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SHARE_IMS_requirements_2020_Fort-Worth_Texas

SHARE_IMS_v15_WADS_zHyperLink_Write-IO_User_Requirements

https://www.share.org/page/requirements-faqs#

Concise one line Proposed Solution

IMS v15 WADS logging should use zHyperlink (ZHL) protocol supported by the DFSMS Media Manager I/O driver and ZHL for both reads and writes to boost performance.

Concise one line Problem Summary

IMS v15 WADS logging write I/O does not exploit DFSMS Media Manager zHyperLink I/O protocol even though DB2 logging does exploit this evolutionary performance advantage.

Component: **IMS v15 GA 2017-10-27**

Background

The IMS system software has exploited/relied upon the DFSMS Media Manager I/O driver for IMS *Fast Path* (4K CISZ) since IMS v2 in the late 1980s.

The IMS logging of read/write I/O to IMS WADS datasets is a response-time critical stage of transaction processing that is important to IMS thruput---even a thruput-limiting factor for an IMS subsystem.

Recognizing this reality the IBM designers of IMS v15 improved IMS v15 logging to make VSAM Linear Datasets (LDS, CISZ=4K) format the compulsory format for WADS datasets. Henceforth IMS v15 would broaden its exploitation of the DFSMS Media Manager I/O driver for IMS logging I/O to WADS datasets and thus leverage underlying features such as the ZHPF transport mode I/O protocol for improved logging performance and channel efficiency.

Problem Description

Need IMS v15 system software to leverage the subsequent evolutionary performance gains from DFSMS Media Manager support for zHyperLink (ZHL) I/O protocol: DB2 can do it. Shouldn't IMS?

At the time when IMS v15 designers adopted the DFSMS Media Manager I/O driver for WADS I/O the zHyperLink protocol ***may*** have been limited to Read I/O---and not yet able to support Write I/O. The IMS WADS is write-intensive so to IMS designers in 2017 the zHyperLink protocol may not have seemed beneficial.

But DFSMS Media Manager ZHL protocol support of qualifying Write I/O was available by mid-2019. Accordingly it is an IMS v15 deficit—a problem—that IMS v15 development has not yet followed through with exploitation of ZHL protocol for IMS v15 WADS I/O.

DB2 supports an I/O performance feature called *zHyperWrite* for Metro Mirror configurations even when the secondary is within 150 meters. So does IMS v15.

DB2 supports zHyperLink for read I/O and for write I/O. But IMS v15 does not.

Some transactions update both DB2 and IMS resources and so if IMS logging can not keep pace with DB2 logging that is exploiting zHyperLink then IMS could be the limiting factor in thruput.

Use Case: What is the impact if the vendor does not provide a solution?

On Business

If IMS v15 developers do not provide a solution in the service stream then a perception is being created that IMS is being eclipsed by DB2. A company might choose to phase out IMS.

On the End User

The impact on end-users is too indirect to matter to them—although end-users will notice when response times do not meet their expectations or when transaction processing systems with millions of mobile end-user nodes are thruput-limited.

Are there alternatives that have been implemented or considered?

DB2 is always being considered as an alternative to IMS.

Suggested Solution:

IMS v15 developers should consider fulfilling the IMS designers' vision for WADS in Linear Dataset format and broaden IMS's existing exploitation of the DFSMS Media Manager I/O driver to leverage zHyperlink (ZHL) for IMS WADS. Then, with that GA, IMS developers should consider ZHL for IMS databases defined in the format(s) supported by DFSMS Media Manager I/O driver. For instance, DB2 objects in linear datasets with 4K CISZ are capable of leveraging ZHL.   Can IMS do it too?

Key Words: IBM IMS v15 WADS logging performance thruput throughput latency ZHPF DB2 DFSMS Media Manager I/O driver zHyperLink ZHL sysplex online RRS transaction