NVMe

NVMe stands for Non-Volatile Memory Express. The meaning of Non-Volatile is that the data in the storage is not erased when our computer reboots.

The protocol of NVMe is built on the top of PCIe lanes.

NVMe is a transport protocol for accessing the non-volatile storage with the technology known as PCI express. This interface is introduced in the year of 2013.

It is basically designed to allow the high-speed transfer of data between the computer components and system.

NVMe is a faster way for the solid-state drives to communicate with their host systems. It is an optimized and high-controller scalable interface, which is mainly designed to address the need of Enterprise. It supports 64k of parallel command queues. It is much faster than the hard disks, which are limited to a single command queue.

The drivers of NVMe is much faster than the drivers of SATA. The tasks of input and output performed by using NVMe drivers begin and finish faster than the older drivers, such as AHCI.

It is available in various form factors. Some of the form factors in which NVMe technology is available are M.2, U.2, AIC ( Aid-in Card ), U.3, and PCIe.

The main benefit associated with the NVM express is that it improves the performance and helps to increase the IOPs.

History of NVMe

The development of NVMe specifications starts in the year of 2007 when the first details of the new standard to access the non-volatile memory came out at Intel developer Forum.

In April 2008, the NVMHCI 1.0 (first protocol) was completed and released on the web site of Intel. After then, the technical work on NVM Express started in the second half of the year 2009. The specifications of NVMe were introduced by the NVM Express workgroup. This workgroup includes more than ninety companies. The specification version 1.0 was released on 1st March in the year of 2011. And, version 1.1 was released on 11th October in the year of 2012. In version 1.1, major features are added. Because of the focus on its features, initially, NVMe 1.1 was known as "Enterprise NVMHCI".

In January 2013, an update for the base NVMe specification, called version 1.0e, was introduced. The first drive of NVMe was announced by Samsung in July 2013. The name of this drive is XS1715 enterprise drive, which supported the 3GB per second read speed.