d i g i t a l

Data Warehouse Direct Access I/O for DIGITAL UNIX clusters

Increased system performance with unprecedented scalability for terabyte-size Oracle* Parallel Server data warehouse applications

Data is your business. Giving you the fastest possible access to it is ours. We do that with configuration and implementation capabilities tailored to meet your exact needs.

Understanding your customer's needs…

… is a key to business success

Your challenge is to implement the latest technologies for a competitive advantage — without disrupting operations.

One such technology is DIGITAL UNIX® Data Warehouse Direct Access I/O (DAI/O). Direct Access I/O pioneered by DIGITAL UNIX engineering allows you to take advantage of SCSI disk subsystem performance while freeing up the Memory Channel™ interconnect.

Direct Access I/O is a distributed raw disk (DRD) subsystem software utility that allows direct SCSI access to a disk from any connected node within a DIGITAL UNIX cluster.

The benefits for your data warehouse operations can be compelling. But how can you find the time to implement it?

The answer is simple: turn to DIGITAL *Custom***Systems** and its High-Performance Interconnect (HPI) program.

We deliver high-performance Data Warehouse DAI/O solutions by the project with

- Analysis of existing configuration and solution design
- Verification testing of your specific configuration
- Development of scripts and other specific tailoring
- Factory integration and testing
- On-site installation and verification

Benefits

- One-stop shopping for DAI/O and other high-availability and high-performance data warehouse solutions.
- Skilled engineering and technical resources that simplify and accelerate implementation while lowering risk and cost.

Figure 1.

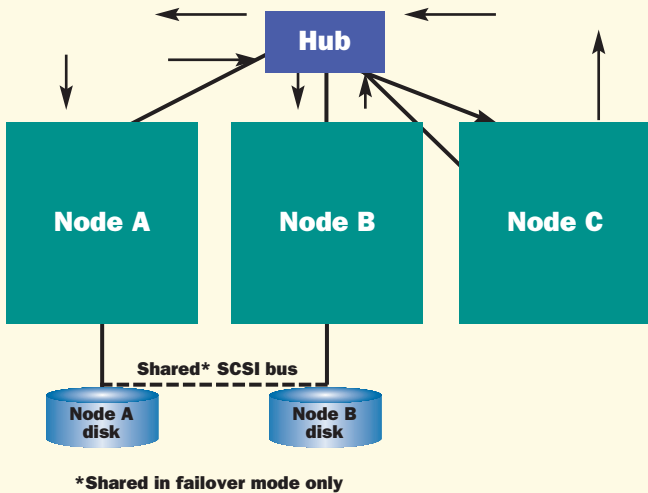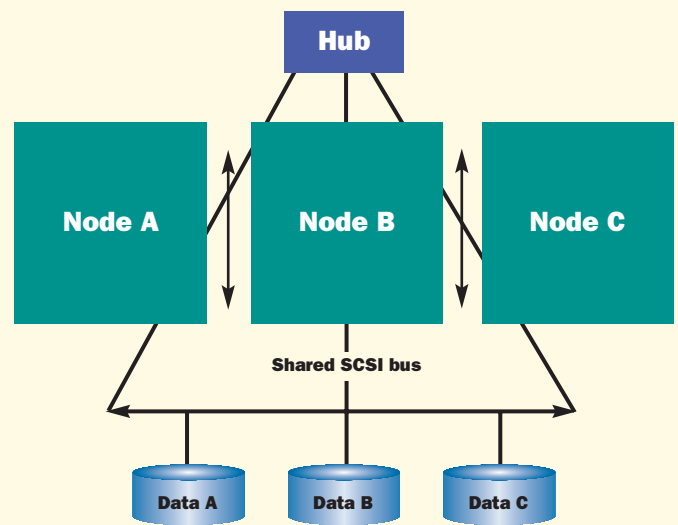## Traditional "cluster-access-to-storage" model

Figure 2.

Data Warehouse Direct Access I/O

The current Distributed Raw Disk (DRD) model for cluster access to disk storage designates a node (Node A or B in Figure 1) as the I/O server for all other nodes. A cluster node (node C in figure 1) that is not serving a DRD disk accesses data by sending I/O requests over the Memory Channel interconnect to the designated I/O server. This server passes data back to the requester through the Memory Channel interconnect, limiting total I/O system throughput.

Direct Access I/O technology (Figure 2) eliminates the need for data requests to be sent over Memory Channel in normal operation. Nodes A, B and C are directly connected to the cluster storage array. Each node can directly access all shared storage in the cluster without impacting Memory Channel bandwidth capabilities. This enables cluster I/O to scale in performance as well as capacity as more nodes are added.

Direct Access I/O technical focus

The physical database for a decision support system is often terabytes in size, resulting from the consolidation of numerous distinct corporate databases. This database is commonly referred to as the data warehouse.

Direct Access I/O is a licensed software utility that enables DIGITAL to deliver scalable data warehouse solutions by assisting clustered node members with the sharing of data across a common SCSI bus.

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Direct Access I/O allows a single device to be accessed simultaneously by multiple member systems.

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Bandwidth to storage disks is increased when multiple SCSI buses are used, optimizing system access to stored data.

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Direct Access I/O enhances the functionality and features of Oracle Parallel Server.

The following restrictions exist for Direct Access I/O: LSM volumes are not supported; disks already used in ASE services cannot be used; some asemgr checks are not performed; careful definition of support for those interfaces is required; cluster must be running a parallel database software.

High Performance Interconnect program

Successful high-performance interconnect solutions require good system design and an understanding of the overall computing environment.

That's why DIGITAL has created the High Performance Interconnect program: to deliver evaluation, design, integration, and implementation solutions for high-speed interconnect technologies like DAI/O.

For more information

For more information, contact your corporate sales representative or authorized business partner. Or call **800-DIGITAL**.

Visit us on the Web at
www.digital.com/customsystems

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