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HPC Cluster. The Modern Paradigm.

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The modern science has a class of problems related to theoretical research, computer simulation and big data analysis. The classical method of solution is based on usage of serial (single threaded) algorithms having a long run time. The modern method of solution offers high-performance parallel (many threaded) algorithms. They reduce the run time greatly but have specific requirements for computer systems.

The article is described the architecture and system software of a high-performance cluster by the example of heterogeneous cluster HybriLIT. The modern paradigm of high performance cluster was formulated. The construction principles of such computer systems were given.

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