

z16 Capacity Planning – Part 1

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April 2022

1 Introduction

On April 5th IBM announced its new generation of the mainframe. The new system is called IBM z16 while the family model is 3931.

Experienced capacity planners know that every new generation of machines provides a major challenge to their skills. They also know that their best friends are the IBM LSPR benchmarks, the IBM zPCR tool, the Measurement Facility counters provided in SMF 113 and an up-to-date performance database.

This is especially true in this case because IBM has made significant changes to the processor cache architecture, which is very different from that of the z13, z14 and z15 machines.

In the first part of this paper, we'll have a look at the most important capacity characteristics of the IBM z16. Starting from the IBM LSPR benchmarks, we'll then estimate the MIPS capacity of each IBM z16 processor model.

Finally, we will compare z16 single CP capacity and workload variability with previous machine generations.

In the second part we'll compare z15 and z16 processor cache architecture. Then we'll analyse in more detail the new z16 Measurement Facility basic and extended counters provided in SMF 113, using them to calculate the most important indexes to use in performance analysis and capacity planning.