

z16 Processor Measurements for AI

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1. Introduction

IBM announced the latest z/OS version as “an AI-infused operating system for the next generation of computing”.

As often happens, IBM also introduced new hardware components to support software innovation. From this point of view the most important milestone on the z/OS path to artificial intelligence is the introduction, in each chip of the z16 machines, of a specialized processor: the IBM Z Integrated Accelerator for Artificial Intelligence (AIU in the following).

IBM added new counters in SMF 113 records to allow measuring how much CPU and zIIP cycles were used, on each system, accessing or using the AIU.

New metrics describing the processor topology have been also added to SMF 70 to evaluate the level of utilization of the AIUs.

All these counters and metrics will be discussed in this paper together with the formulas to use to evaluate CPU, zIIP and AIU utilization.