

Base z/TPF Enhancements – What's Next

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Agenda



Extended Access Volume support
Reduce dump time for large dumps

Problem Statement

z/TPF online DASD support allows records to be allocated on 65,520 (64K) cylinders. If business growth requires additional records to be allocated and all 64K cylinders are used, the only alternative to providing the addition records is to increase the number of DASD modules.

Hardware support to use more than 64K cylinders has existed for many years.

Pain Points

Adding DASD modules to increase capacity is painful and a lot of work

- Need a complex outage to increase the number of modules
- Might need to run multiple ODBRs to spread the records across the modules
- Need pool reallocation to add pool records

To-Be

Support extended access volumes (EAV or greater than 64K cylinders) in z/TPF.

- Online DASD modules only
- Support up to 1,182,006 cylinders per module
- Support allocation of all sizes of pool and fixed records (381 bytes, 1055 bytes, and 4K bytes)

To-Be

EAV will not be supported in the following

- 3380 and 3390 DASD modules in 3380 emulation mode will not support more than 64K cylinders
- General files will not support more than 64K cylinders
- General data sets, except for VSAM, will not support more than 64K cylinders

Value Statement

When additional DASD records are needed, EAV support allows the use of more cylinders on existing DASD modules.

- No outage is needed.
- Faster to implement than adding more modules.
 - Increasing DASD space can be done in weeks rather than months.
- Risk is less because the only changes are FCTB loads and a pool reallocation.
- This assumes that access rate of existing DASD modules is not an issue.

Target delivery date

The target delivery date is 4Q2022.

Agenda



Extended Access Volume support

Reduce dump time for large dumps

Problem Statement

z/TPF dumps that include all in use ECBs can take seconds to complete. No work is done on z/TPF while a dump is being taken. Customer impact will happen if a dump takes too long to complete.

Pain Points

- As more ECBs are allocated and used, the time needed to complete a large dump increases.
- Frequently, large dumps take longer than the maximum allowed dump time (ZASER MAXDUMPT). As a result, the dump stops before all memory areas are dumped.
 - Critical debug information might be missing from the dump.

As-Is

Processing of an ECB trace entry has overhead

- When an ECB trace event like a macro call happens, a small amount of information is saved in order to reduce overhead of using trace.
- Dump processing gathers additional information to enrich the trace data. For example:
 - Shared object name, object name, displacement into the object
 - C function name and C function parameters

As-Is

- To get the enriched information, dump processing calls internal macro GETCIC, get code information.
- The GETCIC is called for every ECB trace entry. Example:
 - 1000 in use ECBs
 - 110 trace entries (55 macro trace and 55 C function trace entries)
 - 110,000 GETCIC calls for a large dump
- Dump processing caches results from the last GETCIC call.
 - Provides some reduction in overhead, but a large amount of overhead still exists

To-Be

Provide a large cache of GETCIC results

- 20 MB of memory will be used to cache the results
- GETCIC results will be managed through a hash
 - First, check to determine if the results are in the cache
 - If not, then issue GETCIC and put the results in the cache
- The cache will be rebuilt for every dump because GETCIC results might vary from one dump to the next dump.
 - CRPA sweeper
 - Loadset activation and deactivation

Value Statement

Caching and reuse of diagnostic information reduces the overhead in dump processing. As the number of in use ECBs increases, the processing time required to complete a large dump is minimized and the impact to customers is minimized.

More likely that dumps will not time out and contain all the needed diagnostic information.

Target delivery date

The target delivery date is 3Q2022.

Thank you

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