

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

TPF Toolkit updates

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Venue: Development Tools Subcommittee

AIM Enterprise Platform Software

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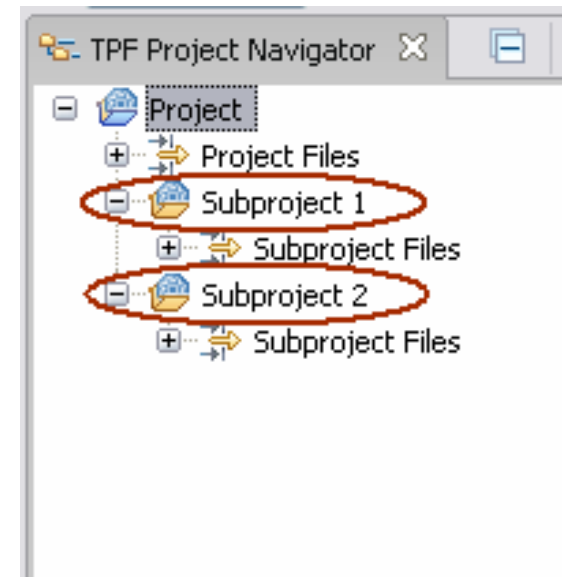
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TPF Toolkit V3.2

- Target release 2Q 2007
- Based on Eclipse V3.2.2
- New features
 - Subprojects
 - TPF debugger views
 - Source Scan Tool
 - Web Services Tools
 - V05002, V06002S, V06007S
- Bug fixes

Subprojects

- Subprojects are projects with a parent project
- Relationship with parent project includes:
 - Parent project dictates the list of applicable Target Environments
 - Parent project dictates the current/active target environment
 - Parent project action propagates to all subprojects
 - Subproject can override Target Environment settings



Subprojects

- Custom actions – just like project actions
- Build subprojects individually or build project to propagate build to all subprojects
- Build order is set at the project level



Subprojects

- How can you use subprojects
 - Use project to represent application, use subprojects to represent the subcomponents
 - Use one subproject for each module or shared object

TPF Debugger Views

- V06007F
- New views:
 - ECB
 - Data Level
 - DECB
- XML files in TPFSHARE directory for mapping memory and customizing view display

The screenshot displays the IBM TPF Debugger interface for a compiled application. The main window shows the source code for `qdb0.cpp` at line 30, which is highlighted in cyan. The code defines variables `num_parms`, `i`, `testcase`, `port`, `addr`, and `file`. The `port` variable is set to 7999. The interface includes a menu bar, a toolbar, and several panes: **Variables** (showing `port = 7999`), **Registers**, **Monitors**, **Modules**, **Breakpoints** (with an entry for `Entry [_Z18DataLevelFill testv]`), **Console**, **Tasks**, **ECB**, **DECB**, **Data Level**, **Debug Console**, and **Memory**. The **ECB Tree** and **ECB Dump** panes are visible at the bottom, showing a hierarchical view of memory segments and their contents.

ECB View

- Tree, Dump, and EBCDIC panes – can be toggled on/off
- Panes are linked
- Backing XML file can be modified and reloaded on the fly

The screenshot displays the IBM ECB View interface with three main panes:

- ECB Tree:** Shows a hierarchical tree structure. The 'W00' field is selected and highlighted with a red box.
- ECB Dump:** Shows a table of data. The value 'C4C2E4C7' is highlighted in the '8 - B' column. An arrow points from this value to the 'W00' field in the tree.
- ECB EBCDIC:** Shows the corresponding EBCDIC data. The value 'DEBUG' is highlighted in the '8 - B' column. An arrow points from this value to the 'C4C2E4C7' value in the dump pane.

Address	0 - 3	4 - 7	8 - B	C - F
B100000	CHW	00000000	BAD	00000000
B100010	008	80B00000	012	00000000
B100020	024	00000000	028	00000000
B100030	040	01000000	044	00000000
B100040	056	010000C2	060	80B00000
B100050	072	00008400	076	04000000
B100060	088	00000000	092	037C58C8
B100070	SW1	00000000	CM1	01000000
B100080	FA1	00000000		00000000
B100090	FA3	00000000		00000000
B1000A0	FA5	00000000		00000000
B1000B0	FA7	00000000		00000000
B1000C0	FA9	00000000		00000000
B1000D0	FAB	00000000		00000000

Data Level view

- Shows the contents of the 16 data levels.
- Backed by two XML files
 - XML memory map file to map memory for location
 - Display XML file for layout of the view

Name	Blk Addr	Blk Type	Blk Size	RID	RCC	File Addr	File Ext	SUD	Rec Held	DETAC Cnt
D0	0B106E80	0021	017D	0000	00	00000000	0000000000000000	00	No	00
D1	0B108000	0001	0FFF	0000	00	00000000	0000000000000000	00	No	00
D2	00000000	0001	0000	0000	00	00000000	0000000000000000	00	No	00
D3	0B106480	0021	017D	E7C9	00	102905A4	0000000000000000	00	Yes	00
D4	0B106C00	0021	017D	E7C9	00	102905A4	0000000000000000	00	Yes	00
D5	00000000	0001	0000	0000	00	00000000	0000000000000000	00	No	00
D6	00000000	0001	0000	0000	00	00000000	0000000000000000	00	No	00
D7	00000000	0001	0000	0000	00	00000000	0000000000000000	00	No	00
D8	0B106C00	0001	017D	0000	00	00000000	0000000000000000	00	No	00
D9	00000000	0001	0000	0000	00	00000000	0000000000000000	00	No	00
DA	00000000	0001	0000	0000	00	00000000	0000000000000000	00	No	00
DB	00000000	0001	0000	0000	00	00000000	0000000000000000	00	No	00
DC	00000000	0001	0000	0000	00	00000000	0000000000000000	00	No	00
DD	00000000	0001	0000	0000	00	00000000	0000000000000000	00	No	00
DE	00000000	0001	0000	0000	00	00000000	0000000000000000	00	No	00
DF	00000000	0001	0000	0000	00	00000000	0000000000000000	00	No	00

DECB view

- Contains information about the created DECBs
- Backed by two XML files
 - XML memory map file for location
 - Display XML file for layout of the view

Console Tasks ECB DECB Data Level Debug Console Memory

DECB Table

0xB108D20 : 0xB108EA0 <DECB Table>

Addr	Name	Blk Addr	Blk Type	Blk Size	RID	RCC	File Addr	File Ext	SUD	Rec Held	DETAC Cnt
0B108020		0B106600	0021	017D	E7C9	00	00000000102905A3	0000000000000000	00	Yes	0000
0B108D20	QDCA.FIWHC.FIND	0B106C00	0001	017D	E7C9	09	00000000102905A1	0000000000000000	00	No	0000
0B108DA0	QDCA.FIWHC.FILE	0B106A80	0001	017D	E7C9	09	00000000102905A2	0000000000000000	00	No	0000
0B108E20	QDCA.COPY.LEVEL	0B106900	0021	017D	0000	00	0000000000000000	0000000000000000	00	No	0000
0B108EA0	QDCA.COPY.DECB	0B106780	0021	017D	0000	00	0000000000000000	0000000000000000	00	No	0000
0B108F20		0B106A80	0021	017D	E7C9	00	00000000102905A3	0000000000000000	00	Yes	0000

TPF Debugger Views

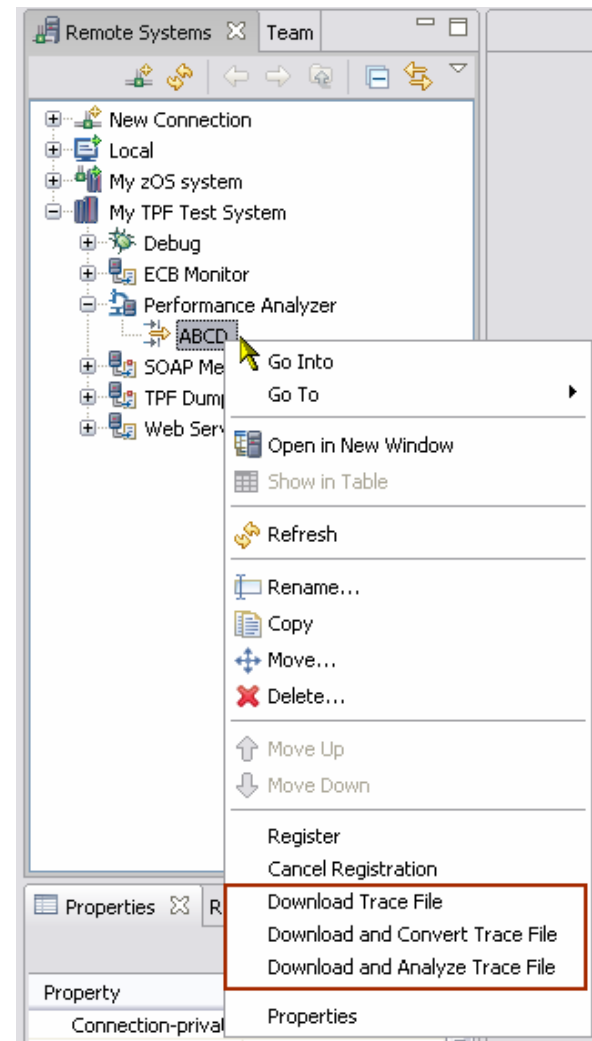
- TPF Debugger APARs:
 - TPF 4.1 PJ31891
 - z/TPF PJ31890
- More views?
 - SW00SR (DF structure)
 - Data Level DETAC lists
 - DECB DETAC lists
 - Others?

Source Scan Tools

- Based on existing Single Source Tools
- Scan projects/subprojects/filters/folders/files
 - Group rules for custom scans
 - Scan action on pop-up menu
- Validation
 - Tied to Target Environment settings
 - Re-scans files after changes saved in editor
- Create your own rules
 - Also provide fixes for errors flagged by rules
 - Scan with custom rules
 - Validate using custom rules
- Errors shown in Error List

Performance Analysis

- New client to analyze trace files
 - Uses XML based trace file format
 - Converter to convert TPF trace file format to XML trace file
- Actions in RSE to download, convert and analyze trace files
- Action in Project Navigator to convert and analyze trace files



Performance Analysis

- Documentation maps old PA client views to new views

The screenshot displays the 'Profiling and Logging - IBM TPF Toolkit' application window. The main pane shows 'Execution Statistics' for a trace file 'D:\trace files\mytrace.trc at TPF System'. The statistics are presented in a table with the following data:

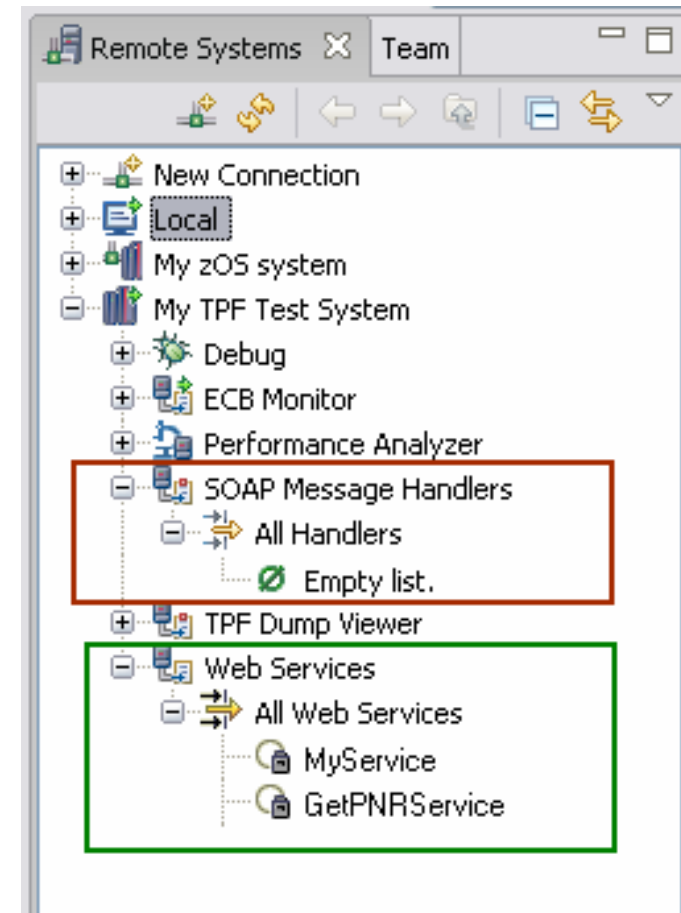
Function	Compile Unit	>Module	Base Time (sec...)	Average Base ...	Cumulative Tim...	Calls
printf	CISO	CISO	0.000857	0.000048	0.000857	18
exit	CISO	CISO	0.016157	0.016157	0.016157	1
getId(Zzz0id&)	idFunctions	ZDX2	0.000039	0.000039	0.000039	1
ZEX2	idCreation	ZEX2	0.001179	0.001179	0.018193	1
ZZZ0	ZZZ0	ZZZ0	0.000110	0.000110	0.000110	1

Web Services

- Wizards to help you create TPF Web Service resources
 - SOAP Message Handler Deployment Descriptors
 - Web Services Deployment Descriptors
 - WSDL file
 - Wrapper program template and makefile
- Actions
 - Deploy deployment descriptors to TPF
 - Generate wrapper program template and makefile
- Debug TPF Web Services

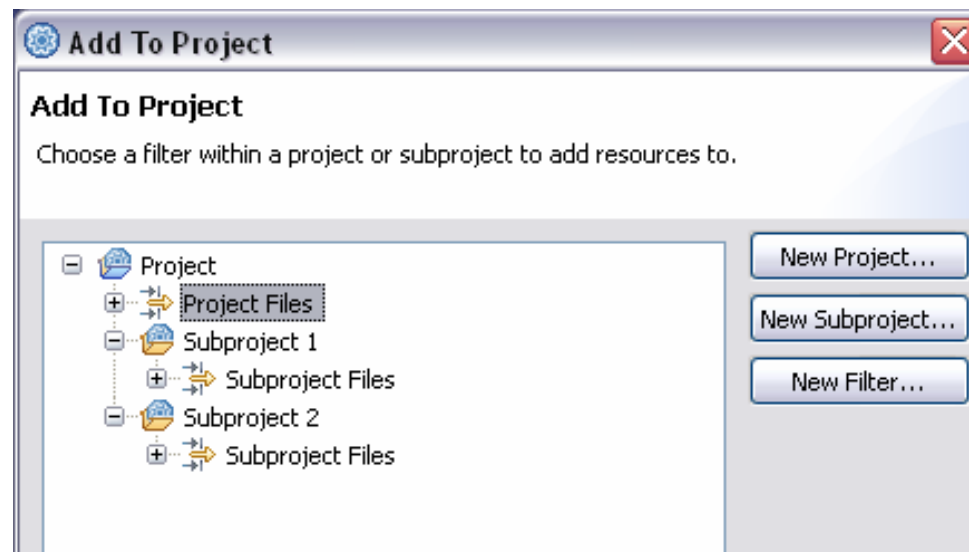
Web Services

- Two new subsystems in RSE
 - SOAP Message Handlers
 - Web Services
- List web services resources
 - Filter on TPF subsystem name
- Actions
 - Add
 - Remove
 - Deploy
 - Undeploy



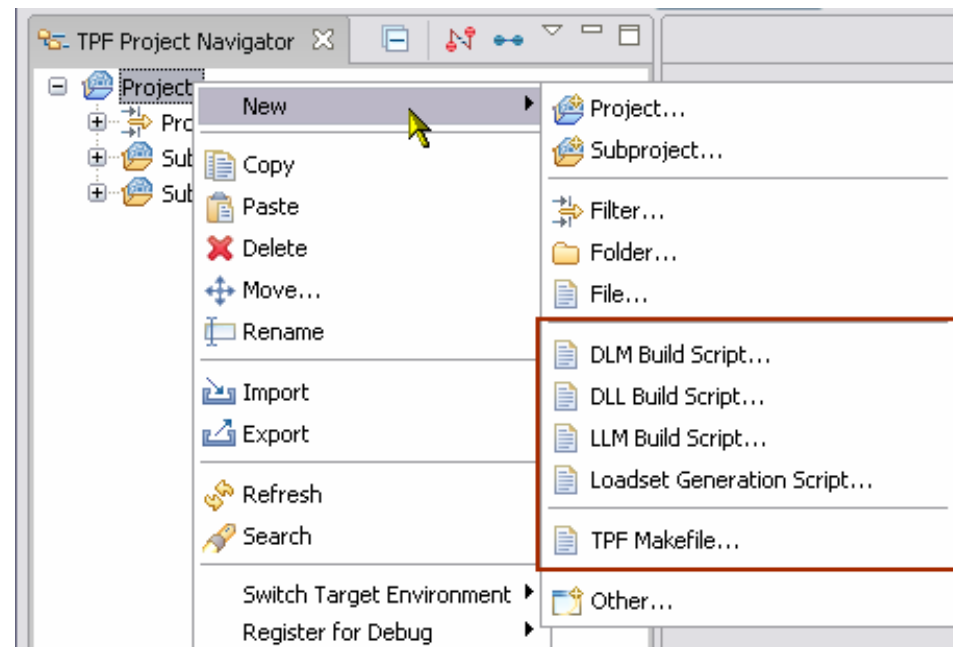
Requirements

- V05002
 - From RSE, add files/folders to project or subproject
 - Create new project, subproject or filter during add



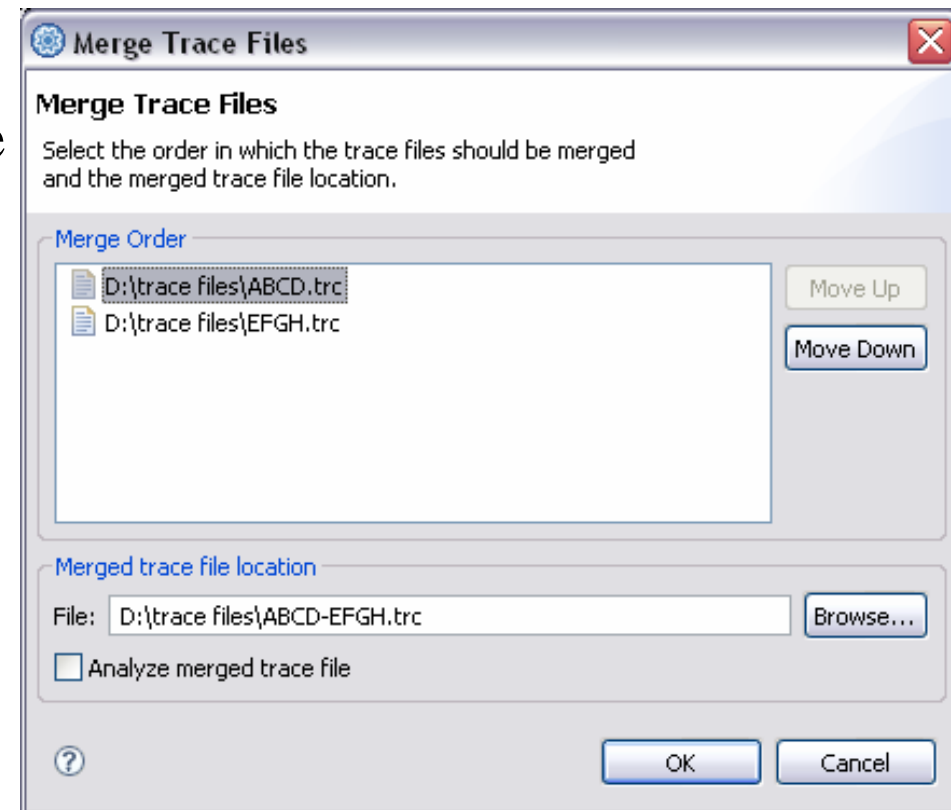
Requirements

- V06002S
 - Easier access to wizards to create new TPF Toolkit files



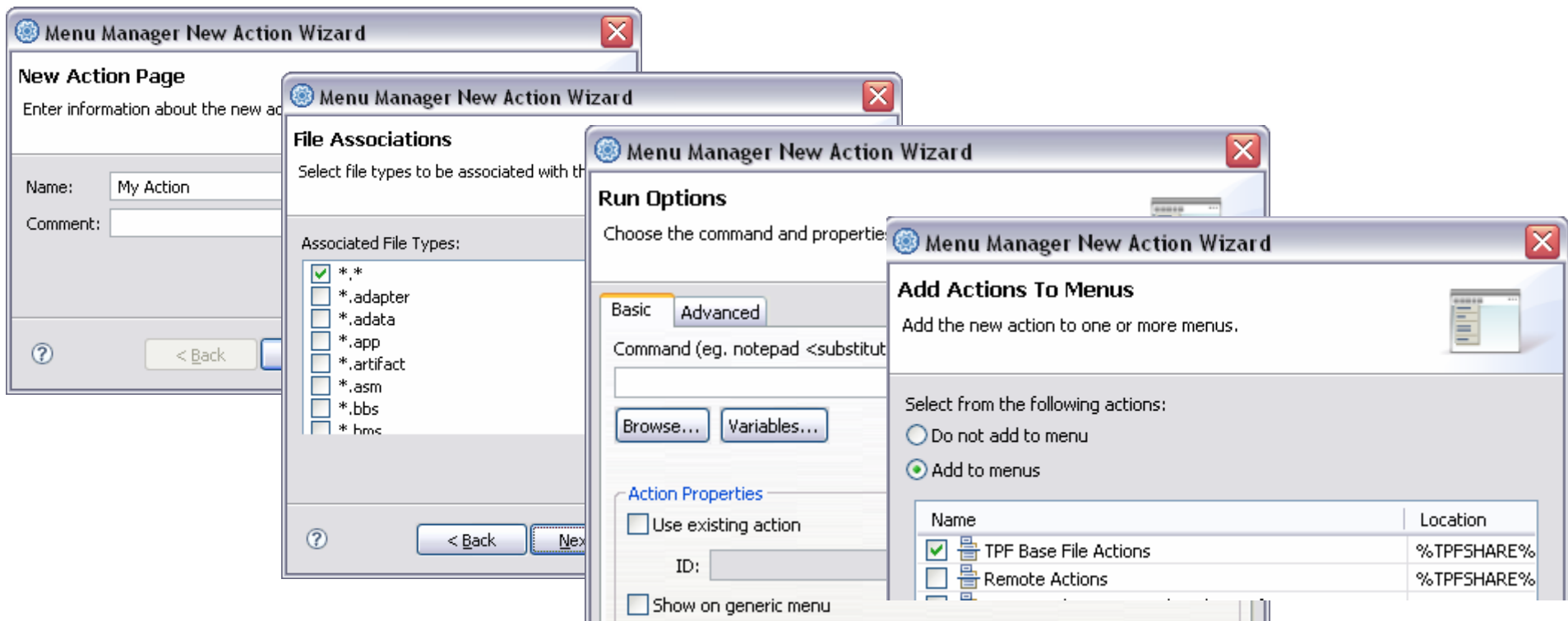
Requirements

- V06007S
 - New action to merge trace files
 - Control order in which the trace files are merged
 - Option to analyze the merged trace file after the merge



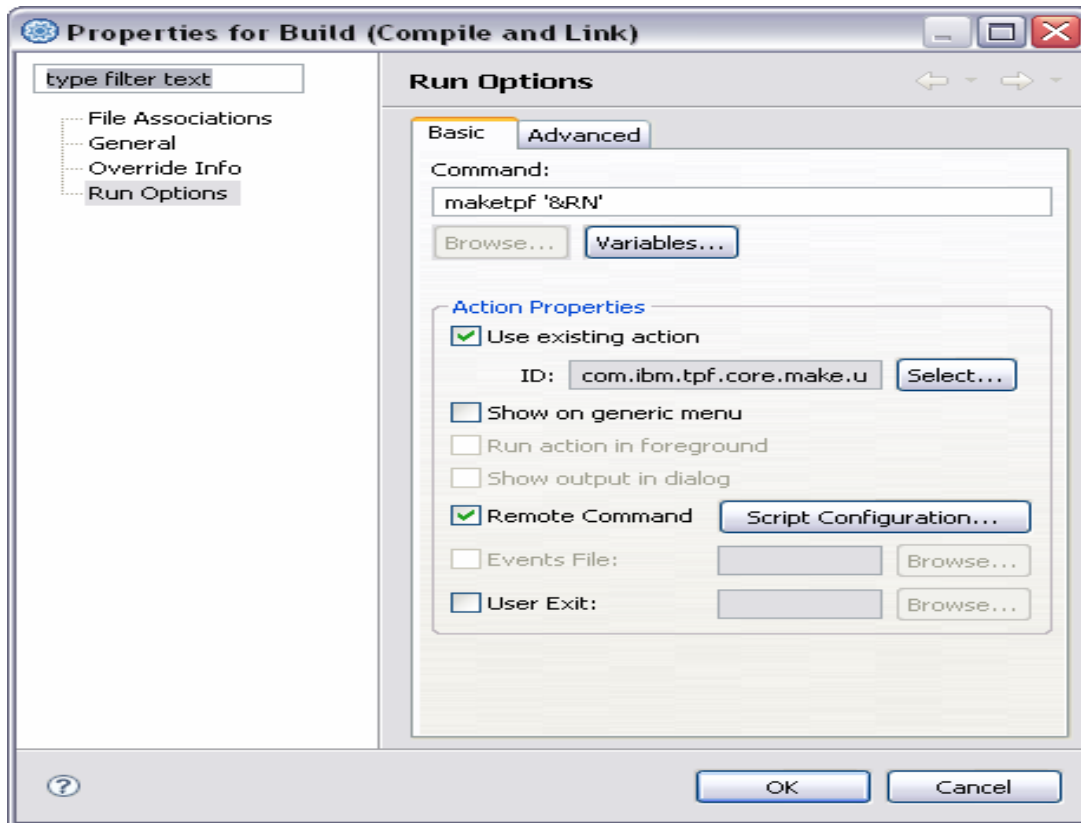
Menu Manager

- Multi-page wizards to guide you through action and menu creation



Menu Manager

- Multi-paged UI for editing actions



MakeTPF

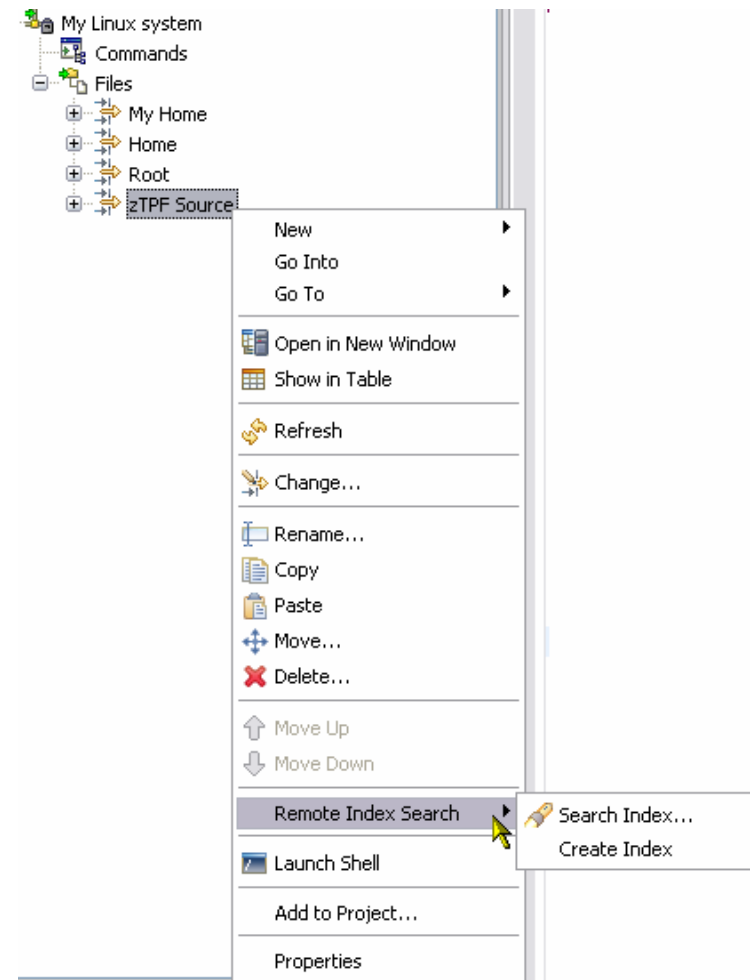
- Control files
 - New TIMESLICE column added to control file
 - PJ31515
 - Control files are now versioned
 - Version determines the number of columns and order of columns
 - TPF Toolkit shows all columns in control files and provides a graphical editor for control file entries
- Support for external project config file

Editor

- C/C++ Editor
 - Create template directly from editor
 - Select text, right click, add as new template
 - Templates available for selection in content assist
 - Improved performance for content assist
 - Support for column limit
 - New Properties tab in editor to view current context for file

Index Based Search

- Create token based index to speed up search
- Create index for entire application to speed up developer's research



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