Enable zHPF Support for Full-Track Operations (APAR PJ47087, Aug 2023)

System Control Program (SCPR)

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IBM Z

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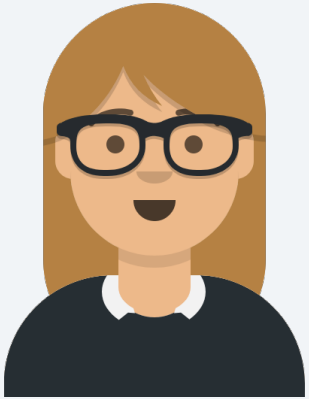
Problem Statement

Utilities like module copy that use full-track read and write operations do not use High Performance FICON® for IBM z Systems (zHPF). As a result, these utilities do not experience zHPF benefits of improved efficiency and lower latency.

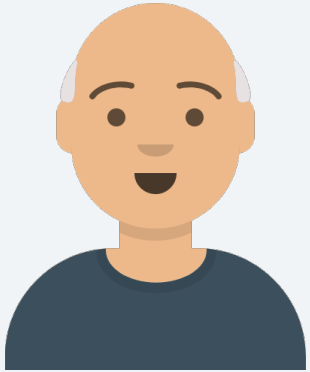
In z/TPF most single-record read and write I/Os to DASD use zHPF. Latency for single-record operations is significantly reduced when zHPF is used.

Users



Maria
Director of Operations

Maria is concerned about how long it will take to complete their DASD migration while also running daily utilities.



Calvin
Capacity Planner

Calvin worries if there is enough channel capacity to handle the next DASD migration.

Pain Points

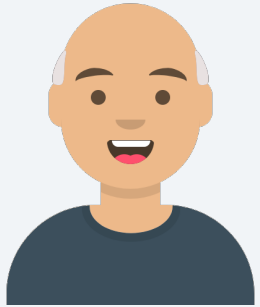
Module copy uses channel command words (CCWs) for full-track DASD I/Os. The use of CCWs is less efficient than zHPF and causes longer I/O response times and higher channel utilization.

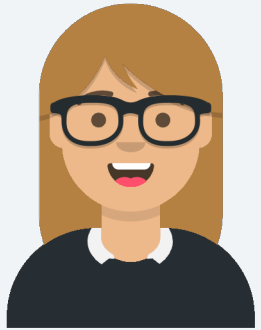
As-Is User Story

- Maria is managing a DASD migration for her z/TPF system of 2,400 modules.
- Each module has 70,000 cylinders.
- 100 copies can be done simultaneously.
- If it takes 30 minutes to copy each module, the migration will take about 12 hours to complete.

To-Be User Story

- zHPF will be used in place of CCWs.
- 2,400 modules will be migrated.
- Each module has 70,000 cylinders.
- 100 copies can be done simultaneously.
- If the use of zHPF reduces the module copy time by 25%, the migration should take about 9 hours to complete.





Technical Details

- There are no customer changes required to use this support. The support is automatically used when you apply the APAR.
- Like find and file, if the hardware indicates that it supports zHPF, the full-track I/O will be translated.

Technical Details

The following list provides examples of functionality that use full-track operations that will now get the benefit of zHPF translation:

- ZMCPY UP and ZMCPY ALL commands
- Recovery log I/O
- 48 KB keypoint I/O
- Prime duplicate module comparisons (ZMCMP)
- Capture and restore DASD I/O

Technical Details

In the TPF Lab we ran tests under the following conditions:

- ZMCPY UP
- 70,000 cylinder DASD modules

We observed:

- A **25%** reduction in time for module copy to bring a module online.
- A **23%** reduction in channel utilization while the ZMCPY UP was running as reported by data collection.

Your results will vary based upon your configuration and workload.

Value Statement

Extending zHPF translation to full-track operations will yield lower channel utilization and DASD I/O response times. As a result, utilities like module copy will complete faster.

Conclusion

APAR PJ47087 is available and was shipped in August of 2023.

Thank you

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