
7 Specialty Engines

Client/Server processing originated in a stand-alone PC environment. The concept of multi-tasking in this environment was a non-factor. That enabled products with superior functionality to be developed with little incentive to be cautious in the use of complex and resource intensive SQL.

It is no secret that a non-shared Unix environment is going to give you a more consistent response time than a shared mainframe environment, at least until you start cutting costs by sharing your Unix hardware.

Specialty processors have been around for quite some time. They exist in addition to the GP (General Processors) that handle most of the mainframe workload. They run the same instruction set as a General Processor. But they run specific types of workloads.. The original specialty engine, the System Assist Processor (SAP), helps with I/O. The ICF (Integrated Coupling Facility) is part of Data Sharing enablement in a Parallel Sysplex and was available in 1997. An [IFL](#) (Integrated Facility for Linux) came out in 2001 to handle a z/Linux workload. zAAPs (Application Assist Processors) handle Java workload from the JVM. Most recently, a [zIIP \(Integrated Information Processor\)](#) was released to handle DB2 workload.

Two of these, the zIIP and IFL will considerably lower the cost of your investment, and enable a more consistent user experience. Firstly, DB2 V8 and z/OS 1.6 provide the capability to isolate a certain percentage (currently estimated in the 40% range) of your online and remote server SQL workload (anything coming in through DD2 Connect) onto the cheaper, stand-alone, and software license-free zIIP. And secondly, PT8.48 is now certified to run under z/Linux. This means that your current mainframe batch server workload, including Cobol, SQR, AE, and Process Scheduler, can now also run on the cheaper, stand-alone and software license-free IFL. The only thing that would be left running on the GP's (General Processors) would be approx 60% of your SQL workload accessing DB2.

7.1 Integrated Information Processor (zIIP)

zIIPs handle 3 types of workload. These workloads are all identified by DB2 to the WLM as being enclave SRB's that can be dispatched to the zIIP.

- DRDA work that comes into DB2 by use of TCP/IP
- Some very specific BI workload that uses star schemas
- Index workload from three DB2 utility processes (Load, Reorg and Rebuild Index)

This workload will not be seen by the software that is licensed to run on the CP's, which is based on the model number or MSU rating of your CP. So even though you are adding engines, your software costs do not increase.

However, IBM isn't going to give everything away, since they are potentially losing DB2 license revenue. So only a certain percentage of the eligible workload is going to be diverted to the zIIP, and that percentage hasn't been made public yet, but is expected to be around 40% for DRDA workload, 80% for BI, and 10-65% for utilities.

For PSE, anything coming in through DB2 Connect is eligible. That would include:

- All online work
- The Process Scheduler running on a remote server
- Any COBOL, Application Engine (AE) and Structured Query Reports (SQR) batch processes running on a remote server.
- ETL processes involved in getting data to EPM.
- *It does not include COBOL, SQR, AE or the Process Scheduler running under USS or z/OS.*

Pre-reqs are a z9 processor z/OS 1.6 or above, and DB2 V8

7.2 Integrated Facility for Linux (IFL)

Available with PeopleTools 8.48 will be the batch server running under z/Linux, with support for 64-bit processing. Both SUSE Linux from Novell and Red Hat Linux will be certified. This will allow you to run your batch server i.e. Process Scheduler, Cobol, SQR and Application Engine under Linux on the mainframe. Connectivity to DB2 will be through ODBC and DB2 Connect (just as if it were coming in from a remote server) using hipersockets, which is a memory-to-memory protocol.

The advantage of this configuration will be that you can utilize the cheaper IFL (Integrated Facility for Linux) processors along with faster connectivity into DB2. Additionally, the workload would get a double benefit since the DB2 workload would be eligible for zIIP engines. In addition to saving on the DB2 cycles running on the zIIP, it would also save on the program code cycles running on the IFL.

