

# Operating Systems

## RAID Hard drives

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October 16, 2017

## 1 RAID

- **RAID** expands to Redundant Array of independent disks. It essentially combines multiple physical drives into a single logical unit.
- One of the main purposes of RAID is data redundancy. Data redundancy refers to the existence of data additional to the existing data. This could either be in the form of a whole copy, or maybe smaller parts of the data. Data redundancy can be used sometimes to correct errors that occur in some data. Keeping multiple copies allows checking of the existing data.
- Often, the copies of data are present in different physical hard drives, though there is a single logical drive. This is because data can be restored even if there is a complete failure of one of the drives.
- RAID has different levels usually indicated by RAID *number*. Higher numbers usually mean more protection of data.
- RAID systems use the concept of parity. For example, in RAID 5 level, there are a minimum of 3 hard disks. 2 are used for Data and 1 is used for parity. Parity is essentially used to check if data transfer has occurred without any error or not. It can be used to restore data in case of losses.