Reduce CPU Utilization by 10GbE CNA with Hardware iSCSI Offload

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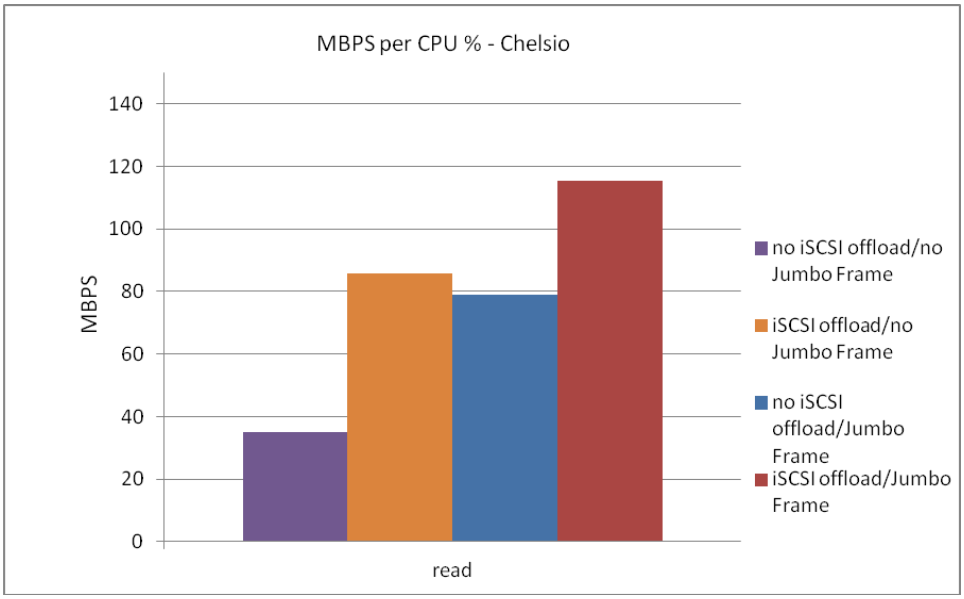
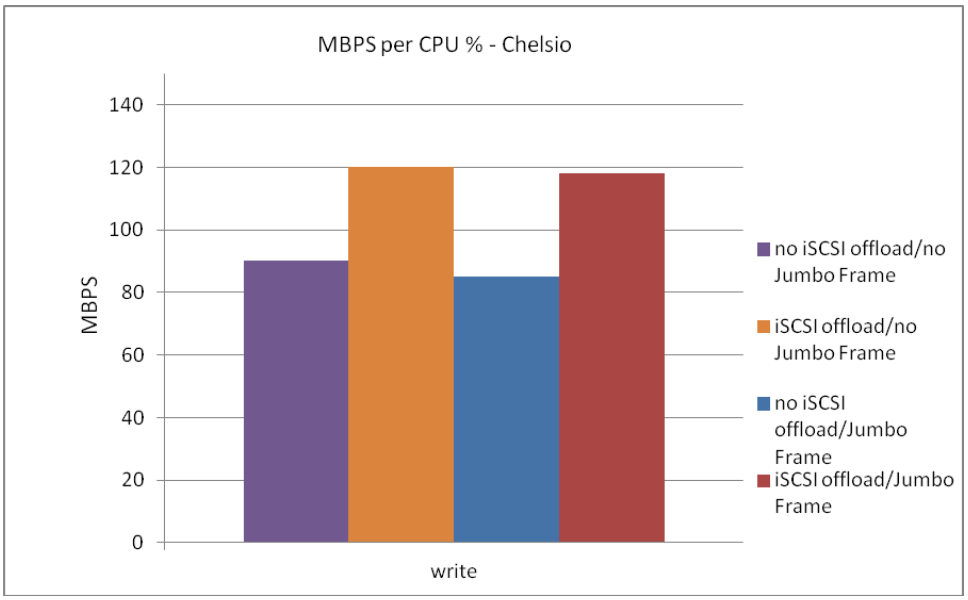
Chelsio S320E-CR

Similar test result can also be found on the Chelsio CNA; it is just the CPU effectiveness gap between the hardware iSCSI offload enabled and disabled is not as huge as the Emulex CNA.



For the sequential write test, the hardware iSCSI offload also has improvement in the CPU effectiveness.



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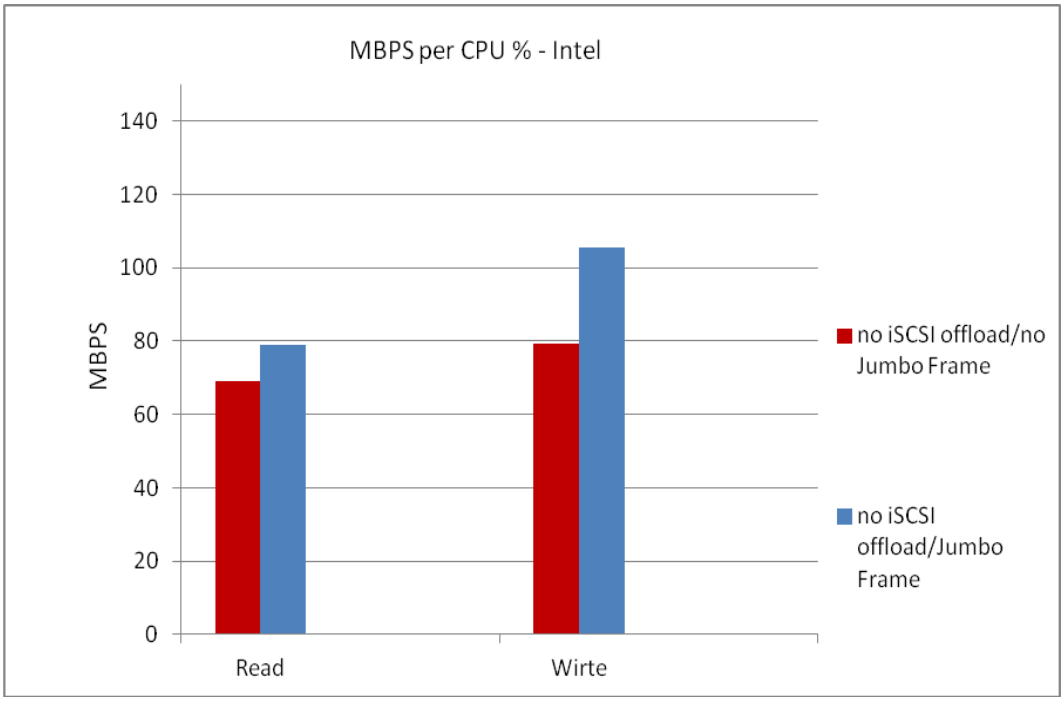
Intel X520-SR2

Intel X520-SR2 does not have the hardware iSCSI offload, we only compares the cases of Jumbo Frame enabled and disabled. And we can see the CPU effectiveness is better when Jumbo Frame is enabled, no matter in sequential read or write test.



Summary

For the computing resources demand applications, such as database and virtualization, it is always the priority to preserve the CPU resources as much as possible. A 10GbE CNA with hardware iSCSI offload would be a good solution to meet the requirement. If the CNA is not possible to get because of the budget limitation, using the Jumbo Frame will also help to reduce the CPU loading.

Look at the test results above, although the Emulex CNA has better CPU effectiveness for MBPS of each percentage of CPU utilization, it does not mean it has the best performance among the testing scenarios on these three HBAs. In the case, one HBA has the best performance, but also uses high CPU utilization; that gives bad result in terms of CPU effectiveness.

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