

# Improve Hadoop Economics, Performance, and Security with Compression and Encryption

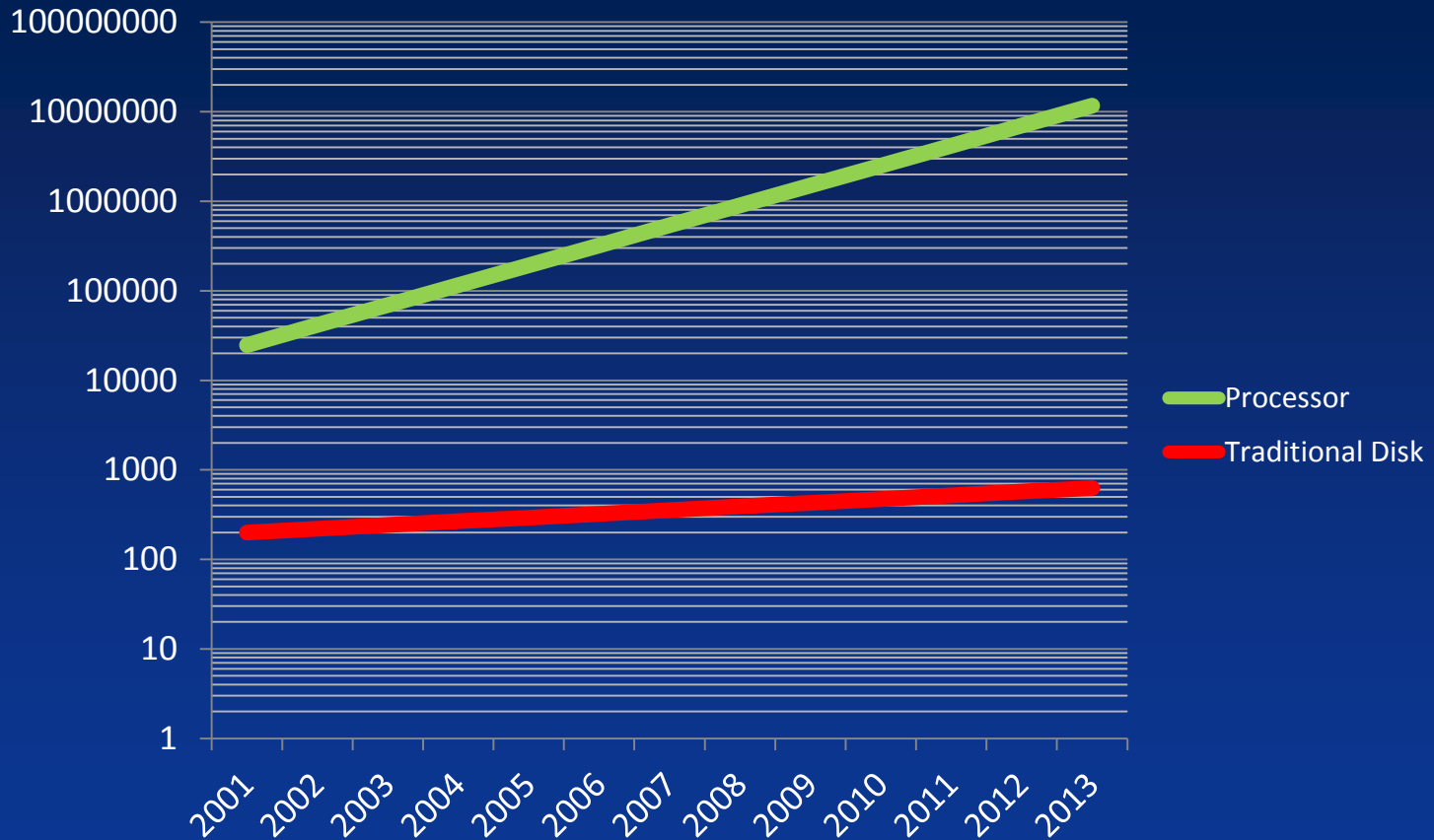
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# The Storage IO Bottleneck Performance Gap



# The Storage IO Bottleneck Current Server Solution



More Disks and more rack space

This will increase management cost, and also require more expensive storage controller. Additionally, there is a limit to scale the width – each server has a hard physical limit.

# The Storage IO Bottleneck Summarized Challenge



Performance



Cost

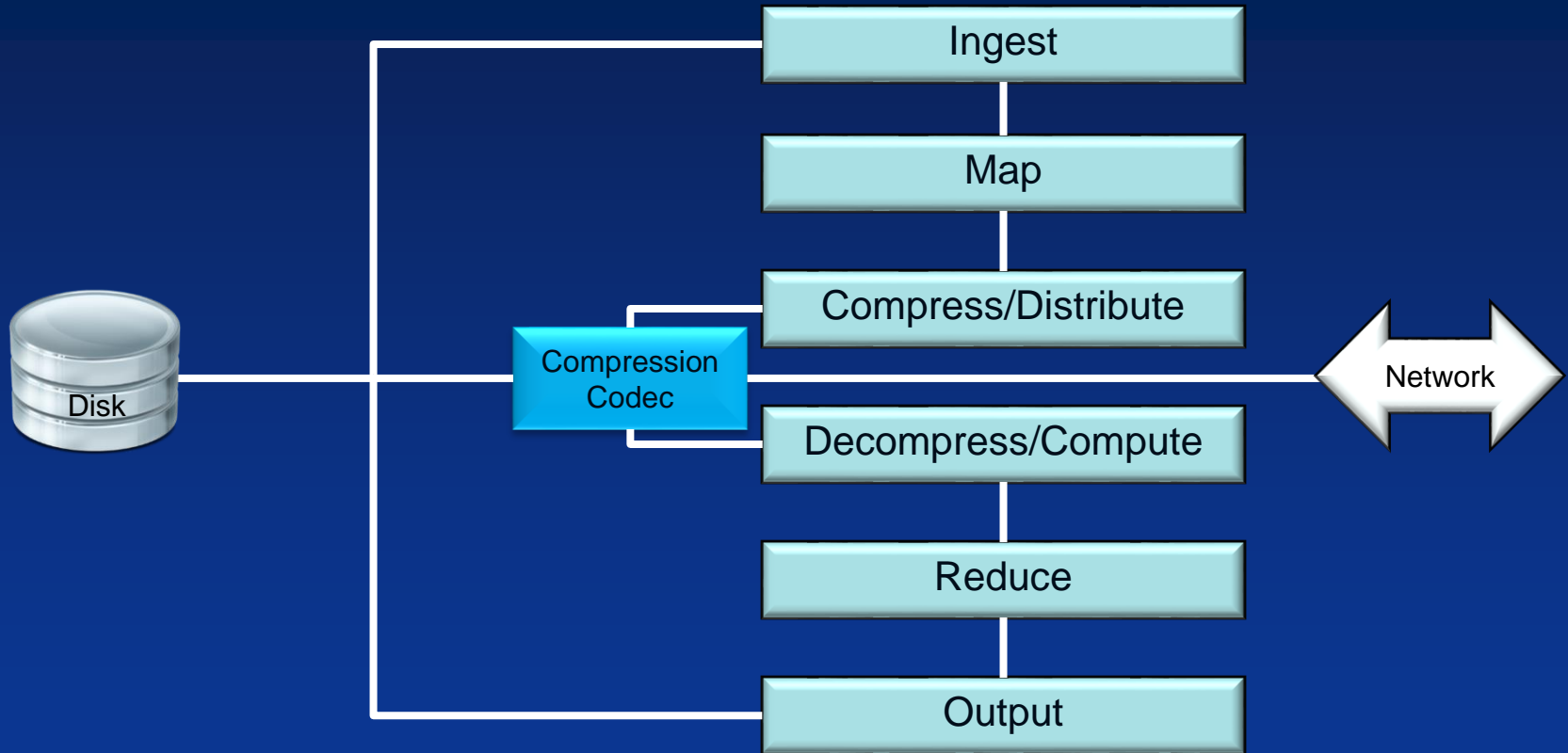


Capacity

It Is Difficult to Balance Performance, Capacity  
Scaling and Cost Associated with the Storage IO

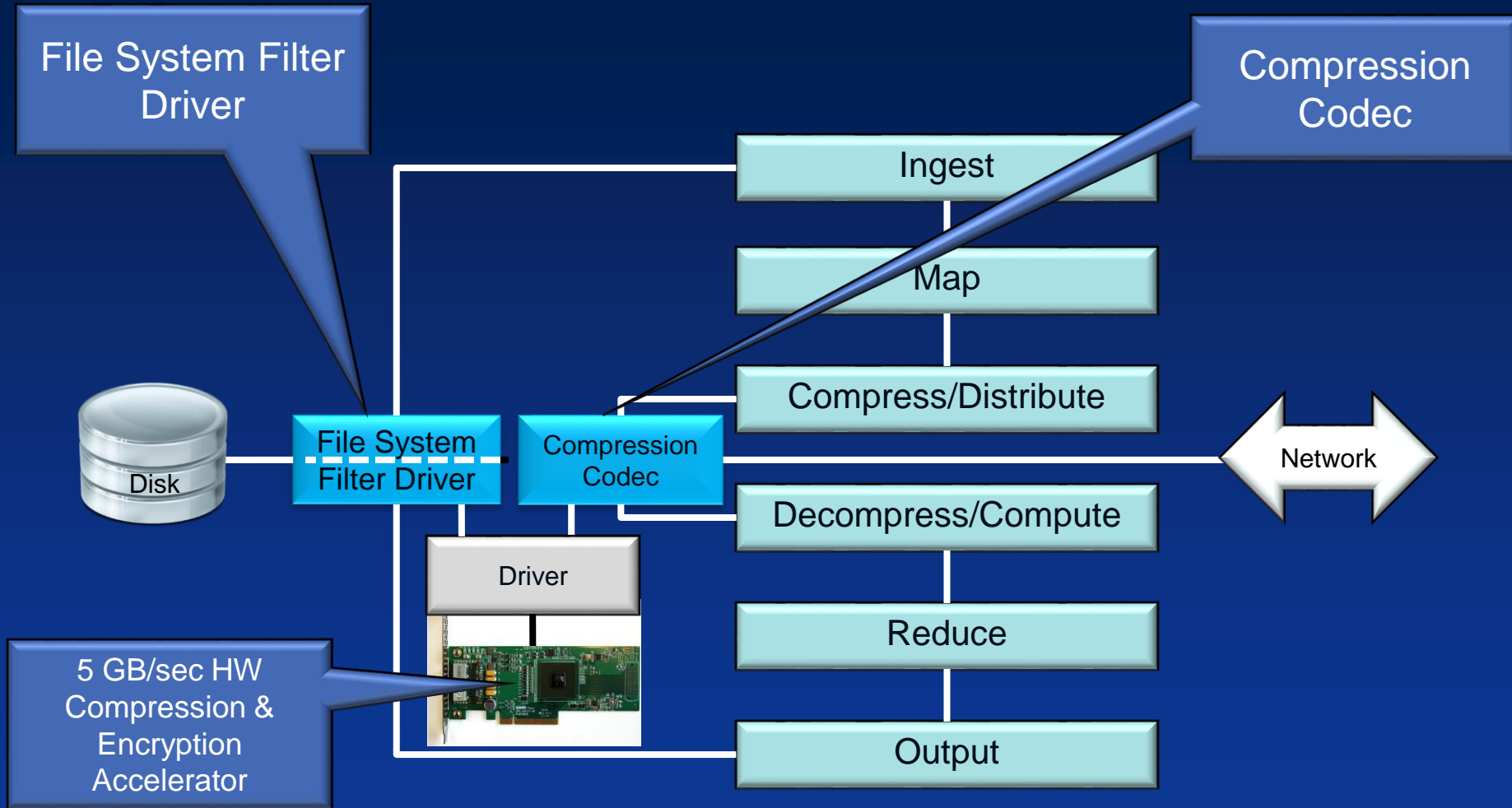
# Compression Technology

## Where In Hadoop To Apply Compression?



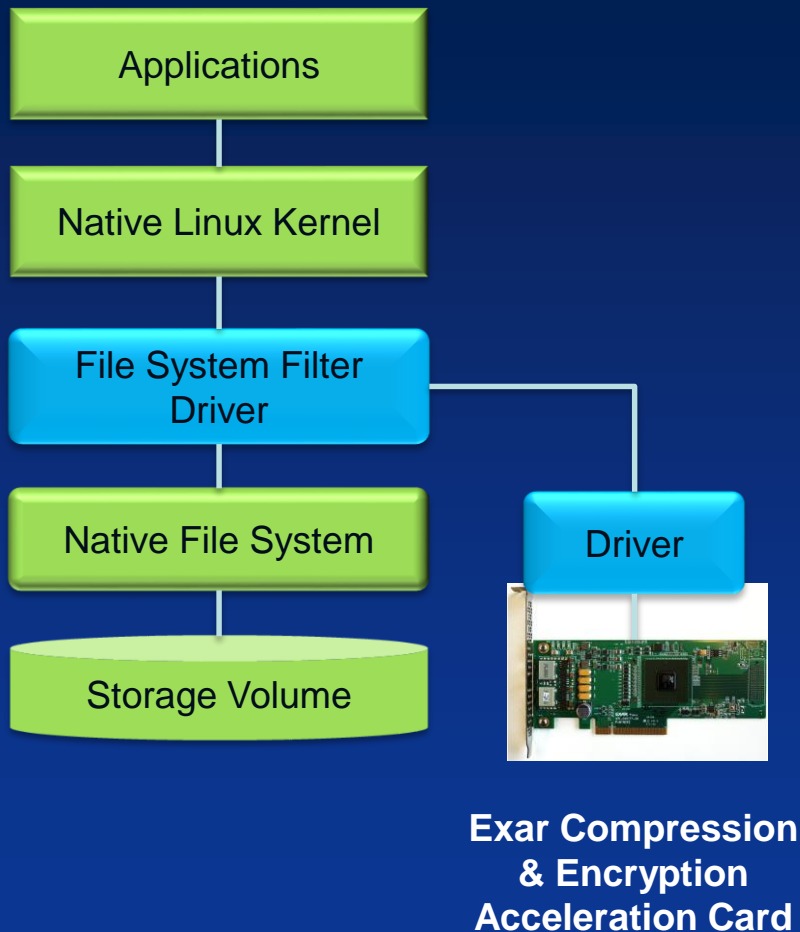
# Exar's Hadoop Acceleration - AltraHD

## Offload Compression and Accelerate



# AltraHD Overview

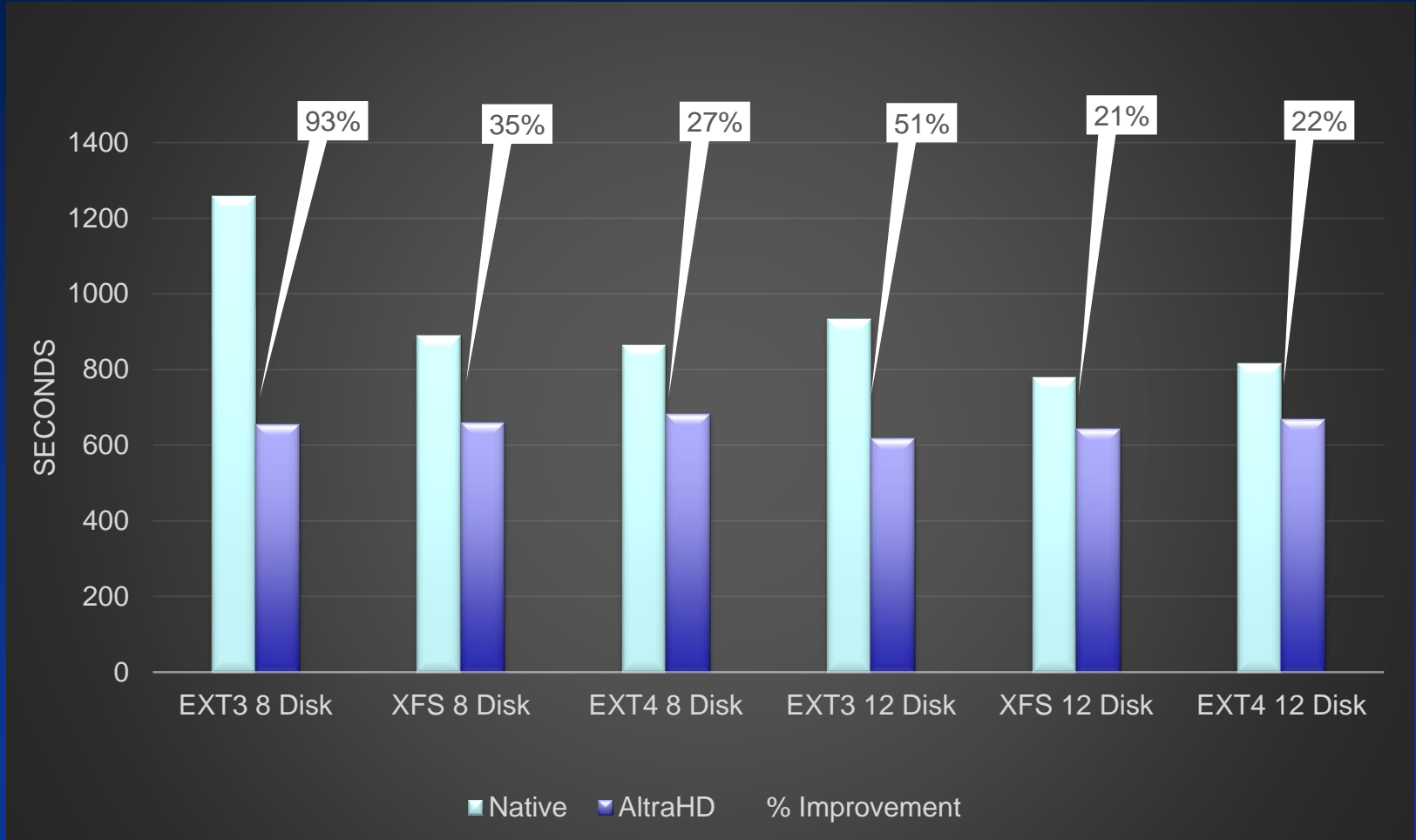
## Core Technology



- **File System Filter Driver**
  - Kernel plug-in at the file system layer
  - Compresses/decompresses ALL files independent of application
- **Transparent to the Application**
  - No modification to Applications or Workflow
- **Seamlessly Layers over File System**
  - Supports EXT3, EXT4, or XFS
- **Fast, Easy Deployment**
  - No APIs – Software installs in minutes
- **Hardware Acceleration Offloads Host CPU**

# Value Proposition – Performance

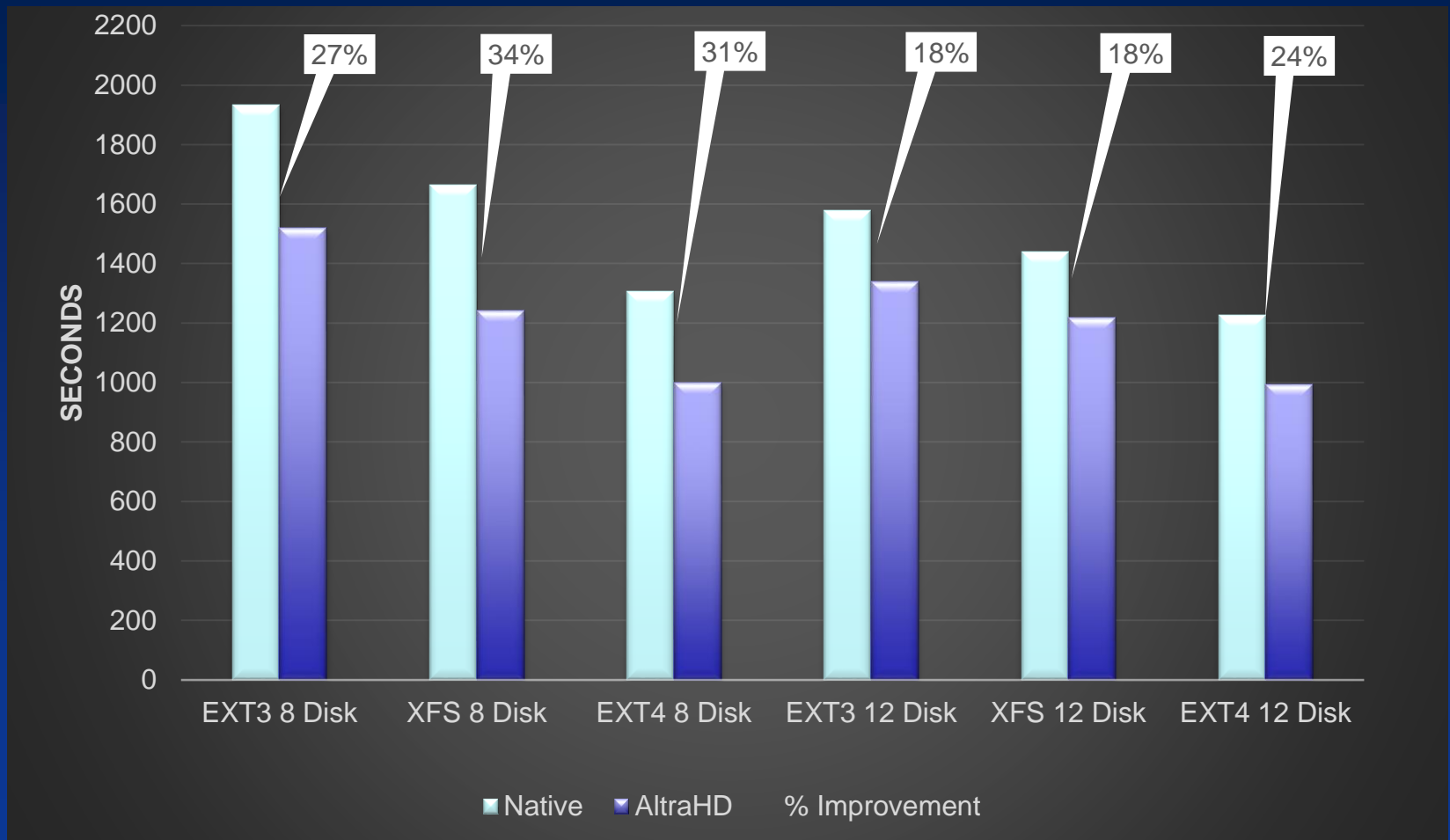
## MapReduce 1 Terasort Benchmark





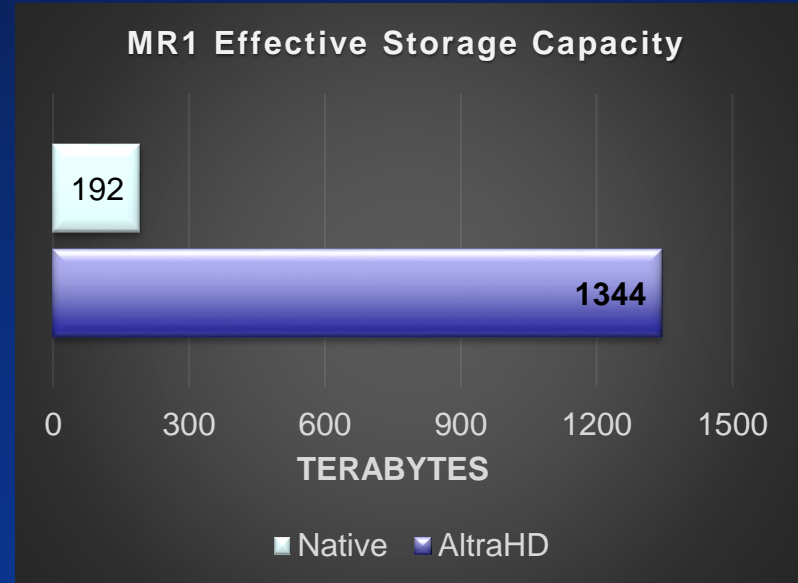
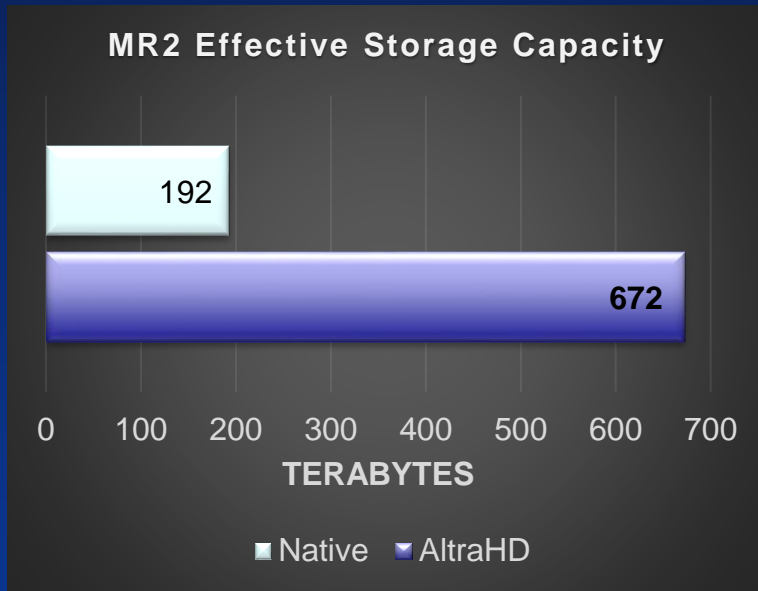
# Value Proposition - Performance

## MarReduce2 Job Execution Time



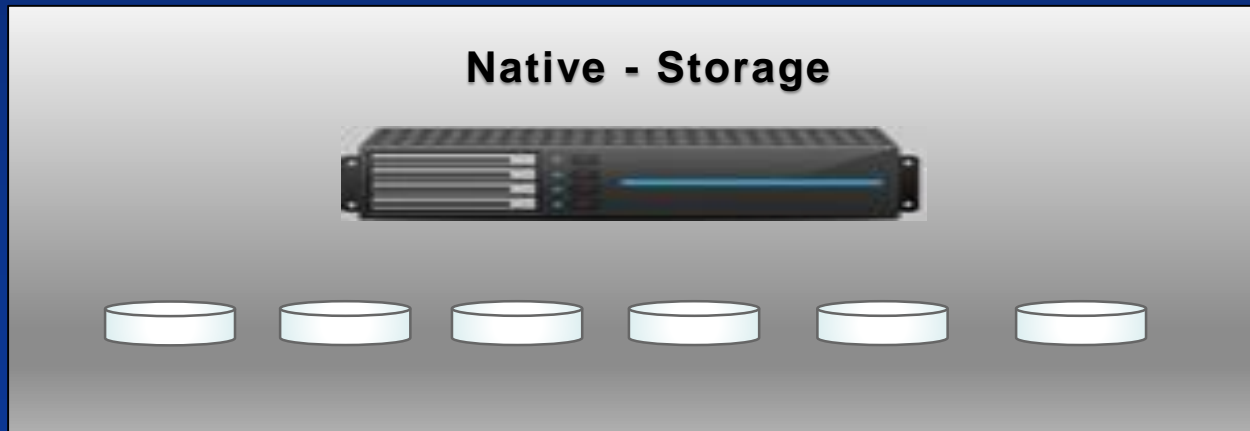
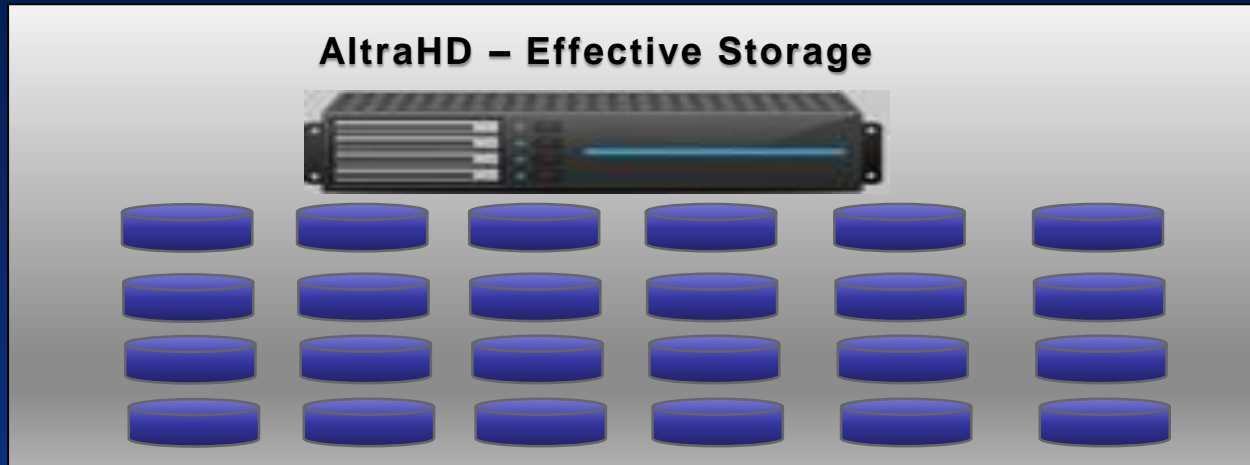
# Value Proposition – Storage

## Increased Storage Capacity



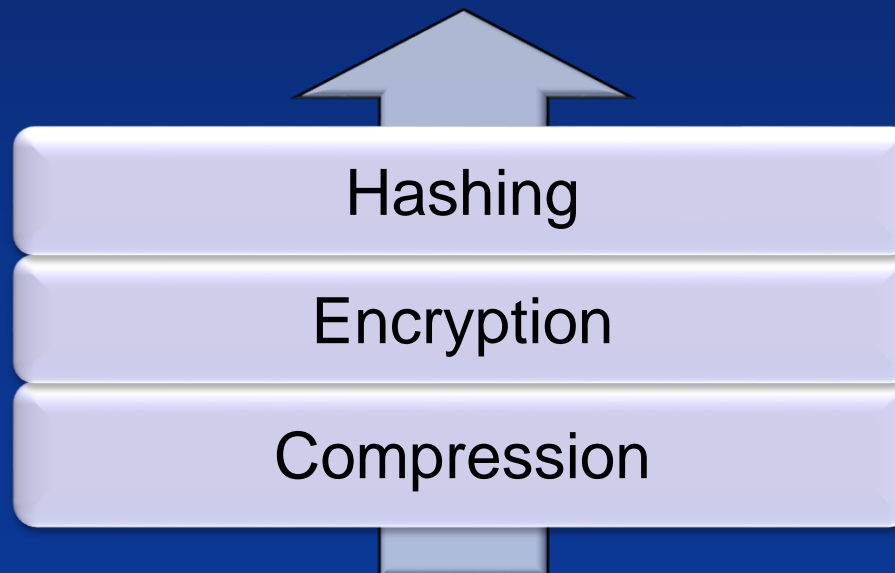
# Value Proposition – Storage

## Increased Storage Capacity



# Value Proposition – Security

- Exar's Compression Acceleration Card Supports Compression, Encryption, and Hashing in a Single Pass
- Aligned with Hadoop Security Roadmap



# Value Proposition – Indirect Values Other Savings

- Reduce Indirect Costs:
  - Power
  - Rack Space
  - Cooling
  - Disk Life
  - etc.



Thank You!

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