Predictions 2015 and Beyond

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2015 Predictions

This is pretty easy
Prediction by end of 2015

- PCIe (Peripheral Component Interconnect Express) 4 will be delayed again to late 2016
- Larger disk drives ensure vendors rethink their controller design
- Hardware RAID (redundant array of independent disks) will be on life support
  - RAID will be done in software like Linux MD RAID stack
- Fewer SSD companies than we have today
  - Likely down to really 4 to 6 paralleling disk companies in the 1980/90s
- People will again begin thinking about performance issues as was done in the late 1980s through middle of the 1990s
2016-2018 Predictions

A bit harder
Prediction by end of 2018

• Resource allocation and management of non-volatile memories will be in development with some initial releases in Linux and MS Windows

• World will look like late 1990s with competing interfaces out of servers
  – PCIe and others or new interfaces

• Storage eco-system will be changing significantly with changes to both software stack and technologies (from primary storage to archive)
  – Vague statement but that is about all I want to say about the types of hardware that will be available storing data
Beyond 2018

Now it gets interesting
Prediction 1: PCIe

• PCIe future development will be gone by 2020
  – Intel controls PCIe and is coming out with a new interconnect
  • This is disruptive given PCIe has been the bus of choice for almost 20 years
Prediction 2: Integrity

• ECC (Error Correction Code)/Erasure codes will be used from host to storage for all devices by 2020
  – RAID as we know it 1,5,6 will have moved to declustered with ECC or
  – Move to ECC in the file system without knowledge of storage system
  – This will be true for both disk and archival technology
    • Outside chance ECC will move to support networking by 2022
      – This will require major changes in the stack and network interface cards (NICs) so that is why it is not a sure thing