VMware by Broadcom Memory Vision for Real World Applications

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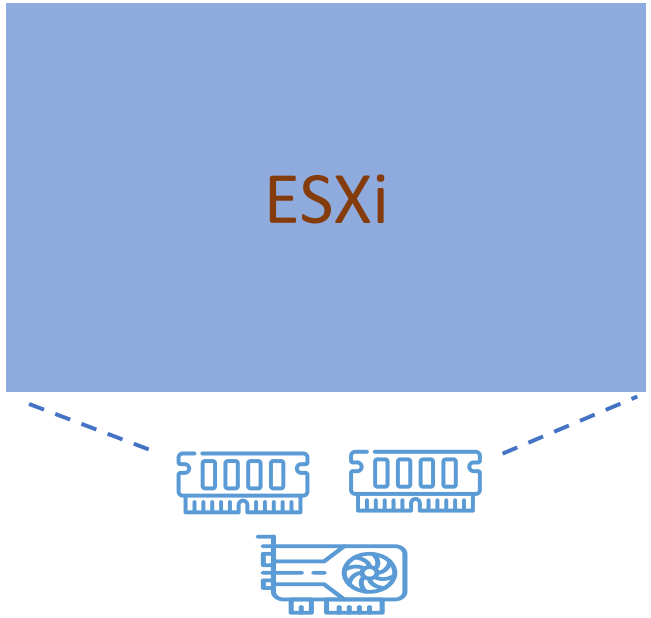
VMware By Broadcom

Customer Value: Total Cost and Savings

Reducing TCO by substituting DRAM vs. Reducing TCO by “unlock”ing CPU

Customer A

(Greenfield: Include Tier-2 memory along with DRAM)

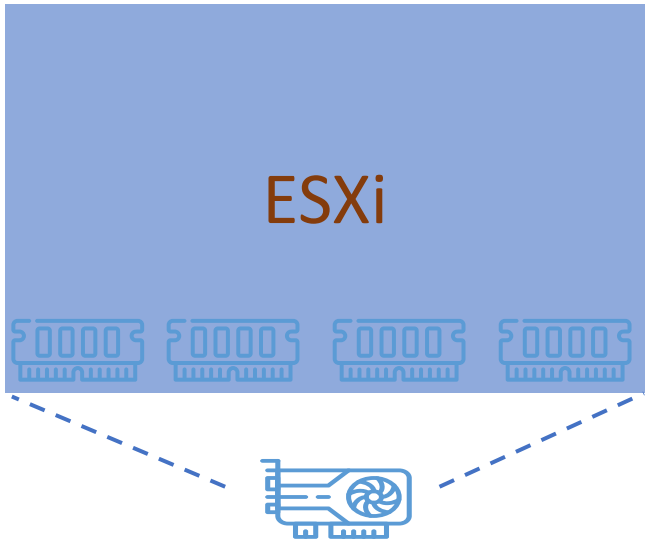


TCO Savings with secondary memory tier

(Lower overall hardware costs)

Customer B

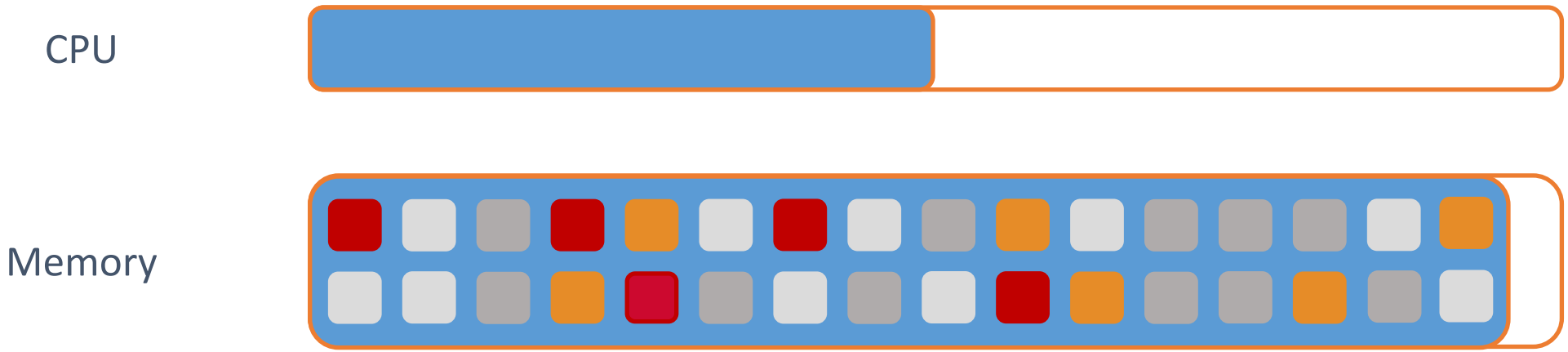
(Brownfield/Greenfield: Add Tier-2 memory)



TCO Savings by increasing CPU utilization

(Better licenses usage, Increased workload density, power/space/cooling improvements)

Page Classification Unique Approach



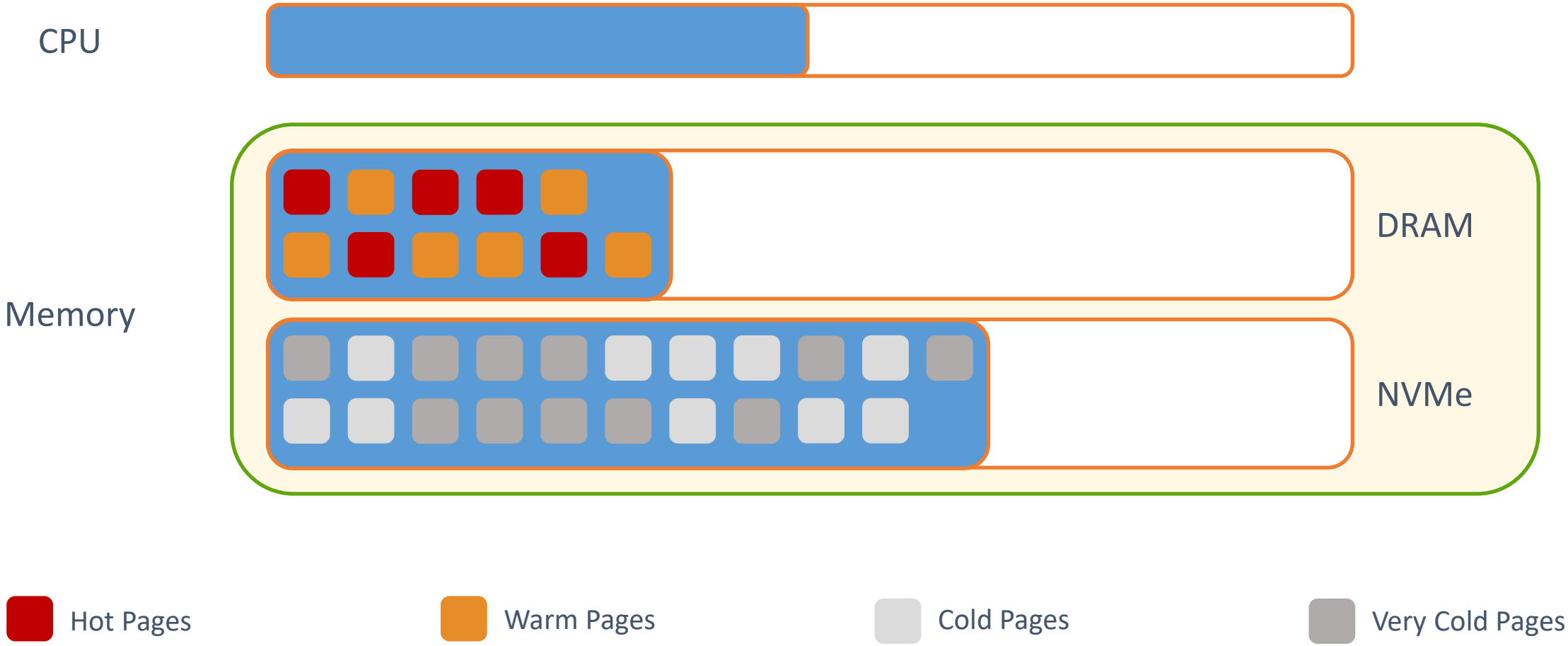
Hot Pages

Warm Pages

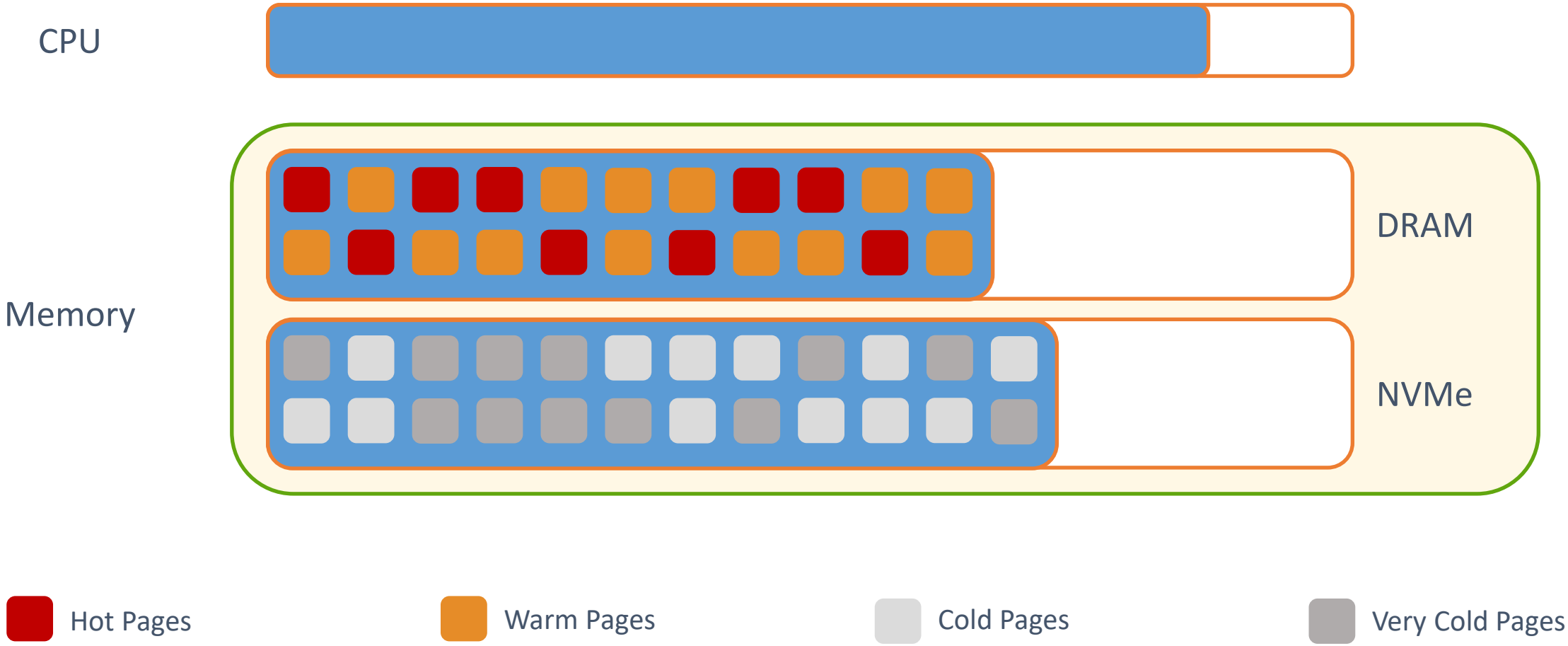
Cold Pages

Very Cold Pages

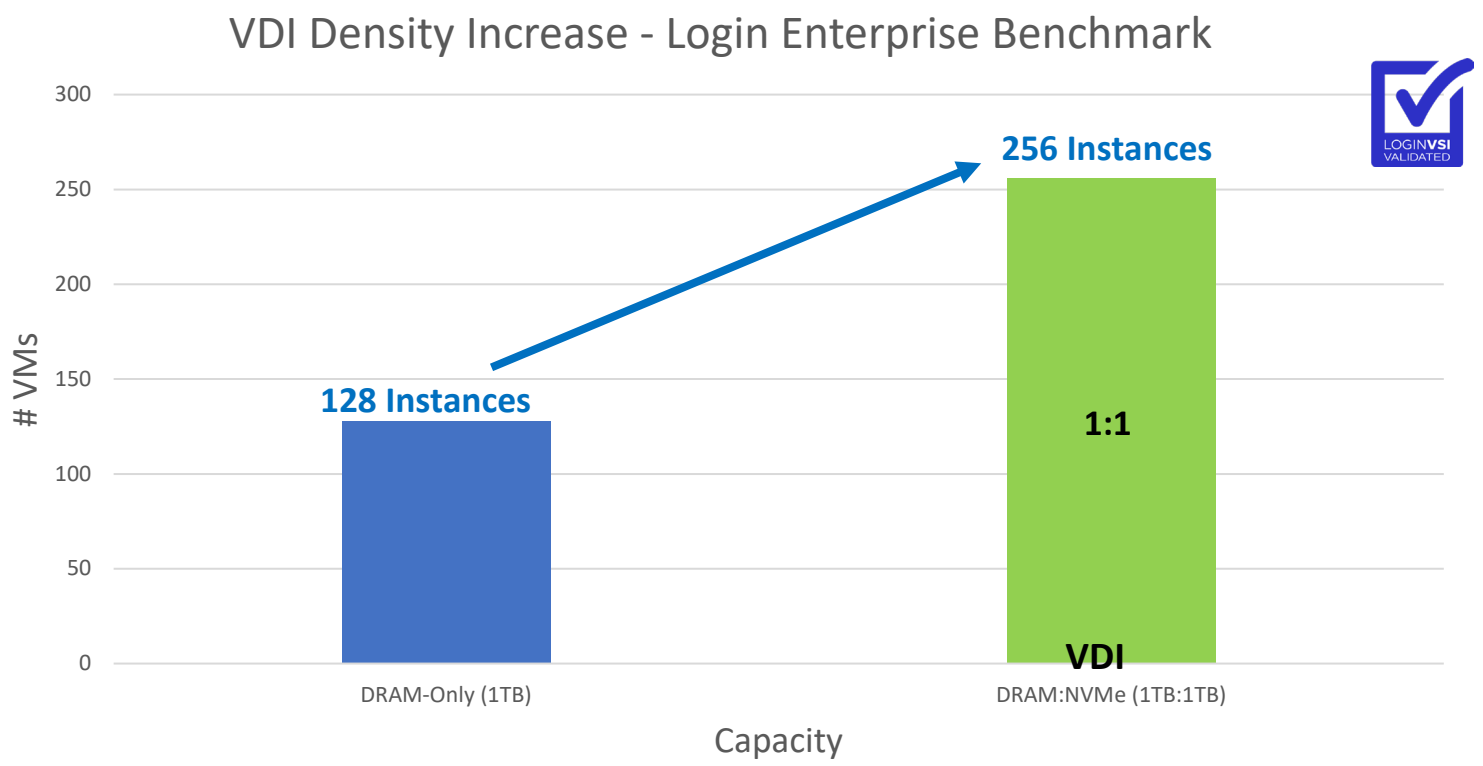
Better Resource Utilization



Better Resource Utilization



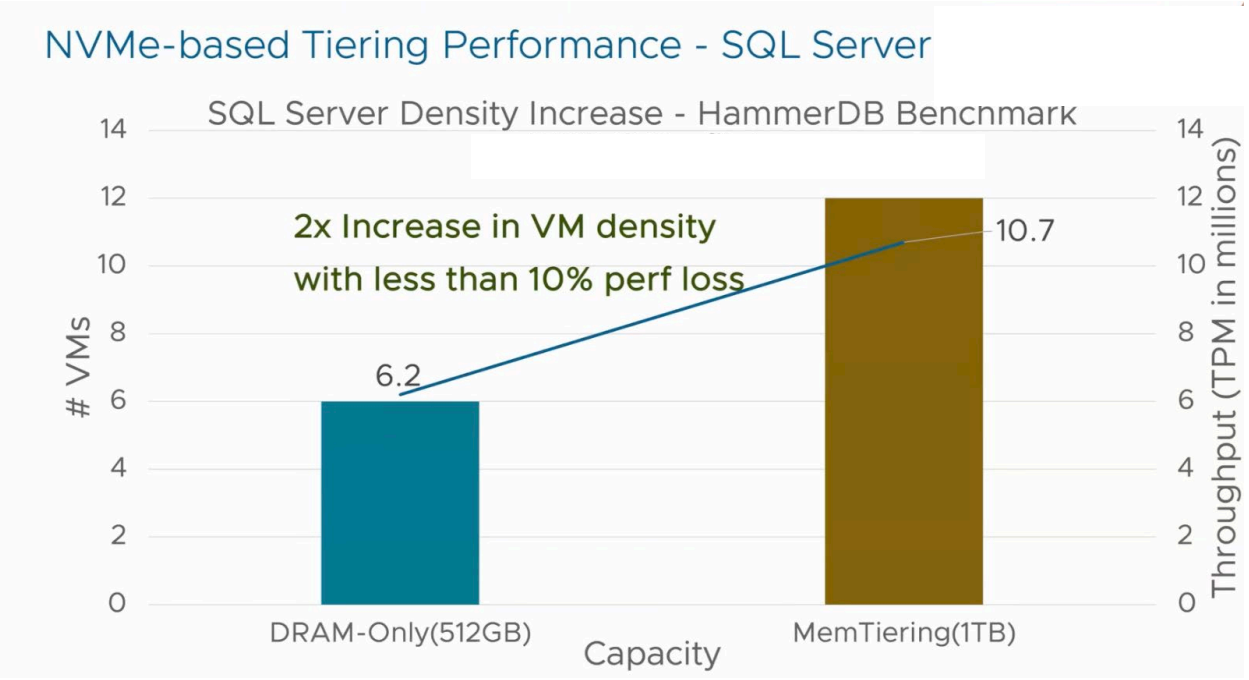
Memory Tiering – VDI Results

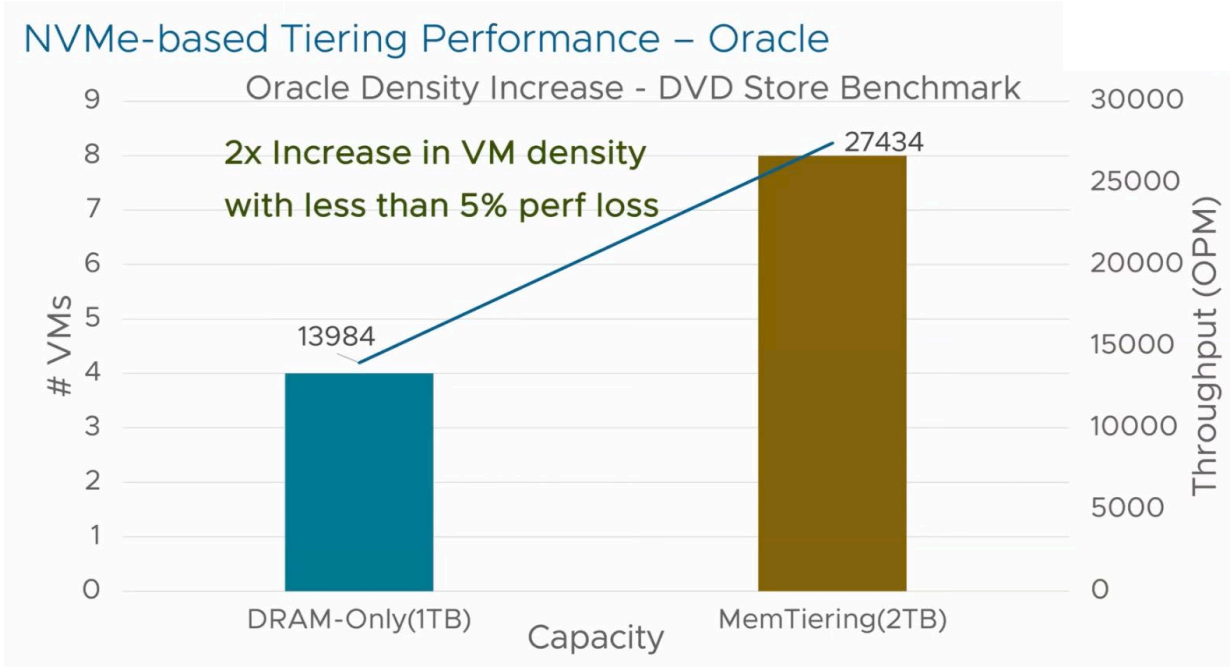


Host	
System under test (SUT)	DELL PowerEdge R750 with 2x Intel Xeon Platinum 8380 (40 cores per socket)
SUT: Memory DDR4 Total Host DRAM Capacity	1TB (16x64GB DIMMs)
SUT: Storage NVMe SSD Total Capacity	1.6TB P5600 NVMe SSDs

2x VM density by using 1TB more Tiering 1:1 config with only 1% performance loss

Memory Tiering – SQL & Oracle scale with low performance impact*



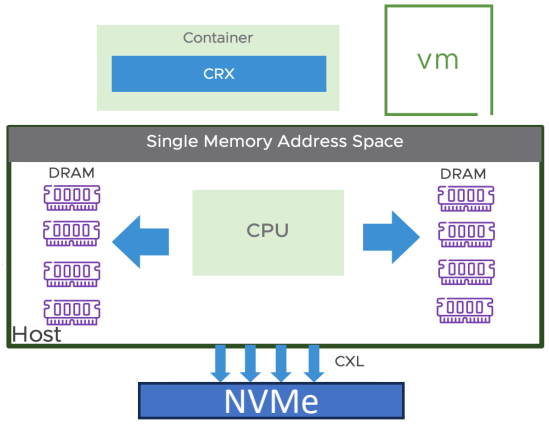


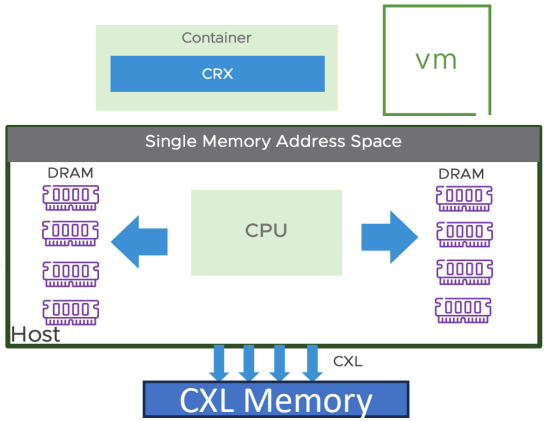
2X throughput and VM density for both SQL server and Oracle workloads

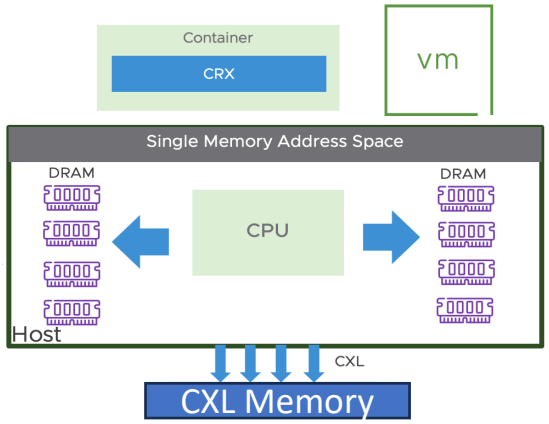
* See Performance blog in the performance series

Memory Tiering Vision

CXL Platform Support in VCF 9x







NVMe Tiering

Memory Tiering

CXL Memory Expansion

Memory Hetero Interleaving /Flat/Software Interleave

CXL Memory Expansion/Tiering

CXL Memory Tiering

Thank You