



IBM Software Group

TPF Users Group Spring 2006

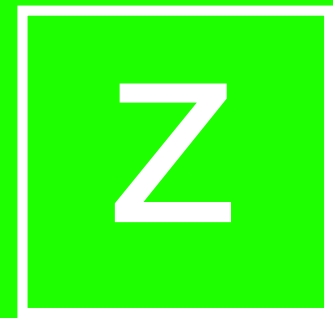
This, That, and Everything

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

HAVE BEEN RATED



New FACE Table (FCTB) Loader

- Previously:
 - ▶ Loading a new FCTB required an outage (TLD load)
- Now:
 - ▶ Can load a new FCTB in any state (including NORM state) on z/TPF
 - ▶ Can dynamically add new application record types
 - Coupled with NORM State Pool Reallocation (NSPR) allows you to add, expand, and use new pool types
 - ▶ Can activate (use) the new FCTB (no IPL required)
 - Can fallback to the old FCTB if the new FCTB is causing problems
 - ▶ Can accept the new FCTB (make it the base FCTB)

XML Document Processing Enhancements

- New APIs for applications to process XML documents, including:
 - ▶ SOAP request messages
 - ▶ XML documents outside the scope of SOAP
- APIs provide a higher level abstraction
 - ▶ Applications no longer need to work directly with low level structures such as *infnodes*
 - ▶ Example - can now find a specific element in the XML document and convert its data with a single API call
 - Applications used to have to traverse the *infnodes* structure directly to find the desired element
 - ▶ New APIs make it much easier for application programs to work with XML documents
- In many cases using the new APIs yields significant performance improvements compared to using the existing XML4C support
- New APIs for building XML documents, including SOAP reply messages
- Supported on both TPF 4.1 and z/TPF

Reduced Latency for Server Consolidation Applications

- IBM customers are looking to consolidate multiple operating system images into one server box (for example into one z990 or System z9)
 - ▶ Several advantages to server consolidation
- TPF customers looking to communicate with other systems (Linux on zSeries, z/OS, another TPF system) in the server box
 - ▶ Using TCP/IP across OSA-Express adapter shared by both LPARs
 - ▶ Application profiles include:
 - Real time applications (time sensitive)
 - Several flows per transaction ("chatty" protocols)
- Existing TPF support:
 - ▶ Optimized for very high message rates
 - ▶ Increased delays (latency) at lower message rates
- New support on both TPF 4.1 and z/TPF:
 - ▶ Dynamic blocking algorithm that results in small and consistent latency for a given message rate, even at low message rates
 - ▶ Allows you to deploy more distributed applications within one server box

File System Security Support - Statement of Direction

- Allows you to control operator access to files in the file system
- When the support is enabled:
 - ▶ Operators must log on to z/TPF via user ID and password to use commands like ZFILE that manipulate the file system
 - ▶ An operator's user and group ID determine which files this operator can access (read) and update (write)
- Can also be used to restrict certain operator commands to specific users or groups of operators
 - ▶ Any command, even those that do not use the file system
 - ▶ Can restrict the entire command or just certain sub-functions:
 - For example, could define ZINET ADD, ZINET ALTER, and ZINET DELETE commands as restricted to certain users while the ZINET DISPLAY command remains unrestricted

Current Cryptography Support on TPF

- Ability to protect data flowing across the network using Secure Sockets Layer (SSL)
 - ▶ Uses hardware acceleration if available
- APIs that enable application programs to encrypt/decrypt user data
 - ▶ Sensitive data that is stored in the TPF database (or on tape)
 - ▶ Sensitive data that is sent via private protocols to remote nodes
 - ▶ Supports DES and Triple-DES (TDES) algorithms
 - ▶ Uses hardware acceleration if available
 - ▶ Key management is user/application responsibility
- Trend is the more and more data will require encryption
 - ▶ New regulations, internal audit policies, and so on

Statement of Direction - Secure Key Management and Data Privacy for z/TPF

- Support new tape drive hardware encryption devices
 - ▶ IBM Tape Encryption Solution
- Provide secure key management capabilities
 - ▶ Create keys used only by TPF
 - For example, keys used to encrypt/decrypt data in the TPF database
 - Ability to change key values dynamically without any application program modifications
 - ▶ Import keys from a remote Key Repository or Key Manager
 - Keys that are used to exchange data between TPF and a remote platform
 - ▶ Protect value of keys such that they are not accessible to application programs, operators, coverage staff, and so on

Statement of Direction - Secure Key Management and Data Privacy for z/TPF

- Continue to support a high rate of crypto operations
 - ▶ For example, over 100,000 TDES operations per second on 4K of data on a single z/TPF processor
- Add support for the Advanced Encryption Standard (AES) algorithm
 - ▶ For use by SSL and user data encryption directly by applications
- Add APIs that enable application programs to detect if data has been altered by creating/verifying digests
 - ▶ Support both SHA-1 and SHA-256 digest/hash algorithms
- Add capability for applications to mark certain core blocks as "private" so that their contents are not displayable (including in dumps)
 - ▶ For example, decrypted data being used by an application program
- Summary of solution goals:
 - ▶ Capability to protect data flowing across the network, data at rest, and data in use on your z/TPF system
 - ▶ Provide traditional TPF scalability and performance characteristics

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