



## **1. 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 having to add general processor MIPs. CA's support for zIIP can help you lower your total cost of ownership (TCO) on the mainframe.

## **2. Q. How is CA Datacom exploiting the zIIP processor?**

A. CA Datacom/DB r12 makes wide use of the zIIP engine, which IBM originally introduced to handle specific types of processing workloads.

CA Datacom®/DB r12 Multi-User Facility (MUF) enables you to direct a much broader set of functions to the zIIP. In fact, a portion of all MUF production workloads—including those generated by online transaction systems, batch processing jobs and remote platform requests that would normally be serviced by the general purpose (GP) processor — can now be offloaded to the zIIP.

Because significant portions of CA Datacom/DB r12 workloads can run on zIIPs, you can better leverage zIIP capacity to scale your database environments without adding general processor MIP capacity. This is in marked contrast to other DBMS vendor solutions that limit the types of workloads that can be offloaded or that fail to utilize zIIP altogether.

## **3. Q. Is the CA Datacom/DB zIIP feature an extra-cost option?**

A. No. zIIP support is included with CA Datacom/DB r12 at no additional cost.

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

A. All database requests serviced by CA Datacom/DB Multi-User Facility can take advantage of the zIIP. There are no restrictions on the type of CA Datacom/DB MUF work that is zIIP-eligible.



CA Datacom® Presspack is a runtime compression package that can also take advantage of zIIP offloading because most of its work can be done by SRBs to manage its decompression and compression routines.

**5. Q. Is the workload executing in the batch DBUTLTY region zIIP-eligible?**

A. No. Currently, only the workloads executing in the Multi-User Facility region are zIIP-eligible. However, when a DBUTLTY (CA Datacom system utility) function is executed in Multi-User mode, then the work is shipped over to the Multi-User Facility region. These DBUTLTY Multi-User mode functions become zIIP-eligible.

**6. Q. Can the zIIP processor manage the same type of work as the general purpose processor?**

A. No. The zIIP processor cannot manage physical I/O processing and user-written exit processing because SRBs cannot issue a Supervisor Call (SVC). Because of this SRB restriction, each CA Datacom/DB SMP task running in SRB mode is paired with a TCB subtask that is used to perform the functions that cannot be done in SRB mode.

**7. Q. How do I activate the zIIP processing feature in CA Datacom/DB?**

A. To run on a zIIP engine, you must run tasks in SRB mode rather than TCB mode. The zIIP feature is activated by simply adjusting the settings on the Multi-User startup option called *SMPTASK*. For details, refer to the *CA Datacom r12 Database and System Administration Guide*.

**8. Q. How can I tell if my environment will receive benefits, and to what extent, from the zIIP processor?**

A. Even when no physical zIIP processor is available in your environment, you can estimate the potential zIIP offload benefit by specifying "SRB" on the Multi-User startup option *SMPTASK* and reviewing system statistics in the new Dynamic System Table *MUF\_SRB\_ZIIP* or the MUF EOJ report. Refer to the *CA Datacom r12 Database and System Administration Guide* which has a discussion on this benefit analysis.



High I/O applications will have less zIIP-enabled work since SRBs cannot do I/Os. Application systems with high buffer re-use or high Memory Resident Data Facility (MRDF) usage will have more zIIP-enabled work. During the CA World conference in November 2008, one of our early r12 test sites presented a session reporting that offloading CPU cycles to the zIIP exceeded 25% of the total CPU workload.

Your actual benefit may vary depending on your mix of CA Datacom work—online, batch, CICS, CA Ideal, COBOL, distributed web apps, JDBC, ODBC, etc. We encourage you to install CA Datacom/DB r12 and test it in your environment to determine the zIIP offload benefit. We are very interested in any testing results you can share with us as we move forward with this innovative feature.

**9. Q. Is there any performance overhead associated with deploying a zIIP processor?**

A. Yes. With the introduction of any additional processor in a multiprocessor environment, there is some overhead, such as additional code checks that enable exploitation of the added processor. When running with the zIIP feature activated, however, we believe that the cost of the communication between the general purpose (GP) processor and the zIIP will be significantly outweighed by the business value derived from receiving additional GP capacity.

**10. Q. Does this feature improve CA Datacom/DB performance?**

A. Early customer tests have not revealed measurable performance gains when the zIIP is deployed in a CA Datacom/DB environment. When an additional processor (in this case a zIIP) is added to a multi-processor environment, there is an "MP effect" which slightly diminishes the CPU capacity of the other processors. Taking this into consideration, we don't expect that performance will improve when zIIP is enabled. However, the expected result of offloading GP processing cycles to the zIIP would have the same type of benefit as improved performance – that is - this new feature could enable you to delay new processor upgrades due to increased GP processor availability.

**11. Q. If my site has both CA Datacom/DB and DB2, which DBMS will have priority for zIIP offload support?**



A. zIIP processor usage is controlled by IBM's Workload Manager (WLM) and is subject to WLM priority level settings established by your IT operations staff.

**12. Q. Can I control the amount of CA Datacom work offloaded to the zIIP processor?**

A. You can control the percentage of CA Datacom zIIP-eligible work offloaded to the zIIP by setting 0-100 value on the new Multi-User startup option *ZIIP\_USER\_LIMIT*. This provides another method to manage zIIP resources in an environment that has multiple products with zIIP-eligible workloads.

**13. Q. If I am on a previous release, do I need to upgrade to CA Datacom/DB r12 to exploit the zIIP processing feature?**

A. Yes. Due to architectural changes required to use the zIIP processor (processing SRB subtasks in a WLM Enclave), CA Datacom/DB r12 is the first release in which zIIP utilization is available.

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

A. CA Datacom zIIP implementation details are provided in the *CA Datacom r12 Database and System Administration Guide*. The webcast *zIIP Processor – What Will It Do For Me?*, scheduled for a 26 June 2009 broadcast, is available on [ca.com/webcasts](http://ca.com/webcasts) or the CA Datacom support home page at [ca.com/support](http://ca.com/support).

**15. Q. What CA products exploit CPU offloading to the zIIP processor?**

- CA Datacom®/DB r12
- CA Datacom® Presspack r12
- CA IDMS™ r17
- CA NetMaster® File Transfer Management r11.6
- CA NetMaster® Network Automation r11.6
- CA NetMaster® Network Management r11.6 for SNA
- CA NetMaster® Network Management r11.5 for TCP/IP
- CA Tape Encryption r12.5



# CA Datacom®/DB r12 and zIIP Frequently Asked Questions

---

- CA Vtape™ Virtual Tape System r11.5

Copyright © 2009 CA. All rights reserved. CICS, DB2, IBM, System z and z/OS are trademarks of International Business Machines Corporation in the United States, other countries, or both. All trademarks, trade names, service marks and logos referenced herein belong to their respective companies. This document is for your informational purposes only. To the extent permitted by applicable law, CA provides this document "as is" without warranty of any kind, including, without limitation, any implied warranties of merchantability, fitness for a particular purpose, or non-infringement. In no event will CA be liable for any loss or damage, direct or indirect, from the use of this document including, without limitation, lost profits, business interruption, goodwill or lost data, even if CA is expressly advised in advance of the possibility of such damages.

This publication is based on current information and resource allocations as of its date of publication and is subject to change or withdrawal by CA at any time without notice. The information in this publication could include typographical errors or technical inaccuracies, and CA assumes no responsibility for its accuracy or completeness. CA may make modifications to any CA product, software program, method or procedure described in this publication at any time without notice. Notwithstanding anything in this publication to the contrary, this publication shall not: (i) constitute product documentation or specifications under any existing or future agreement relating to any CA software product, or be subject to any warranty set forth in any such agreement; (ii) serve to affect the rights and/or obligations of CA or its licensees under any existing or future agreement relating to any CA software product; or (iii) serve to amend any product documentation or specifications for any CA software product. Certain information in this publication may outline CA's general product direction. However, the development, release and timing of any features or functionality described in this publication remain at CA's sole discretion.

Any reference in this publication to non-CA products and non-CA websites is provided for convenience only and shall not serve as CA's endorsement of such products or websites. Your use of such products, websites, and any information regarding such products or any materials provided with such products or on such websites shall be at your own risk.

The information in this publication is based upon CA's experiences with the referenced software products in a variety of development and customer environments. Past performance of the software products in such development and customer environments is not indicative of the future performance of such software products in identical, similar or different environments. CA does not warrant that the software products will operate as specifically set forth in this publication. CA will support the referenced products only in accordance with (i) the documentation and specifications provided with the referenced product, and (ii) CA's then-current maintenance and support policy for the referenced product.