HEINZ NIXDORF INSTITUTE
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# *V:DRIVE: Costs and Benefits of an Out-of-Band Storage Virtualization Solution*

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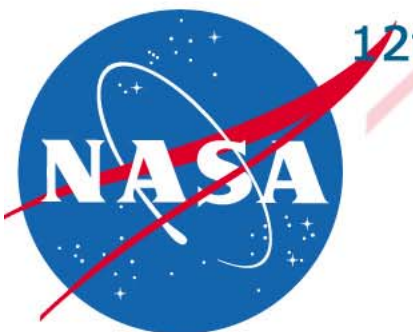


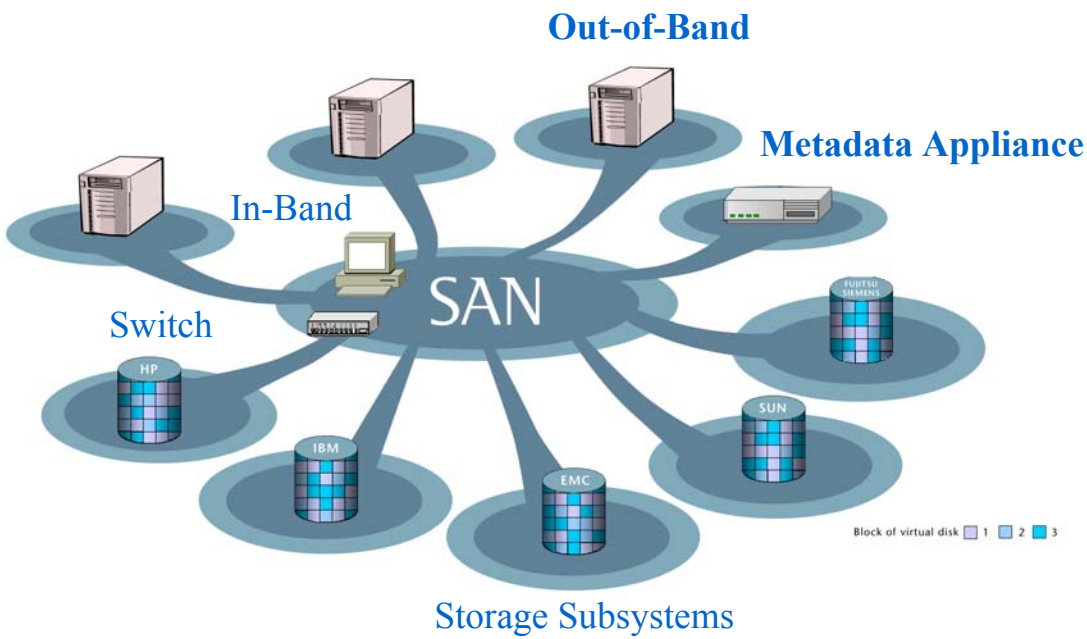

# *Storage Virtualization*

- Advances in network technology and growth of the Internet have changed demands on storage infrastructure and management
  - Exponential increase in stored data volume
  - 24/7 availability
- Keys to manage the data explosion are the introduction of
  - Storage Area Networks
  - Storage management solutions
- **Storage virtualization is the base of future-proof storage resource management**

# *Implementation of V:DRIVE*



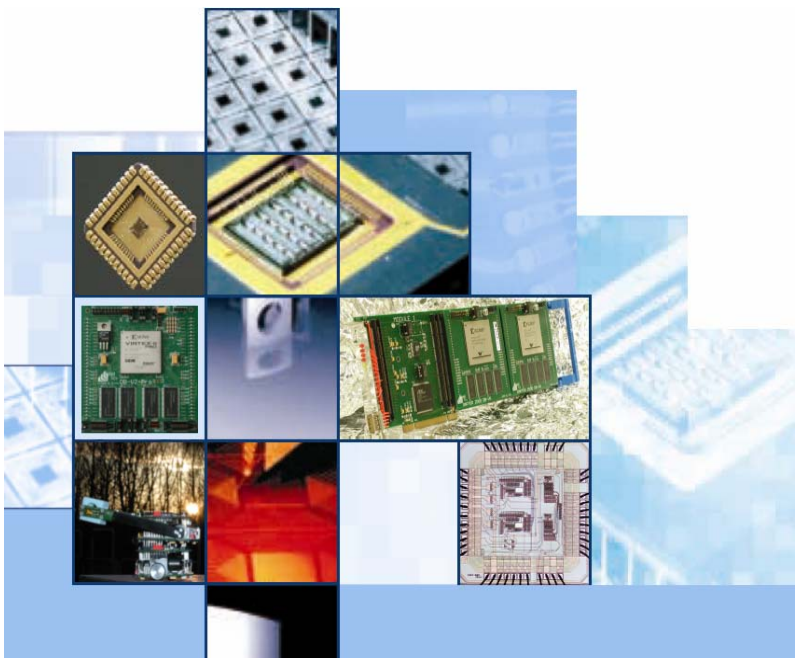
- Virtualization environment V:DRIVE is realized as out-of-band solution for Linux for heterogeneous storage area networks and consists of
  - Kernel modules
  - Graphical user interface
  - Fault tolerant metadata management and tools
- Modular design of virtualization environment V:DRIVE enables integration as out-of-band or in-band solution or inside an intelligent storage switch



# *Out-of-Band Overhead*

- Comparison of out-of-band solution with plain disks
- Different Scenarios
  - Access Pattern
    - Sequential Read/Write
    - Random Read/Write
  - System State
    - Server has complete information about SAN
    - Server has to request allocation information from metadata appliance on logical unit level
    - Metadata appliance has to allocate storage space for logical units
- Conclusion: An out-of-band storage virtualization can be efficiently implemented in a storage area network

# Thank your for your attention!



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