Disk storage failure prediction in datacenter using machine learning models

September 2021 · 13(1)
DOI: 10.1007/s13204-021-02039-4

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Abstract

Data centers are located centralized to do computation and accessing huge amount of data by the network devices which are interconnected to form the network path. Servers are stacked, data storage is placed in them. Data server backup and server redundancies are the recovery mechanisms implemented. Data centers compute, store, distribute the data by processing them and the data center controls all the interconnected network equipment in the distributed network. In current, RAID system is implemented to avoid the service disruptions due to disk failures, the availability of system and services are achieved with this expensive model. But still the availability is lost, and service disruptions happen due to disk failures, the machine learning models to be used to predict the disk failures well in advance. Data center has increased usage of system with increased data storage, the failure in disc makes the system failed and down time increases. Analysis on the methods of problems in disk and methods of disk availability and reliability failure is the main goal. Various machine learning models are identified and discussed along with the SMART parameters for measuring the failure of the disk. Improved method of Ensembling of trees, random forest and boosting techniques are also discussed.

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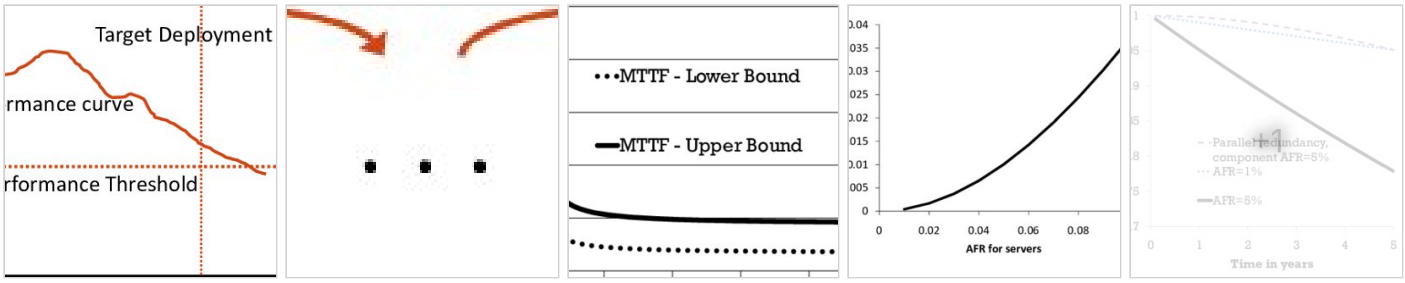

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