# Analyzing DB2 overhead – Part 1

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## 1 Introduction

In almost any mainframe environment, DB2 is the repository where all the most important company
information are stored. This information are normally accessed by many applications via Batch, TSO, CICS, IMS , DDF, WebSphere, etc.

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.

A fourth address space is normally present: it is the Distributed Data Facility (DIST) address space which provides support for remote requests (coming from outside the system where DB2 resides).

The z/OS standard accounting mechanism, based on cross memory services, attributes CPU usage to the requesting address space. Only a small part of the CPU used to serve requests arriving to DB2 is normally charged to MSTR, DBM1 and IRLM address spaces. This part can be considered as wholly DB2 overhead.

The situation is different for the DIST address space which serves remote requests coming from outside the system and therefore CPU usage cannot be charged to any requesting address space. In this case DIST CPU usage includes both application activity and DB2 overhead.

Other address spaces can be used to run DB2 stored procedures1. Almost all the CPU used running stored procedures is charged to the requesting address space which can eventually be the DIST (if the stored procedure is called by a remote request). The CPU charged to the address spaces running DB2 stored procedures can be considered as wholly DB2 overhead but it is normally negligible so it will not be discussed in this paper.

In the following chapters we'll discuss:

- which metrics can be used to evaluate the DB2 system address spaces overhead;
- how to separate application productive work from the DIST address space overhead;
- what can be done to understand if the DB2 overhead is excessive and where it comes from.

1 Native stored procedures run in DBM1.