

Additional Resources

- Resources
 - TPF Toolkit Help
 - Installing, migrating, and configuring > Migrating > Migrating from TPF 4.1 to z/TPF > Converting to single source
 - TPF Info Center – Migration Guide

Trademarks

IBM is a trademark of the International Business Machines Corporation in the United States, other countries, or both.

Java and all Java-based trademarks are trademarks of Sun Microsystems, Inc. in the United States, other countries, or both.

Microsoft, Windows, Windows NT, and the Windows logo are trademarks of Microsoft Corporation in the United States, other countries, or both.

Linux is a trademark of Linus Torvalds in the United States, other countries, or both.

UNIX is a registered trademark of The Open Group in the United States and other countries

Other company, product, or service names may be trademarks or service marks of others.

Notes

All customer examples cited or described in this presentation are presented as illustrations of the manner in which some customers have used IBM products and the results they may have achieved. Actual environmental costs and performance characteristics will vary depending on individual customer configurations and conditions.

This publication was produced in the United States. IBM may not offer the products, services or features discussed in this document in other countries, and the information may be subject to change without notice. Consult your local IBM business contact for information on the product or services available in your area.

All statements regarding IBM's future direction and intent are subject to change or withdrawal without notice, and represent goals and objectives only.

Information about non-IBM products is obtained from the manufacturers of those products or their published announcements. IBM has not tested those products and cannot confirm the performance, compatibility, or any other claims related to non-IBM products. Questions on the capabilities of non-IBM products should be addressed to the suppliers of those products.

Prices subject to change without notice. Contact your IBM representative or Business Partner for the most current pricing in your geography.

This presentation and the claims outlined in it were reviewed for compliance with US law. Adaptations of these claims for use in other geographies must be reviewed by the local country counsel for compliance with local laws.