



CPU and zIIP usage of the DB2 system address spaces – Part 1

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1 Introduction

Each DB2 subsystem always includes three system address spaces:

- Master (MSTR), providing overall control functions such as logging and backout;
- Database Manager (DBM1), providing database related functions such as buffer pools and EDM pool management;
- Internal Resource Lock Manager (IRLM), providing locking support.

The z/OS standard accounting mechanism, based on cross memory services, attributes CPU usage to the requesting address space. Only a part of the CPU used to serve requests arriving for DB2 is charged to MSTR, DBM1 and IRLM address spaces.

This part, which can be considered as wholly DB2 overhead, is normally a small percentage of the DB2 application CPU but it can be pretty high in absolute terms.

For many years the focus of DB2 overhead analysis has been on DBM1 that was, among the DB2 system address spaces, the major CPU consumer.

DB2 evolution during the recent years significantly changed this picture by allowing the offloading of a big portion of DBM1 and, from V11, also part of MSTR activity to zIIP.

However at the same time new functions have been provided in the MSTR address space which greatly increased its CPU usage and sometimes may become real issues to address.

In this paper we'll discuss:

- the amount of work which has been offloaded or could be offloaded to zIIP;
- the impact of new functions available in the MSTR address space on CPU usage;
- the impact of insufficient zIIP capacity on DB2 CPU usage and performance.