



TPF Toolkit

TPF Users Group - 2011 TPF Toolkit Updates

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Development Tools Subcommittee

AIM Enterprise Platform Software
IBM z/Transaction Processing Facility Enterprise Edition 1.1.0

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Updates

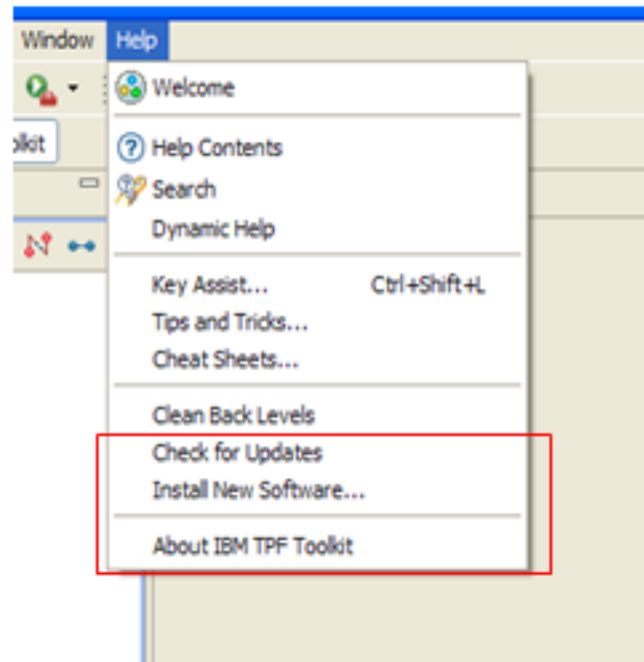
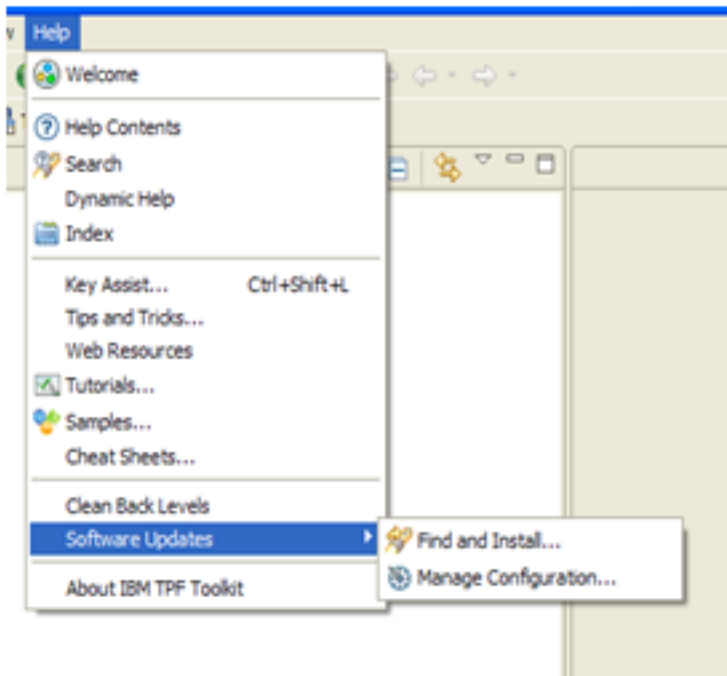
- **TPF Toolkit 3.6.0**
- **Interim Fixes**
 - TPF Toolkit 3.6.1
 - TPF Toolkit 3.6.2

TPF Toolkit 3.6.0

- **Based on Eclipse 3.6**
 - Support for Windows 7
- **Completely new update mechanism**
 - More robust and better performance
 - Will require re-generation of custom update sites
 - A new update site tutorial will help guide you through these changes

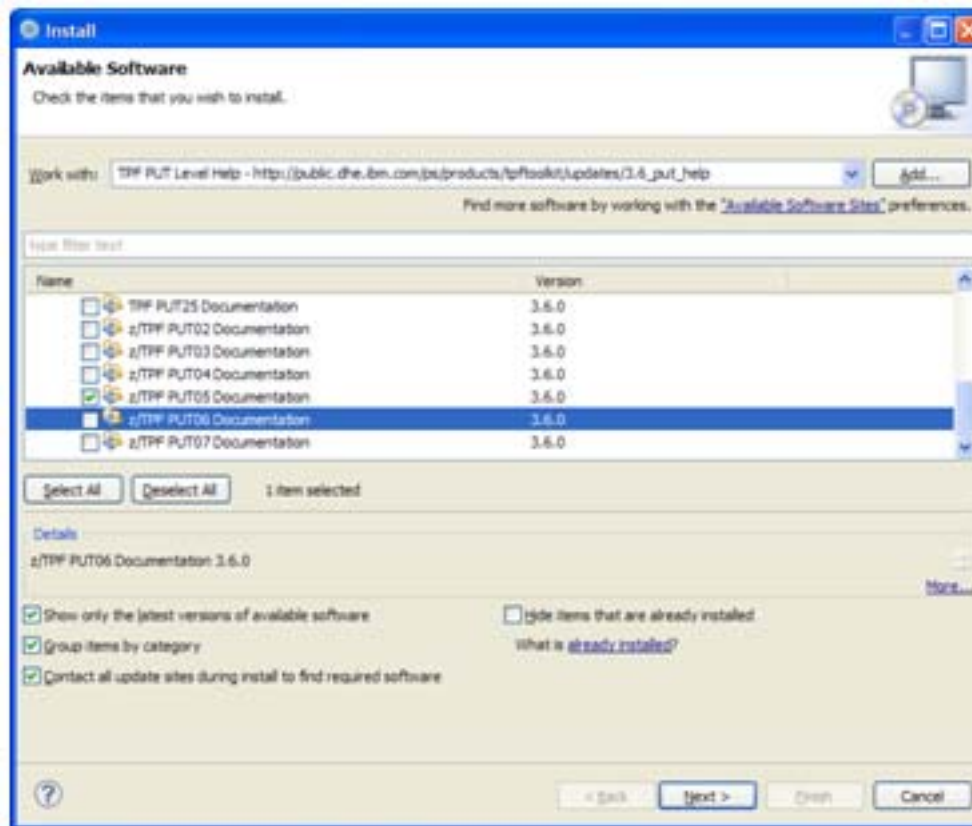
New update mechanism

- **Changes to update menu**



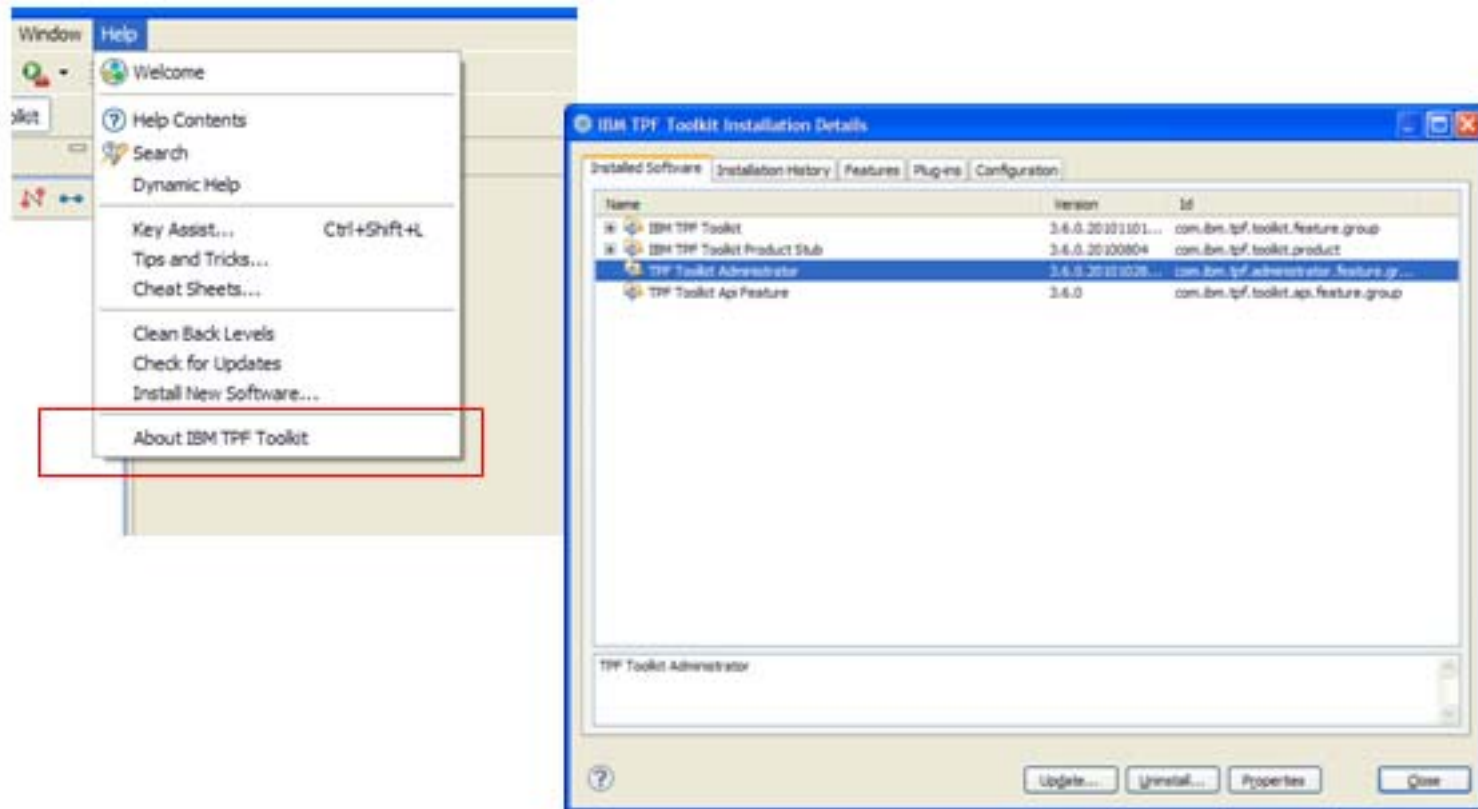
New update mechanism

- **Install New Software...**



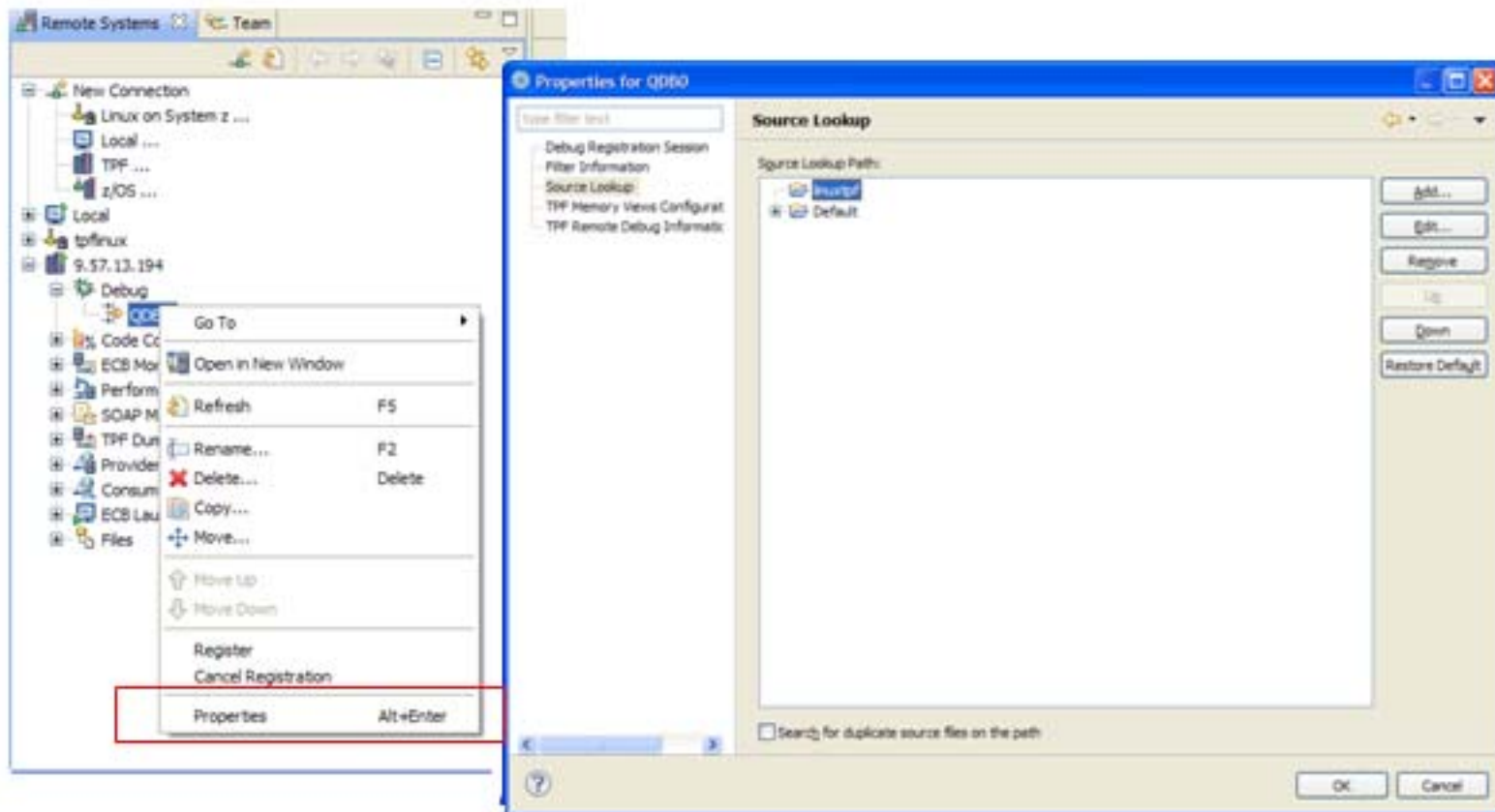
New update mechanism

- **Determine current configuration**



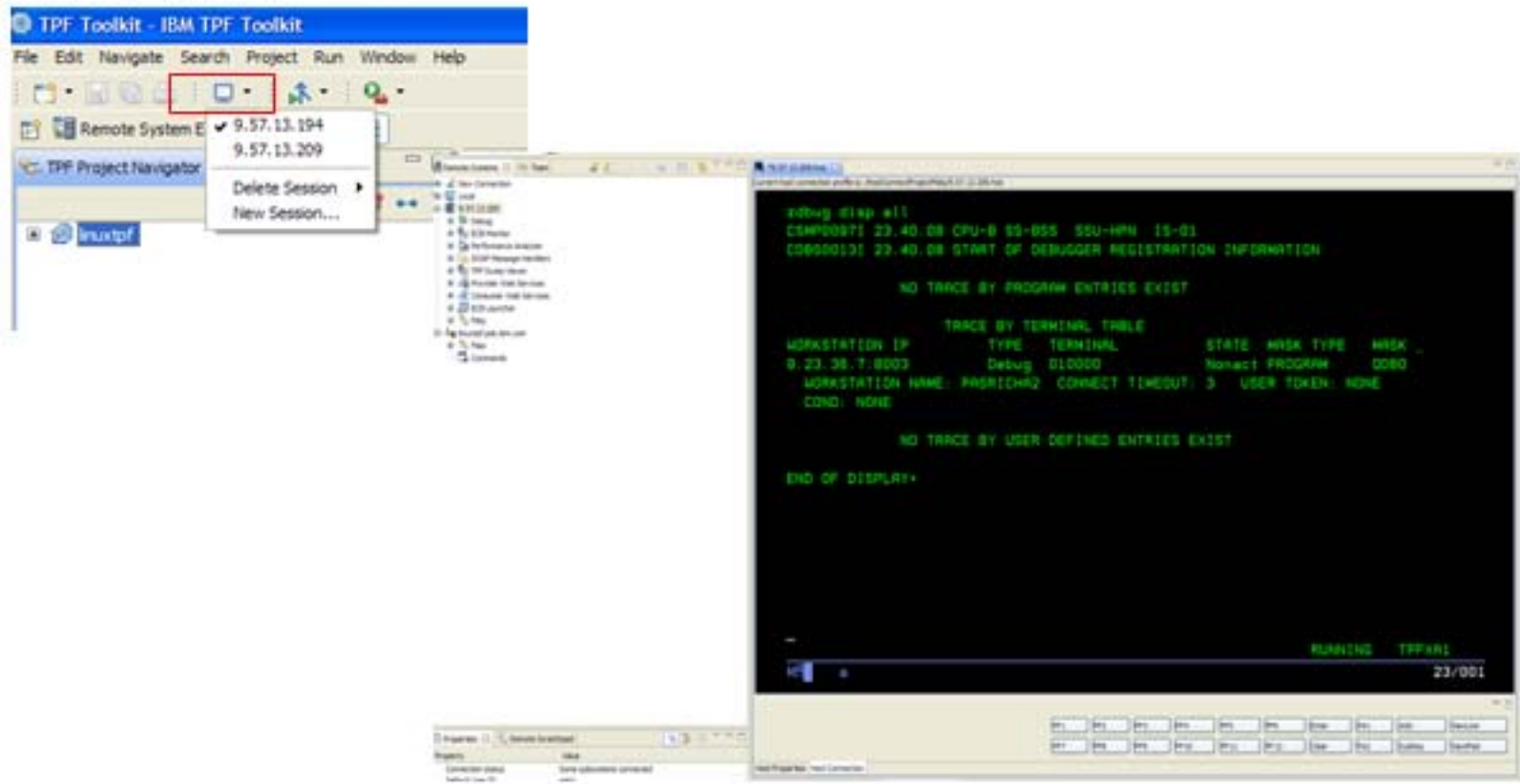
Associate Project with Debug Session

- **TPFUG Requirement V08067F**



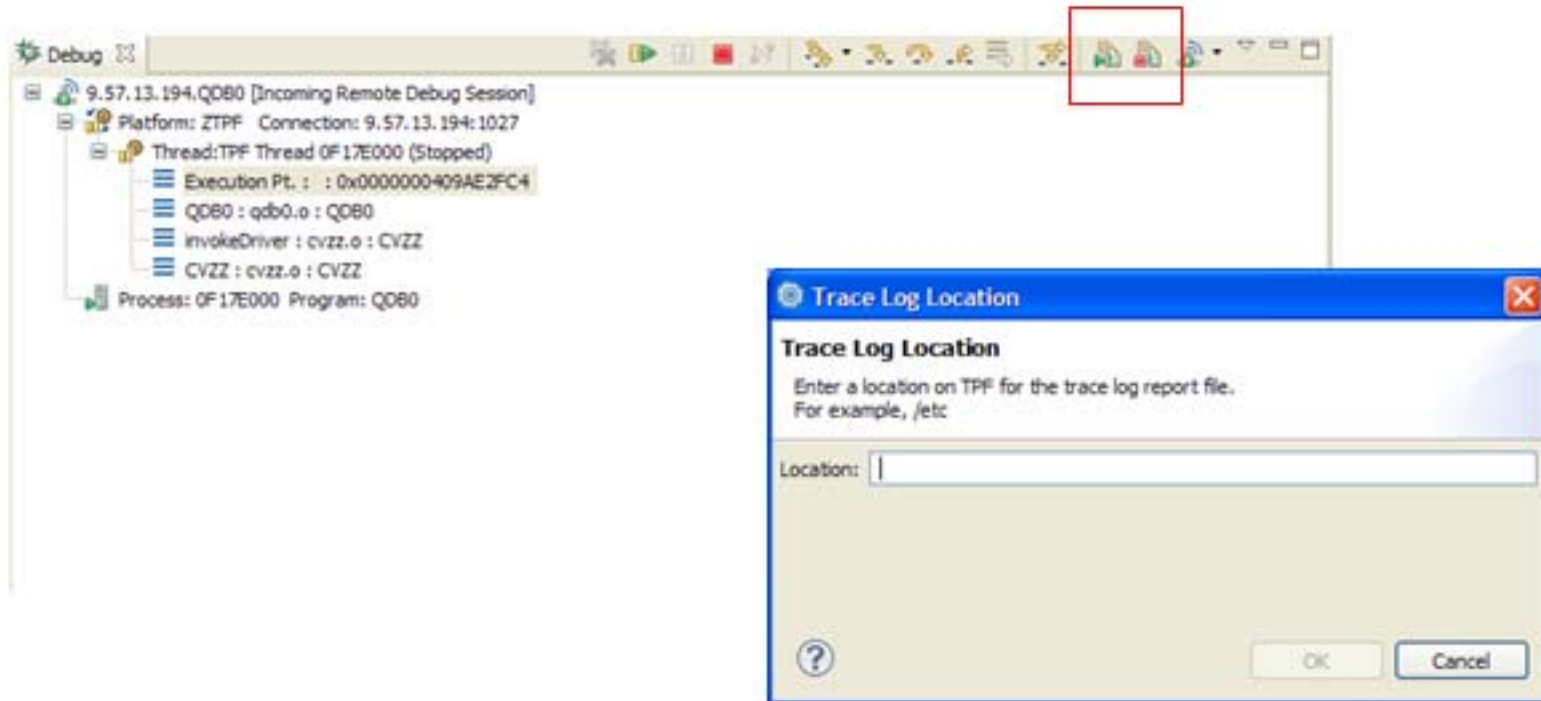
3270 Emulator support

- **TPFUG Requirement V08066F**



Enhanced TRLOG support

- **TPFUG Requirement V08037F**



GUI Trace Log View

- **TPFUG Requirement V9109S**

The screenshot shows a window titled 'C4HPFSCS03841Report'. The main area is a table with columns: Function call or Place, Trace Group, Load Module, Object Name, PSW, IS, Obj Dep, and Time stamp. The table lists various function calls such as EDWARC, CZPFC, KEYRC, PROGC, DHEAPC, and STRC. The 'STRC' entry is highlighted in blue. Below the table, there is a 'Property' section with a 'Value' column, showing details for the selected 'STRC' function, including its module (CVZ2), offset (486), and parameters.

Function call or Place	Trace Group	Load Module	Object Name	PSW	IS	Obj Dep	Time stamp
EDWARC	SH_DEPT	CTAL	edwarc	64F01 1	7A		May 28, 2009 18:49:06.634525
CZPFC	SH_DEPT	CVZ2	czpfc	64F01 1	0		May 28, 2009 18:49:06.634525
KEYRC	SH_DEPT	CTAL	keyrc	64F01 1	158		May 28, 2009 18:49:06.634532
PROGC	SH_DEPT	CVZ2	progc	64F01 1	0		May 28, 2009 18:49:06.634536
DHEAPC	SH_DEPT	CTIS	onelec	64F01 1	3EA		May 28, 2009 18:49:06.634685
DHEAPC	SH_DEPT	CTAL	cdheap	64F01 1	5C		May 28, 2009 18:49:06.634702
DHEAPC	SH_DEPT	CTIS	onelec	64F01 1	3EA		May 28, 2009 18:49:06.634718
DHEAPC	SH_DEPT	CTIS	onelec	64F01 1	308		May 28, 2009 18:49:06.634720
DHEAPC	SH_DEPT	CTIS	onelec	64F01 1	3EA		May 28, 2009 18:49:06.634742
DHEAPC	SH_DEPT	CTAL	cdheap	64F01 1	5C		May 28, 2009 18:49:06.634766
DHEAPC	SH_DEPT	CTIS	onelec	64F01 1	494		May 28, 2009 18:49:06.634777
STRC	SH_DEPT	CSO	strchr	64F01 1	28		May 28, 2009 18:49:06.634430
return from strchr	SH_DEPT	CSO	strchr	64F01 1	7C		May 28, 2009 18:49:06.634432
strtok	SH_DEPT	CSO	strtok	64F01 1	22		May 28, 2009 18:49:06.634435
strncpy	SH_DEPT	CSO	strncpy	64F01 1	22		May 28, 2009 18:49:06.634437
return from strncpy	SH_DEPT	CSO	strncpy	64F01 1	82		May 28, 2009 18:49:06.634438
strcpy	SH_DEPT	CSO	strcpy	64F01 1	22		May 28, 2009 18:49:06.634439
return from strcpy	SH_DEPT	CSO	strcpy	64F01 1	5C		May 28, 2009 18:49:06.634439
return from strtok	SH_DEPT	CSO	strtok	64F01 1	96		May 28, 2009 18:49:06.634440
__strcpy	SH_DEPT	CSO	strcpy	64F01 1	28		May 28, 2009 18:49:06.634442
return from __strcpy	SH_DEPT	CSO	strcpy	64F01 1	F0		May 28, 2009 18:49:06.634444
strtok	SH_DEPT	CSO	strtok	64F01 1	22		May 28, 2009 18:49:06.634446
strncpy	SH_DEPT	CSO	strncpy	64F01 1	22		May 28, 2009 18:49:06.634446
return from strncpy	SH_DEPT	CSO	strncpy	64F01 1	82		May 28, 2009 18:49:06.634447
strcpy	SH_DEPT	CSO	strcpy	64F01 1	22		May 28, 2009 18:49:06.634447
return from strcpy	SH_DEPT	CSO	strcpy	64F01 1	2C		May 28, 2009 18:49:06.634448

Property	Value
Function	strchr
From Module	CVZ2
From Object	CVZ2
Offset	486
Start line	56
Parameters	
const char*s	00000000119F0C2
int,i	71330018

Trace Log [Source]

GUI Trace Log View

- Trace Log Analysis

The screenshot shows the 'Trace Log Analysis' window with the following data table:

Caller	Total	BACKC	CINFC	CPLXC	DECBC	DETAC	EHEAPC	ENTRC	EOWNRIC	EXITC	GETCC	KEYRC	NDSPC	PROGC	RSWBC	TMSLC	WTOPC
CPVS	1	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0	0
CPS0	1	0	0	0	0	0	0	1	0	0	0	0	0	0	0	0	0
CVZZ	4	0	1	0	0	0	0	0	1	0	0	1	0	1	0	0	0
COXC	4	0	2	0	0	0	0	0	0	0	0	2	0	0	0	0	0
Q0B0	317	0	10	10	17	0	239	0	0	1	0	10	27	0	0	2	1
Q0B2	55	1	0	0	38	5	0	1	0	0	10	0	0	0	0	0	0
Q0B3	2	1	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0
Q0B0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1
Totals	385	2	13	10	56	5	239	2	1	1	10	13	27	1	1	2	2

Remote Index Search

- **Alternative to regular remote search**
- **2 step process**
 - Create an index for source to be searched
 - Search the index
- **Much faster than regular search**
- **Caveat: The index is static and must be updated regularly.**

Remote Index Search: What's new

- **Substantially smaller indices**
 - TPF Toolkit 3.4.x: 3 to 4 times the size of the source
- Next release:
 - Standard index: 1.4 to 1.6 times the size of the source
 - Compact index: 0.3 to 0.5 times the size of the source

Remote Index Search: Standard vs. Compact

Remote System Details | Tasks | Progress | Error Log | Remote Console | Remote Index Search

30 results found for 'int' in tpffruu:home/ankip/demo/* Index created: November 6, 2010 8:11:42 PM

Name	Canonical Path	Last modified	Size	Classification
libFLE.so (2 matches found)	/home/ankip/demo/lib/int/libFLE.so	March 17, 2009 11:32:28 AM	47,968 bytes	ELF 64-bit MSB shared object, IBM S/390, version 1 (SYSV)...
FILE.so (2 matches found)	/home/ankip/demo/load/int/FILE.so	March 17, 2009 11:32:28 AM	47,968 bytes	ELF 64-bit MSB shared object, IBM S/390, version 1 (SYSV)...
FLE.obj (4 matches found)	/home/ankip/demo/obj/int/FLE.obj	March 17, 2009 11:32:28 AM	137,911 bytes	ASCII text
file2.i (8 matches found)	/home/ankip/demo/obj/int/file2.i	March 14, 2009 2:57:46 PM	4,478 bytes	ASCII text
TEST.i (8 matches found)	/home/ankip/demo/obj/int/TEST.i	July 20, 2009 9:33:37 PM	4,629 bytes	ASCII C program text
18: #define __SIZE_TYPE__ long unsigned int				
20: #define __PTRDIFF_TYPE__ long int				
22: #define __CHAR_TYPE__ int				
24: #define __SIGNED_CHAR_TYPE__ int				
26: #define __INTMAX_TYPE__ long int				
28: #define __LDMAX_TYPE__ long unsigned int				
197: int gcc;				
201: int crap 1;				
TEST.lst (1 matches found)	/home/ankip/demo/obj/int/TEST.lst	March 17, 2009 11:32:27 AM	7,711 bytes	ASCII assembler program text
TEST.cpp (2 matches found)	/home/ankip/demo/src/TEST.cpp	February 2, 2010 8:49:25 PM	66 bytes	ASCII text

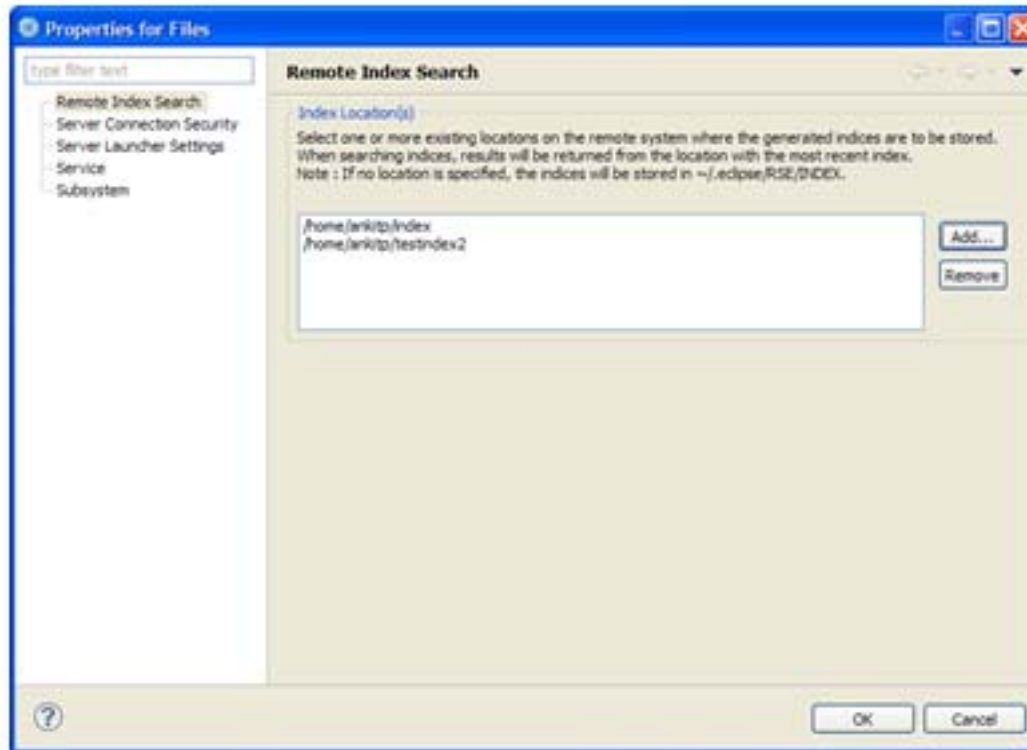
Remote System Details | Tasks | Progress | Error Log | Remote Console | Remote Index Search

11 results found for 'int' in tpffruu:home/ankip/demo/* Index created: November 6, 2010 8:14:37 PM

Name	Canonical Path	Last modified	Size	Classification
FILE.err 1 (1 matches found)	/home/ankip/demo/build/FILE.err 1	May 23, 2010 11:30:07 AM	508 bytes	ASCII text
FILE.out 1 (1 matches found)	/home/ankip/demo/build/FILE.out 1	May 23, 2010 11:30:07 AM	5,299 bytes	ASCII text, with very long lines
libFLE.so (5 matches found)	/home/ankip/demo/lib/int/libFLE.so	March 17, 2009 11:32:28 AM	47,968 bytes	ELF 64-bit MSB shared object, IBM S/390, versio...
FILE.so (5 matches found)	/home/ankip/demo/load/int/FILE.so	March 17, 2009 11:32:28 AM	47,968 bytes	ELF 64-bit MSB shared object, IBM S/390, versio...
FLE.obj (4 matches found)	/home/ankip/demo/obj/int/FLE.obj	March 17, 2009 11:32:28 AM	137,911 bytes	ASCII text
file2.i (8 matches found)	/home/ankip/demo/obj/int/file2.i	March 14, 2009 2:57:46 PM	4,478 bytes	ASCII text
TEST.i (8 matches found)	/home/ankip/demo/obj/int/TEST.i	July 20, 2009 9:33:37 PM	4,629 bytes	ASCII C program text
Line information not available				
TEST.lst (1 matches found)	/home/ankip/demo/obj/int/TEST.lst	March 17, 2009 11:32:27 AM	7,711 bytes	ASCII assembler program text
TEST.o (1 matches found)	/home/ankip/demo/obj/int/TEST.o	March 17, 2009 11:32:27 AM	4,184 bytes	ELF 64-bit MSB relocatable, IBM S/390, version ...
TEST.cpp (2 matches found)	/home/ankip/demo/src/TEST.cpp	February 2, 2010 8:49:25 PM	66 bytes	ASCII text
testScan.cpp (1 matches found)	/home/ankip/demo/src/testScan.cpp	February 25, 2010 4:06:03 PM	37 bytes	ASCII text

Remote Index Search: What's new

- **Multiple index locations**



Web Services Tutorial

Developing Web Services applications with IBM TPF Toolkit

This tutorial guides you through the steps required to create and deploy Web Services applications using IBM TPF Toolkit.

Objectives

This tutorial guides you through the steps required to create and deploy Web Services applications using IBM TPF Toolkit. There are two main sections to this tutorial.

1. Use TPF Toolkit to create and deploy a Web Services Provider interface for an existing z/TPF application.
2. Use TPF Toolkit to create and deploy a Web Services Consumer interface that consumes output from a Web Service and processes it with a z/TPF application.

Note: This tutorial is intended as a general guide to using TPF Toolkit V3.6.0 to create and manage Web Services interfaces to existing z/TPF applications. The specific characteristics of your current environment might require set up and steps that are not mentioned in this tutorial. Contact your IBM Representative if you require extra assistance.

Time required

This tutorial should take approximately 60 minutes to complete.

Before you begin

This tutorial assumes the following:

- Some knowledge of Windows® XP or Windows 7 Professional or Ultimate, and how to run applications on these platforms.
- TPF Toolkit has been installed on your machine and a connection to the remote Linux on System z host (on which you complete your development) has been established.
- A connection to a z/TPF system has also been established, where you can deploy and run the Web Services applications you are creating. This z/TPF system must have APAR PJ37673 or later installed.
- That you have completed the [Developing z/TPF applications with IBM TPF Toolkit](#) tutorial so you are familiar with how to set up and develop z/TPF applications using TPF Toolkit that take advantage of the MakeTPF build solution.
- The source files for the sample applications have been uploaded to the Linux on System z system. All of the source files for the sample Web Services applications reside in the `webservices.tar` file in the `extras\WebServices\` folder located in the TPF Toolkit product directory. By default, the TPF Toolkit product directory is `C:\Program Files\IBM\TPF Toolkit V36`. To upload the source files do the following:
 1. Upload the `webservices.tar` file to your Linux on System z system using a binary transfer mechanism like `ftp`.
 2. Extract the contents of the file using the `tar -xvf webservices.tar` command.

Note: The sample source files are structured to take advantage of the MakeTPF build solution. The `makepf.cnt` and the `proj makepf.ctg` files required to build these source files in TPF Toolkit are provided for your convenience. In the tutorial you are instructed to modify these files so they will work in your environment.

- Knowledge of Web Services concepts like Service Oriented Architecture (SOA), Simple Object Access Protocol (SOAP), Web Services Provider and Web Services Consumer.

Tip: Links to information relating to the above assumptions can be found in the Related concepts section below.

Section 1 - Create and Deploy a Web Services Provider application

Description

The z/TPF application provided in the `ws_provider` folder implements a Web Services Provider interface for the ZDTIM command. It originates from Chapter 6 of the IBM Redbook ["z/TPF and WebSphere Application Server in a Service Oriented Architecture"](#) SG24-7309. It is a simple application that returns the time when invoked. It consists of two C++ source files that are built into two CSO programs.

TPF Toolkit 3.6.1

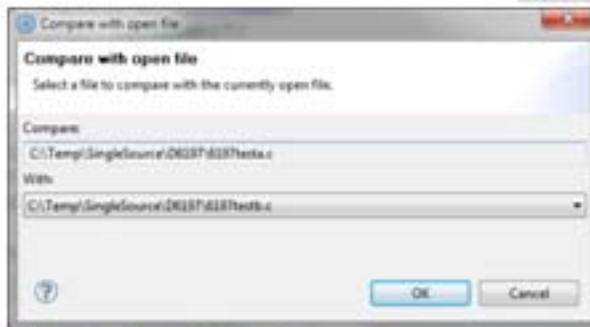
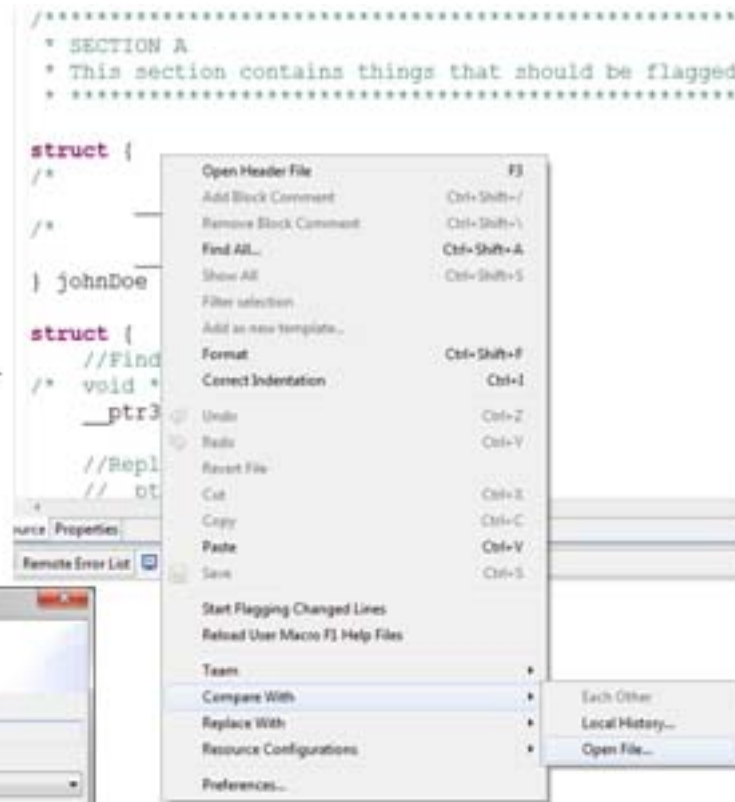
- **Source Scan Updates**
 - PJ32373a
 - PJ32373b
 - PJ32373c
 - RET6832a
 - PJ29593h
 - OTRCRSCa
 - OTRCRSCb
 - OTRREGSa
 - OTRREGSb
 - OTRPRAGd

TPF Toolkit 3.6.1

- **Remote Search**
 - Performance improvements
 - Better memory utilization

TPF Toolkit 3.6.1

- **Compare**
 - New TPFTool service
 - Compare With... action
 - Compare With Open File... action



TPF Toolkit 3.6.1

- **TPF 3-way merge**

- 2 New TPFTool services

- `tpftool -s TPFDirectoryMerge`

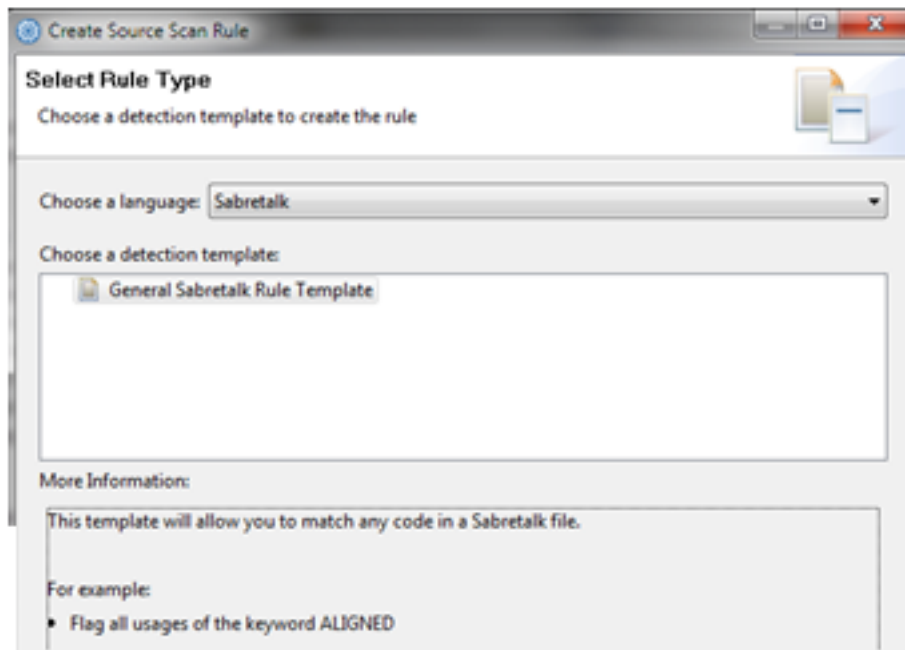
- `tpftool -s TPFFileMerge`

- Merge sessions can be saved and resumed

TPF Toolkit 3.6.2

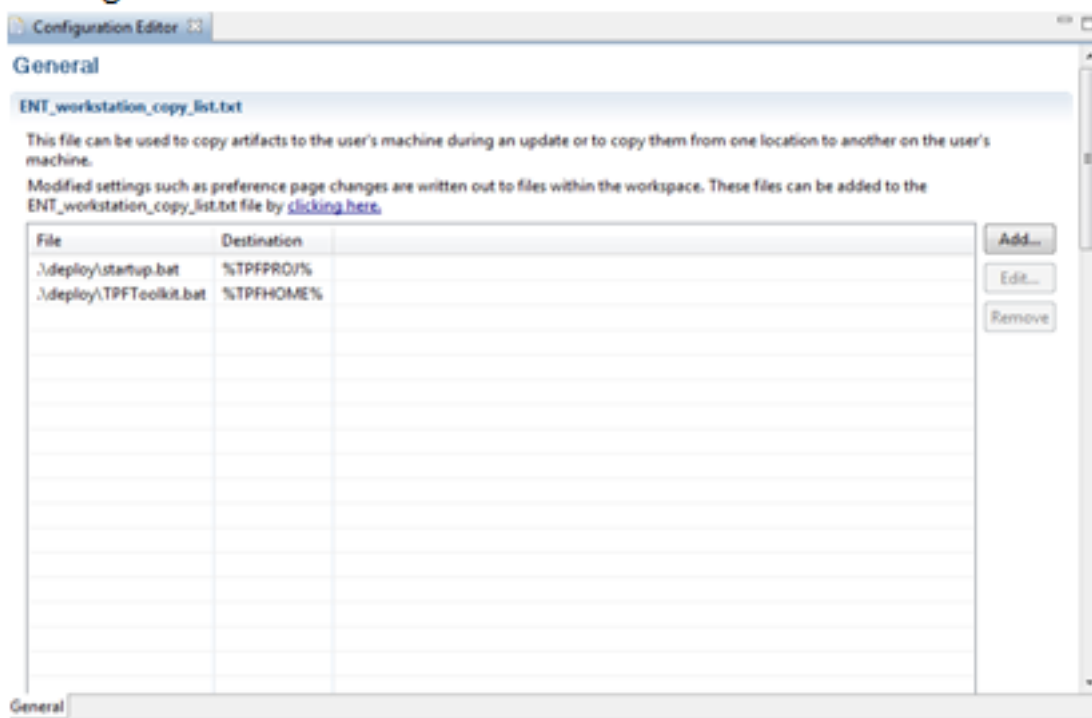
- **Source Scan Updates**

- Scan Sabretalk files with existing IBM HLAsm single source rules
- Create custom rules for Sabretalk files



TPF Toolkit 3.6.2

- **Administration experience**
 - New Configuration editor
 - Auto-detect files that need to be deployed for preference page changes



TPF Toolkit 3.6.2

- **System z LPEX editor enhancements**
 - Quick fix for an unrecognized macro
 - Open Declaration action

The screenshot shows the LPEX editor window titled 'asm_test.asm'. The editor displays a macro definition starting with 'MACRO' and '&LABEL deleteCFcache &p'. The macro body includes instructions: 'PUSH PRINT', 'PRINT GEN', 'LA R15,1', 'TM ICache_I_CF,L'ICache_I', 'BZ DEL&SYSNDX', and 'WOPC TEST'. A context menu is open over the 'WOPC TEST' instruction, showing the option 'Replace WOPC with WTOPC' (checked) and 'Change Target Environment'. The 'WTOPC TEST' option is highlighted in the menu. The editor also shows a grid with columns for 'Line 17', 'Column 1', and 'Replace 3'.

```

Line 17      Column 1      Replace 3
-----+-----+-----+-----+
MACRO
&LABEL deleteCFcache &p
PUSH PRINT
PRINT GEN
LA R15,1
TM ICache_I_CF,L'ICache_I
BZ DEL&SYSNDX
WOPC TEST
  
```

Replace WOPC with WTOPC
 Change Target Environment

WTOPC TEST

```

LA R1,ICache_I_CF_TknP
L R15,=V(@@CFCA02)
  
```

Questions

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