



Q. What is zIIP?

- A. zIIP (IBM® System z® Integrated Information Processor) is a specialty mainframe processor designed to help free up general computing capacity. By exploiting zIIP, CA can help you deliver more computing capacity and throughput without additional system hardware resources. CA's support for zIIP can thus help you lower your TCO (total cost of ownership) on the mainframe.

Q. How is CA supporting the IBM zIIP specialty processor for CA IDMS™?

- A. CA IDMS r17 makes wide use of the zIIP engine, which IBM originally introduced to handle specific types of processing workloads. CA IDMS r17, however, enables you to direct a much broader set of functions to the zIIP. In fact, portions of all typical CA IDMS production workloads—including those generated by online transaction systems, batch processing jobs and distributed platform requests—can exploit zIIP capacity to offload processing that would otherwise occur in the Central Processor's CA IDMS address space.

Because significant portions of all these CA IDMS r17 workloads can run on zIIPs, you can better leverage zIIP capacity to scale your database environments without incurring expensive hardware upgrades. This is in marked contrast to DBMS solutions from other vendors that either limit the types of workloads that can be offloaded—or that fail to utilize zIIP all together.

Q. Is the CA IDMS zIIP feature an extra-cost option?

- A. No. zIIP support is included with CA IDMS r17 for z/OS® at no additional cost. It's like a capacity dividend!

Q. What workloads can I expect to run on the zIIP? Will certain types of workloads benefit more than others?

- A. All types of CA IDMS Central Version (CV) workloads can take advantage of zIIP. Any type of CA IDMS CV system mode processing except for physical I/O processing, SVC processing, and user-written exit execution can be redirected to a zIIP, but user mode work is not eligible. There are no restrictions on the types of CA IDMS database and systems work that are eligible. Certain workloads—such as when the CA IDMS region is being used as a database server—may see better exploitation due to the types of DB/DC requests and availability of the processor.



Q. How can I tell if I will benefit, and to what extent, from exploiting the zIIP processing feature?

- A. *CA IDMS Release Summary r17* section 4.5, zIIP Exploitation, discusses usage of the zIIP feature to estimate potential offload benefit. You can estimate potential zIIP redirection by specifying ZIIP=Y at startup when no physical zIIP is present and using CA IDMS and system statistics as described in this section.

zIIP usage and estimation are also discussed in *CA IDMS Release Summary r17* section 7.10 (New Startup Parameters), *CA IDMS Installation and Maintenance Guide – z/OS*, *CA IDMS System Operations Guide*, and *CA IDMS System Tasks and Operator Commands Guide*.

Q. How can I estimate how much of the zIIP I might be able to use? What metrics will help me decide whether we should invest in one or more zIIP processors?

- A. As stated above, *CA IDMS Release Summary r17* section 4.5 (zIIP Exploitation) discusses usage of the zIIP feature and section 4.5.4 describes the steps to estimate potential offload benefit. You must install CA IDMS r17 in order to estimate the benefit of the zIIP feature.

Q. Can I control the amount of CA IDMS work offloaded to the zIIP processor?

- A. You can control offloading to the zIIP by specifying zIIP support as on (ZIIP=Y) or off (ZIIP=N). You can control how many zIIPs are available to your LPAR, but there is no additional control at the workload level.

Q. Is there any performance overhead associated with moving work to the zIIP processor?

- A. Yes. With the introduction of any additional processor, there is some overhead, such as additional code checks that enable exploitation of the added processor. The overhead is similar to that incurred when another processor is introduced in a multiprocessor environment.

Q. What is the performance gain of this feature?

- A. CA IDMS r17 represents the initial implementation of zIIP support. CA ran a number of laboratory tests using credit/debit transaction applications based on TPC-B benchmarks, which



showed that the primary benefit was in database processing. That is, when the CA IDMS region is being utilized as a database server.

The best results—as measured by percentage of CP processing offloaded to the zIIP and the amount of white space created on the CP—were found with batch/CV processing, CICS®/DML requests, JDBC and ODBC distributed requests, CA IDMS™/DDS requests and any kind of external request processing to the database engine. A system architected with CA IDMS application-owning regions (AOR) making requests to CA IDMS database-owning regions (DOR) may also see significant benefits.

CA IDMS™/DC and CA ADS™ online applications that execute in the same CA IDMS region as the database will see less benefit because user mode code is not eligible for zIIP and cannot be offloaded.

Overall results ranged from a benefit of 2% to 30%.

Your actual benefit may vary depending on your mix of CA IDMS work—online, batch, CICS, CA ADS, COBOL, Web, JDBC, ODBC, CA IDMS/DDS, etc. We encourage you to install CA IDMS r17 and test it in your environment to determine your expected benefits. We are very interested in any testing results you can share with us as we move forward with this innovative feature.

Q. How do I turn on the zIIP processor feature in CA IDMS?

- A. The zIIP feature is turned on by using the new ZIIP startup parameter and specifying ZIIP=Y. Usage of the zIIP feature is documented in *CA IDMS Release Summary r17*, section 4.5 (zIIP Exploitation) and section 7.10 (New Startup Parameters).

Q. If I am not on CA IDMS r17, do I need to upgrade to exploit the zIIP processing feature?

- A. Yes. Due to architectural changes in CA IDMS r17, zIIP utilization is only available with CA IDMS r17.

Q. If my site has both DB2® and CA IDMS, which DBMS will have priority for zIIP offload support?



A. The use of zIIP processors is controlled by IBM's WLM (Work Load Manager) and is subject to the goals established by your IT operations staff. Priority is a function of settings in WLM.

Q. Where can I find more information on the zIIP processor feature for CA IDMS?

A. The CA IDMS/DB r17 product brief at ca.com/idms describes the function and benefit of the zIIP feature. *CA IDMS zIIP Feature*, an on-demand webcast, is available on ca.com/idms and the CA IDMS page of ca.com/support. Detailed descriptions are included in the following CA IDMS r17 documents: *CA IDMS Release Summary*, *CA IDMS Installation and Maintenance Guide – z/OS*, *CA IDMS System Operations Guide*, and *CA IDMS System Tasks and Operator Commands Guide*.

Q. What other CA products exploit the zIIP processor?

- CA NetMaster® File Transfer Management, IP Packet Trace Analysis and SmartTrace
- CA Detector and CA Subsystem Analyzer
 - Collections run on zIIPs when the SQL being measured runs on a zIIP
- CA Vtape™ Virtual Tape System
 - Virtualization and Compression
- CA Tape Encryption
 - Encryption and Compression
- CA SYSVIEW® Performance Management, CA MICCS® Resource Management and CA Insight for DB2
 - Monitor and report on Specialty Engine use
- CA Datacom® r12 Beta
 - Designed to exploit zIIP



CA IDMS™ r17 and zIIP Frequently Asked Questions

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