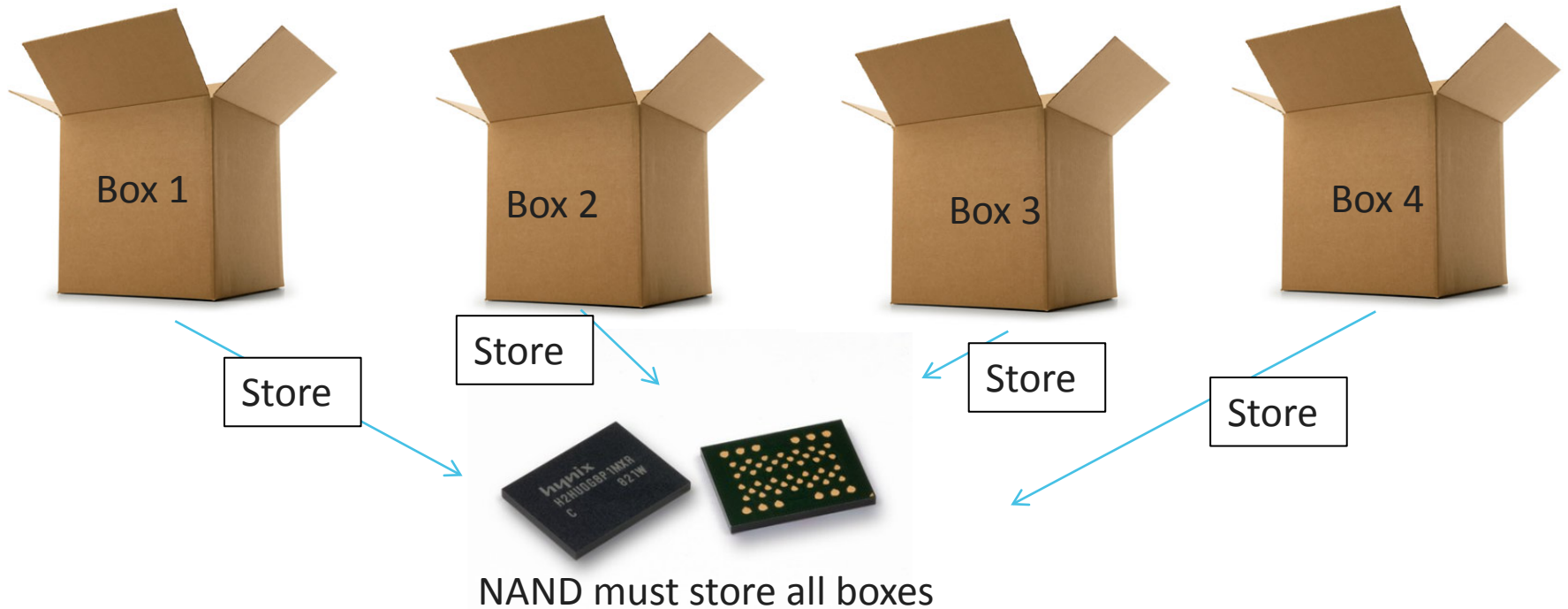# The Evolution Of Driver Support

- SSHD provide a challenging new adventure
- Unlike previous generations of hard drives, there is new challenges with new architectures
  - Customer will see self-learning SSHDs
  - Customer will see driver based SSHDs
- We'll give a brief overview of why both of these solutions exist

Hybrid Self Learning

Box 1

Box 2

Box 3

Box 4

Store

Store

Store

Store

NAND must store all boxes

Self learning drives store LBA in the NAND subsystem once they see a pattern of frequently requested information. Using smart algorithms for watching the cable traffic, the storage device can get very good performance.

Device Driver Hybrids

Store only the important stuff

Driver based solutions look inside of the box and places the most important information into the NAND subsystem, which should eventually lead to either endurance or speed advantages. Because of this insight, the SATA-IO standards group to created a hinting protocol to help do intelligent caching.

- The challenge with Device Driver based solutions is that some operating systems are not supported
  - Operating Systems like XP will not have driver support
- With the advent of Win 8.1, we start to see SSHD drivers included in base OS
  - Driver development is also in early phases, and the implementations of both drivers and SSHDs will improve
  - Seagate and Toshiba have shown that self-learning drives can have very impressive performance
- Self learning technologies will continue to have the benefits of being OS independent
  - This is important for legacy operating systems such as XP, or for operating systems currently without hinting support (Linux) that want hybrid advantages over just a HDD

THANK YOU