

## **AIX Micro-Partitioning (Part 1)**

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Starting from year 2000 IBM announced the possibility to partition the pSeries family systems. Initially it was only possible to run dedicated processors in a logical partition. Now p5 series has integrated new virtual engine system technologies into their hardware and software. This introduced new features as Micro-Partitioning which provides the ability to share physical processors among logical partitions, Virtual Lan which provides network utilization features capabilities that permit you to prioritize traffic on shared networks and allows secure communication between logical partitions without the need of a physical network adapter, Virtual I/O which provides the ability to dedicate I/O adapters and devices to a virtual server. It allows a single physical I/O adapter to be used by multiple logical partitions on the same server. This allows consolidation of I/O servers and minimizes the amount of I/O adapters required.

New concepts of shared partitioning have been implemented in the p5 series compared to the IBM mainframe. In this paper I will provide a detailed overview of shared partitioning and its performance metric considerations .

Before starting to measure shared partition activity its essential for the performance analyst to obtain a general overview of the new terms introduced and understand how logical partitioning is configured and works in the P5 series environment.

The following arguments will be discussed in this paper: Power Hypervisor, Hardware Manager Console (abbreviated as HMC), partition profiles, Micro-Partitioning, entitled capacity, virtual CPUs, logical CPUs, Symmetric Multi Processing (abbreviated as SMT), Partition Load Manager (abbreviated as PLM), performance tools as *vmstat*, *lparstat*, *mpstat* and performance case examples.

Due to the complexity of the topic the paper has been divided in two parts.