



IBM TPF Toolkit V4.0 delivers significant development tools enhancements

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Overview

The TPF Toolkit integrates Transaction Processing Facility (TPF) application development with the Eclipse-based development environment. It supports development of applications for TPF and z/TPF. TPF Toolkit offers TPF application developers with state-of-the-art, workstation-based tools that are designed to be integrated and powerful, yet easy to use and easy to customize.

What's new in TPF Toolkit V4.0

- Adoption of IBM® Installation Manager to install and manage TPF Toolkit V4.0
- New wizards to support Business Events processing on z/TPF
- New wizards to support the creation and use of WebSphere® Operational Decision Management business rules on z/TPF
- TPF Toolkit Configuration Project, a simplified approach to creating and deploying customized versions of TPF Toolkit to your end users
- Code Coverage comparison tool that allows you to determine changes in coverage status over multiple runs of a test suite
- Support for negative filters in TPF Projects
- Enhanced fork support in z/TPF debugger
- Enhancements to Remote Error List to display MakeTPF linker errors on z/TPF
- Enhanced C/C++ content assist to support enumerations
- New Remote Error List API feature that provides users the ability to extend the Remote Error List and contribute custom messages
- Improved Eclipse compatibility for LPEX
- Remote Index search performance improvements
- Various printing options added to the Remote C/C++ editor
- Macro generation script on remote hosts

For ordering, contact Your IBM representative or an IBM Business Partner. For more information contact the Americas Call Centers at 800-IBM-CALL (426-2255). Reference: SE001

Key prerequisites

For details, refer to the [Hardware requirements](#) and [Software requirements](#) sections.

Planned availability date

December 13, 2012: Electronic and physical software delivery

Description

TPF Toolkit V4.0 delivers the following enhancements:

Adoption of IBM Installation Manager

IBM TPF Toolkit V4.0 has adopted IBM Installation Manager to manage installation of new instances of the product as well as handle updates and modifications to existing installations. The use of IBM Installation Manager standardizes the installation mechanism for TPF Toolkit to match various other IBM offerings. Moreover, it is now possible to share an environment between products such as IBM TPF Toolkit and Rational Team Concert™ (commonly referred to as shell-sharing).

Business Events wizards

A pair of wizards are created in TPF Toolkit V4.0 to allow users to generate business event specification files and business event dispatch adapter files. These files describe the particular structure of a business event generated on z/TPF and details about the event dispatchers on z/TPF respectively. The generated files can then be used on your z/TPF system to take advantage of the Business Events support in z/TPF.

Websphere Operational Decision Management wizards

Three new wizards are created to assist users in generating Websphere Operational Decision Management Rule Application Definition, Websphere Operational Decision Management Endpoint Definition and TPF Object Model Definition files. The Rules Application Definition file describes a collection of business rules that are available for execution from your z/TPF system. The Endpoint Definition file describes a group of one or more remote systems that have common Websphere Operational Decision Management artifacts deployed. Finally, the TPF Object Model Definition file describes a set of objects that can be consumed by Websphere Operational Decision Management business rules. The generated files can be used to take advantage of the Websphere Operational Decision Management rule engine support on z/TPF.

TPF Toolkit Configuration Project

The process of creating a customized version of TPF Toolkit that can be deployed to end users has been simplified considerably in TPF Toolkit V4.0. Administrators can now use the TPF Toolkit Configuration Editor to create and manage TPF Toolkit configurations. Once created, these configurations can be uploaded to a remote host to be consumed by end users. When a valid instance of TPF Toolkit connects to a remote host that contains a configuration, the user is notified that an update is available and can then take the appropriate action.

Code Coverage Comparison Tool

The Code Coverage feature in TPF Toolkit is an excellent tool to analyze test suites to determine the extent to which the tests cover the various components of your application. The tool displays the percentage of code executed at various levels of detail. The new comparison tool allows you to take the data from several code coverage sessions and determine how the coverage of your application has changed over these sessions.

Negative Filters in TPF Projects

In previous versions of TPF Toolkit, users specified files and directories to be included when creating a TPF filter. When this filter was expanded, these artifacts were visible and users could act upon them. With the introduction of negative filters in TPF Toolkit, users can now specify the files and directories to be excluded from a TPF filter. Consequently, the expanded filter will reveal all the files and directories in a particular location except for those that were previously excluded. Negative filters allow users to more conveniently specify a filter's contents through exclusions rather than specifying a list of all the inclusions.

Fork support in z/TPF debugger

The z/TPF debugger support for parent and child debugging allows you to automatically stop an entry control block (ECB) that is about to create a child ECB, and then select whether to debug the child process, parent process, or both. This interface has been enhanced to display additional options for the parent ECB in order to make the behavior of the debugger more explicit to the user. The options presented to the user are more closely aligned with the step into, step over, run, etc. actions. The improved interface will display various fork event information such as parent and child module names to the user so that the appropriate path in the debugger may be more easily chosen.

MakeTPF Linker Errors on z/TPF

The Remote Error List in TPF Toolkit displays errors and warnings that occur while performing MakeTPF builds on z/TPF. The Remote Error List is enhanced to show linker errors from MakeTPF builds on z/TPF in addition to any errors and warnings that are reported. By reporting all of the various types of messages from a build in a central view, users can more conveniently diagnose and fix potential build issues with their z/TPF applications.

Enhanced C/C++ Content Assist for Enumerations

The remote and local content assistants for C/C++ in System z® LPEX Editor and Remote C/C++ Editor have been enhanced to provide additional contextual information when providing proposals for enumerations. In addition to the standard enumeration proposals, the content assistants will now display the declaration of the enumeration in an information window to help the user in selecting the appropriate proposal.

Remote Error List API

The Remote Error List displays message markers generated from a build, source scan action, etc. and allows users to interact with these messages. With the newly added APIs, custom markers can be created and contributed to the Remote Error List. A listener can be attached to the Remote Error List to get a notification when the marker selection is changed in the view. Further, the new API can be used to configure the Remote Error List by adding, removing or reordering the columns in the view. Finally, it is also possible to use the API to create a custom tab so that the same type of markers can be grouped together.

LPEX Editor Enhancements

The Basic LPEX Editor and the System z LPEX Editor now include a new profile, which has improved key bindings for eclipse users. Traditionally, LPEX used various keys that were not similar to other editors in on the eclipse platform, but users can now choose the eclipse profile in the LPEX settings in order to have a more uniform experience across editors in the workbench.

Remote Index Search performance improvements

The Remote Index creation has been improved to better handle files with multiple code pages, allowing the user to configure the code page retrieval property to allow optimal performance. The buffer size for Remote Index creation can also now be configured to allow for improved memory usage and performance on the host, and

performance for creating indexes on folders and filters from the client has been improved to allow concurrent requests.

Printing options added to the Remote C/C++ editor

The Remote C/C++ Editor now supports unique printing options. A user may select a printing font or font size, different than that being used in the editor, as well as choosing to print line numbers, and a header or footer.

Macro generation script on remote hosts

A new script file is included with the host package in the /bin folder to generate HLAasm macro definitions that can be used by the HLAasm parser to provide content assist and syntax checking. The HLAasm syntax checker has added new options for disabling unknown macro checks, and the local syntax checking.

Accessibility by people with disabilities

A US Section 508 Voluntary Product Accessibility Template (VPAT) containing details on accessibility compliance can be requested at

http://www.ibm.com/able/product_accessibility/index.html

Section 508 of the US Rehabilitation Act

IBM TPF Toolkit V4.0 is capable as of December 13, 2012, when used in accordance with associated IBM documentation, of satisfying the applicable requirements of Section 508 of the Rehabilitation Act, provided that any assistive technology used with the product properly interoperates with it. A US Section 508 Voluntary Product Accessibility Template (VPAT) can be requested on the following website

http://www.ibm.com/able/product_accessibility/index.html

Product positioning

TPF Toolkit is built on the Eclipse application development environment.

The Eclipse project initiated when IBM donated the source code for their latest internal application development platform to the developer community by way of the open source Eclipse Public License. Currently, the Eclipse project is managed by a consortium of companies that includes IBM .

Eclipse is an open and universal tool platform. Eclipse is open source in that anyone can obtain the source code. Eclipse is universal in that it allows for near-infinite extensions to the integrated development environment (IDE) through the use of plug-ins.

For more information on the Eclipse project, visit

<http://www.eclipse.org>

IBM TPF Toolkit is an ideal product if you want to:

- Move up to the latest in application development technology based on the Eclipse application development environment
- Gain flexibility to integrate your own tools into the extensible integrated development environment
- Gain skills that are portable to other IBM application development tools based on Eclipse
- Benefit from the latest Eclipse implementation of tools that are ported to TPF Toolkit
- Be positioned to exploit new Eclipse technology in the future

TPF Toolkit continues to support programming of applications in C, C++, and High Level Assembler targeted to run on a TPF system. TPF customers are aware that assembler programmers are becoming scarce and more expensive. TPF Toolkit offers an excellent opportunity for TPF customers who want to expand their skills by starting to write more applications in C or C++, while simplifying their assembler programming environment.

Using the Java™ Development Tools (JDT) that are included within TPF Toolkit's development environment, TPF customers can write stand-alone workstation applications in Java . They can also use JDT to create Java plug-ins to extend the TPF Toolkit IDE.

Program number

Program number	VRM	Program name
5724-H79	4.0.0	IBM TPF TOOLKIT

Offering Information

Product information is available via the Offering Information website

<http://www.ibm.com/common/ssi>

Also, visit the Passport Advantage® website

<http://www.ibm.com/software/passportadvantage>

Publications

No publications are shipped with this program.

Technical information

Specified operating environment

Hardware requirements

Before attempting to install IBM TPF Toolkit, you must ensure that you meet the client system requirements for each workstation.

Each workstation must meet the following requirements:

- Intel™ Pentium™ III 800 MHz processor (minimum requirement).
- 1.2 GB disk space for the installation of the English national language version (NLV) including one copy each of z/TPF and TPF 4.1 PUT level documentation. More disk space may be required for the installation of other NLV support. Note that an Administrator who is customizing and deploying enterprise versions of the product will need an additional 550 MB of disk space for the Enterprise Deployment functionality.
- 512 MB RAM minimum (1 GB recommended if running multiple applications).
- 17-inch monitor.
- XGA display 1024 x 768 (minimum requirement).

Software requirements

Client programming requirements

- Microsoft™ Windows™ 7 Ultimate
- Microsoft Windows Vista Business or Enterprise
- TCP/IP (installed and configured)
- Hummingbird Maestro V10.0, or later (optional)

TPF system requirements

- It is recommended that the TPF system be at the latest PUT level for complete function and stability of the following components: debugger, performance analysis, web services and code coverage. The following lists the minimum system levels required.
- One of the following:
 - z/TPF V1.1: PUT 2, with the following APARs applied
 - For Debug: PJ31357, TPF Views APAR PJ31890, SW00SR View APAR PJ32221, and Registration Enhancements APAR PJ34615 (z/TPF), and PK77217 (z/TPDFD)
 - For performance analysis: PJ31771 and PJ31854
 - For web services: PJ31953
 - For code coverage: PJ37973 and PJ38995
 - TPF 4.1
 - PUT 15 or 16 TPF system with APARs PJ28041, PJ28176 (CXML), PJ27905, and PJ29430 applied.
 - PUT 17 TPF system with APAR PJ29430 applied. If this system already has APAR PJ28649 (merged Assembler/C debug capability) applied, then APAR PJ29585 must also be applied.
 - Debug: TPF Views APAR PJ31891, SW00SR View APAR PJ32240
 - TPF Views APAR PJ31891, SW00SR View APAR PJ32240

Linux™ on System z system requirements

- For detailed information on the development system requirements for z/TPF Enterprise Edition V1.1, refer to the z/TPF book available in the IBM TPF Product Information Center located at
<http://publib.boulder.ibm.com/infocenter/tpfhelp/current/index.jsp>

Detailed information can be found in z/TPF ->Reference->Migration->Operating system requirements and planning information->Software->Required Linux Software.

- Additional Linux on System z system requirements
 - TCPIP
 - REXEC or SSH server enabled
 - Optional, IBM Developer Kit for Linux Java 2 Technology Edition 5.0 (or higher) 31-bit or 64-bit zSeries® . This is required to run the Remote System Explorer. For more information, refer to
<http://www.ibm.com/developerworks/java/jdk/linux/download.html>
 - DFS - SMB (optional)
 - NFS (optional)
 - OpenSSH server that supports the SSH2 protocol (optional)
 - Note:** The OpenSSH server must be configured to use the SSH2 protocol and allow password and key authentication.

z/OS® system requirements

z/OS 1.12, or later, with the following installed

- OS/390® C/C++ V2R10, or z/OS C/C++ V1R12, or later.
- High Level Assembler.
- z/OS Communication Server (TCPIP with REXEC or SSH server enabled).
- IBM Ported Tools for z/OS (optional). This contains a ported version of the OpenSSH application, and is required if you want to access your remote host using the SSH protocol. After installing this product, you must enable OpenSSH to handle password and key authentication using SSH2. For more information, visit http://www.ibm.com/servers/eserver/zseries/zos/unix/port_tools.html
- Distributed file system - Server Message Block (SMB) (optional).
- Network File System (NFS) (optional).
- IBM 31-bit or 64-bit SDK for z/OS Java 2 Technology Edition, V5 or higher (optional). This is required to run the Remote System Explorer (RSE). For more information, visit <http://www.ibm.com/systems/z/os/zos/tools/java>

The program's specifications and specified operating environment information may be found in documentation accompanying the program, if available, such as a README file, or other information published by IBM, such as an announcement letter. Documentation and other program content may be supplied only in the English language.

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Planning information

Packaging

IBM TPF Toolkit V4.0 DVD

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Product identifier description	PID	Product group	Product category
IBM TPF Toolkit	5724-H79	IBM Application Integration Middleware Other	websphere

Charge metric

Program name	Part number or PID number	Charge metric
IBM TPF Toolkit	5724-H79	Authorized User

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Media pack description	Part number
IBM TPF Toolkit v4.0	BA15SML

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