

Hitachi Dynamic Provisioning™ Software

Hitachi Dynamic Provisioning™ software is a new thin provisioning product that provides “Virtual Storage Capacity” to simplify administration, eliminate application service interruptions, and reduce cost when adding storage.

Hitachi Dynamic Provisioning Software—Advanced Thin Provisioning for the Hitachi Universal Storage Platform™ Family

For companies faced with ongoing rapid growth of their data storage requirements and escalating storage and storage management expenses, Dynamic Provisioning software greatly simplifies the application storage provisioning process and saves money on storage purchases.

Dynamic Provisioning software allows storage to be allocated to an application without it actually being physically mapped until it is used. This just-in-time method means storage allocations can exceed the amount of storage that is physically installed. It also decouples the provisioning of storage to an application from the physical addition of storage capacity to the storage system. Both significantly simplify the storage-provisioning process.

As physical storage is nondisruptively added to the storage system, it is placed in a central pool that is available to all thin provisioned volumes. When an application requires additional capacity, the storage system automatically allocates the additional physical storage needed to the volume. Behind the scenes, Dynamic Provisioning software monitors storage resources and proactively sends alerts before more physical storage is required.

Dynamic Provisioning software also simplifies performance optimization by transparently spreading many individual application data sets across many physical disks, thereby reducing performance management concerns and optimizing performance/throughput.

With use of Dynamic Provisioning software, overall storage utilization rates improve and the entire storage system is tuned for maximum efficiency. And in tiered storage environments where application quality of service requirements can easily be matched to storage assets, Dynamic Provisioning offers a useful, low-cost tier option whether the physical storage capacity is internal to a Hitachi Universal Storage Platform™ model or virtualized with an external heterogeneous storage system.

Coupled with the advanced features and reliability of the Universal Storage Platform family, Dynamic Provisioning software offers reduced capital and management expenses and an improved return on storage investment.

Benefits

Ease Storage Additions; Reduce Cost and Complexity

- With Dynamic Provisioning software, application storage provisioning is much simpler, faster, and less demanding on the administrator than the extensive orchestration required by traditional provisioning. The administrator can draw from the Dynamic Provisioning pool without immediately adding physical disks.

Business Solutions

Hitachi Data Systems and its Hitachi TrueNorth™ Channel Partners offer industry-leading technology to help organizations of all sizes meet their unique requirements for business continuity, regulatory compliance, and data recovery. Together, we provide cost-effective storage products and solutions that leverage world-renowned Hitachi global R&D resources to deliver performance, availability, and scalability—supporting business-critical applications and strengthening competitive advantage.

Hitachi Data Systems storage management solutions consist of hardware, software, and services that apply best practice planning and configuration with expert onsite installation support to ensure the solution is set up correctly and optimally for the environment, with the least amount of disruption. Hands-on training classes are also available and recommended for all products, on your site or at Hitachi Data Systems training centers.

Complementary software solutions for Hitachi Dynamic Provisioning software include: Hitachi Basic Operating System V, Hitachi Tuning Manager, Hitachi Universal Volume Manager, Hitachi ShadowImage® Heterogeneous Replication, and Hitachi Replication Monitor software.

- When more physical storage is needed the administrator can simply and nondisruptively install additional physical disks by adding them into the Dynamic Provisioning disk pool. This decoupling of physical resource provisioning from application provisioning simplifies storage management, reduces application outages, saves time, and keeps costs down.

Reduce Application Outages When Provisioning

- Since virtual volumes of maximum anticipated capacity can be defined in the beginning, the volume capacity does not have to be increased and the application and system configurations do not have to be changed as often, thus improving application availability.

Simplify Storage Performance Optimization

- Dynamic Provisioning software effectively combines many application I/O patterns and spreads the I/O activity across all available physical resources. This optimization eliminates the challenges of manually spreading an application over many spindles and predicting I/O patterns that will cause contention and performance bottlenecks.
- Dynamic Provisioning software optimizes aggregate throughput and generally delivers the best performance—automatically.

Reduce Storage Acquisition Costs; Minimize Over-provisioning

- A volume larger than the physical disk can be defined. This allows all anticipated storage to be configured initially, while only the required physical disk capacity is purchased at the start and incrementally, over time, keeping costs down.
- Additional physical disks can be purchased later and installed transparently without an application service interruption.
- The reduction in physical disk requirements also provides savings in space, power, and cooling requirements.

Simplify Replication Provisioning and Save

- Since the desired capacity of a volume can be defined regardless of the physical disk capacity, using LUSE for volume

Feature Highlights

RAID levels supported	All Hitachi Universal Storage Platform™ V and Hitachi Universal Storage Platform VM supported RAID levels
Disk types supported	All Universal Storage Platform V and Universal Storage Platform VM supported disk types
Number of thin-provisioned LUNs (volumes) per pool	1 to 4096
Number of pools per Universal Storage Platform (Universal Storage Platform V and Universal Storage Platform VM)	1 to 32
Thin-provisioned LUN emulation type	OPEN-V
Pool usage threshold settings	There are two threshold settings: one is at 80 percent and one is user-definable
Alerts	CIM, SNMP, and through Hitachi Device Manager software

expansion is no longer necessary. This simplifies creation of replication pairs.

- Cost benefits are further enhanced in replication environments because the savings from thin provisioning are also replicated.

The greatest overall benefits from Dynamic Provisioning software will be realized by organizations with stable environments and large, consistently growing files or volumes. Also, since the design of some applications (and file systems) causes them to “touch” what they see as available storage (either immediately or over a short period of time),

the benefits of Dynamic Provisioning software may in some cases be file system and/or application dependent.

System Requirements and Support Matrix

Hitachi Dynamic Provisioning software is available only on the Hitachi Universal Storage Platform family. For detailed system requirements see:

<http://www.hds.com/go/hicommand-requirements>

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