



IBM® Tivoli® Storage Manager 5.4

Differences overview: Changes for this release

Tivoli. software



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Objectives

Upon completion of this unit, you will be able to:

- Discuss the major changes for IBM Tivoli Storage Manager 5.4.
- Explain the benefits of the new features.

Contents of this presentation

- Overview of administration center updates
- Overview of active data pools
- Overview of backup set enhancements
- Overview of data shredding
- Overview of network data management protocol (NDMP) changes
- Overview of upgrading from IBM Tivoli Storage Manager Express

Administration center updates

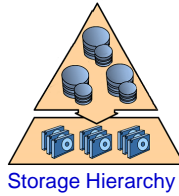
- Update administrator password to a group of selected servers
- Performance fixes and administration API rewritten for streaming mode
- Command-line applet usability fixes
- Support added for these commands:
 - ▶ AUDIT LIBRARY
 - ▶ AUDIT VOLUME
 - ▶ QUERY NODEDATA
 - ▶ MOVE NODEDATA
 - ▶ QUERY MEDIA
 - ▶ MOVE MEDIA

Administration center updates (cont.)

- Administration center updates to support the following new functions:
 - ▶ Use the Tivoli Storage Manager server as the NDMP tape server (network filer-to-Tivoli Storage Manager server backup)
 - ▶ Create media for offsite vaulting from NDMP-generated images
 - ▶ Destroy expired data (data shredding) for random-access disk
 - ▶ Tape drive encryption
 - ▶ Optical device support on Linux®
- Administration center tutorials translated
- 5.4 administration center and integrated solutions console (ISC) will be available for 5.3 customers on the ftp site
- 5.2 Web administration will still work with 5.4

Collocation of active data

Storage hierarchy contains active and inactive data.

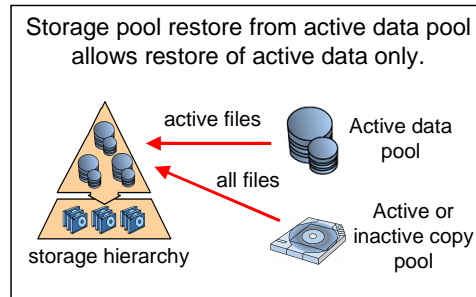
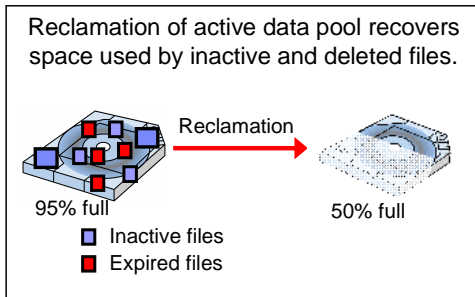
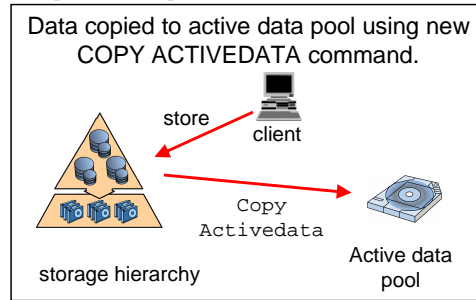
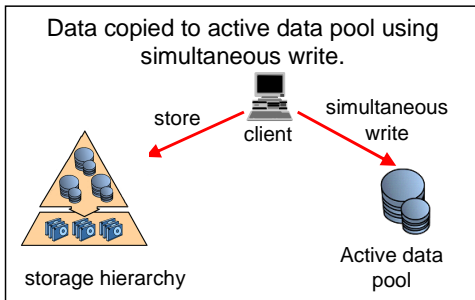


New active data pool on disk for fast restore.

Active and inactive data in copy pool for disaster recovery.

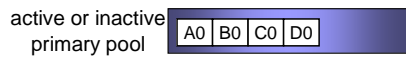
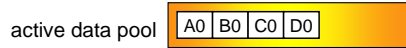
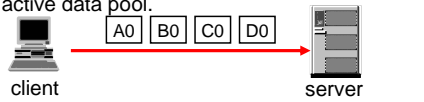
- Active backup versions still reside on client machine (have not been modified or deleted)
- Active data pools are typically on sequential-access disk
- Benefits of active data storage pools on sequential-access disk
 - Optimized access to active versions for fast restore
 - Reduced size of pools if only active versions are stored
 - Reduced data movement in preparation for restore of active data
- Benefits of active data storage pools on tape
 - ▶ Reduced storage requirement while protecting active data against media failure or disaster
 - ▶ Simplified tape management because of fewer tapes

Collocation of active data (cont.)

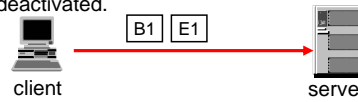


Collocation of active data (cont.)

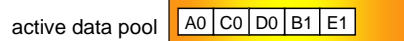
1. Client backs up A0, B0, C0 and D0 with simultaneous write to the primary pool and the active data pool.



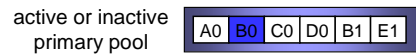
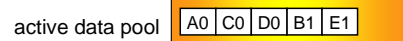
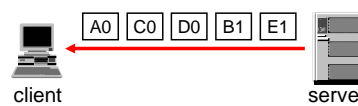
2. Client backs up B1 and E1 with simultaneous write to active data pool. B0 is deactivated.



3. Reclamation removes inactive B0 from active data pool.

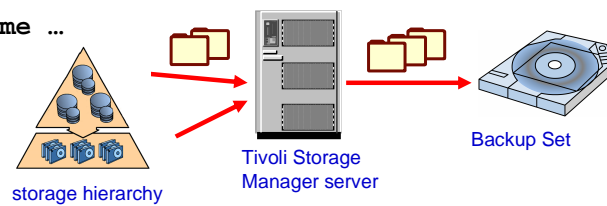


4. Client restores active files A0, C0, D0, B1, and E1 from active data pool.



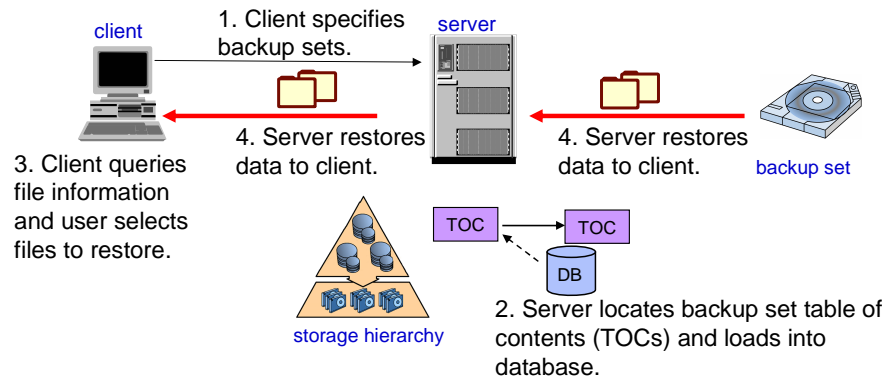
Generation of backup sets to a point in time

```
GENERATE BACKUPSET nodename ...  
PITDATE=mm/dd/yyyy  
PITTIME=hh:mm:ss
```



- Allows generation of backup set to a specified point in time
 - ▶ Files must not already be expired or deleted from the server
 - ▶ Default is date and time of backup set generation
- Benefits
 - ▶ Increases operational flexibility because backup sets need not be generated before next client backup
 - ▶ Allows retroactive generation of “synthetic full” backup if unanticipated needs arise

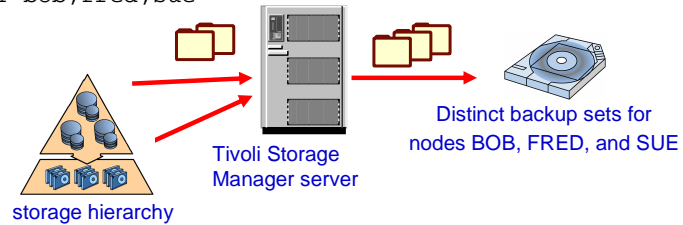
File Selection During Backup Set Restore



- Server storage pool has TOC with backup set contents.
- On demand, server loads TOC into Tivoli Storage Manager database.
- Client queries TOC and displays directory tree structure and files.
- User expands directories and selects files for restore.
- This simplifies the task of restoring selected directories or files from a backup set.

Generation of backup sets for list of nodes

```
GENERATE BACKUPSET bob,fred,sue
```

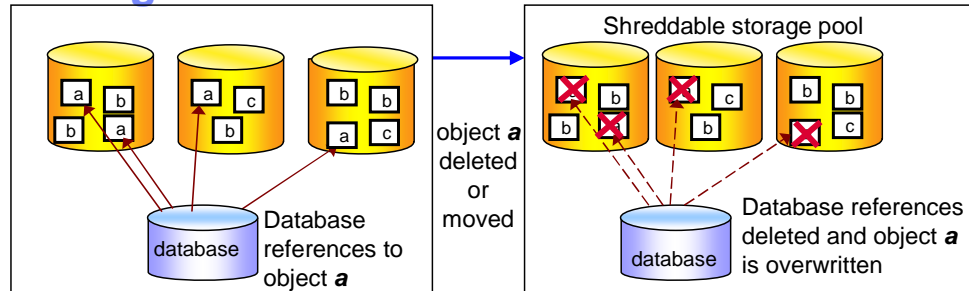


- Allows generation of multiple backup sets with a single command.
 - ▶ A distinct backup set is generated for each node.
 - ▶ Backup sets generated with a single command are written sequentially to the same media.
- Improves media utilization.

Possible uses for enhanced backup sets

- Offsite vaulting of self-describing data
- Traditional tape rotation (such as grandfather/father/son rotation) for small to medium businesses or departmental environments
- Long-term retention of point-in-time data
 - ▶ Individual files in backup set do not require entries in Tivoli Storage Manager database because entire backup set is tracked as a single entity
 - ▶ Separate policies for retention of backup set and individual files stored by Tivoli Storage Manager
 - ▶ May be useful in environments with stringent regulatory requirements for data retention

Shredding of data stored on disk



- Allows disk storage pools to be designated as *shreddable*.
 - ▶ Random-access disk (not tape or other device types)
 - ▶ Primary pools only
- When a data object is moved or deleted from a shreddable pool, Tivoli Storage Manager server overwrites the object.
- Sensitive data objects are destroyed when deleted or moved, preventing undesirable data discovery.

NDMP: Disaster recovery and backend movement

Tivoli Storage
Manager Server



..... NDMP control (TCP/IP)

— Data flow (SCSI/FC)



NAS
Device

Read

Tape Library 1

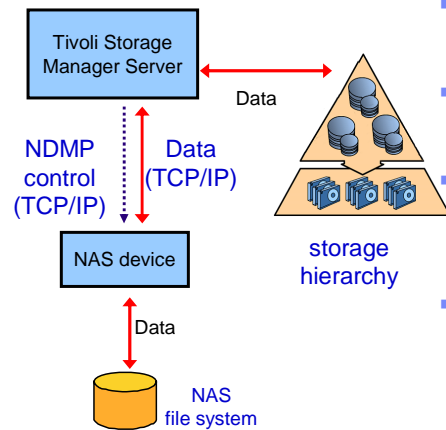
Write

Tape Library 2

Libraries 1 & 2 could
be the same

- Use NDMP tape-to-tape copy for backend movement of data stored on Tivoli Storage Manager server with NDMP.
- Supported operations:
 - Storage pool backup
 - Storage pool or volume restore
 - Move data
 - Intrapool for space recovery
 - Interpool for migration to new device type
- Disaster recovery management (DRM) support for NDMP data
- Restore node will use copy pool, if primary data not accessible
- IBM N series, Network Appliance, EMC Celerra, and other NAS devices certified for NDMP operations with Tivoli Storage Manager

NDMP filer-to-server configuration



- Allows centralization of storage devices
- Exploits full capability of Tivoli Storage Manager storage hierarchy
- Data flow over the LAN and through Tivoli Storage Manager server
- IBM N series, Network Appliance, EMC Celerra, and other NAS devices certified for NDMP operations with Tivoli Storage Manager

Upgrade from Tivoli Storage Manager Express

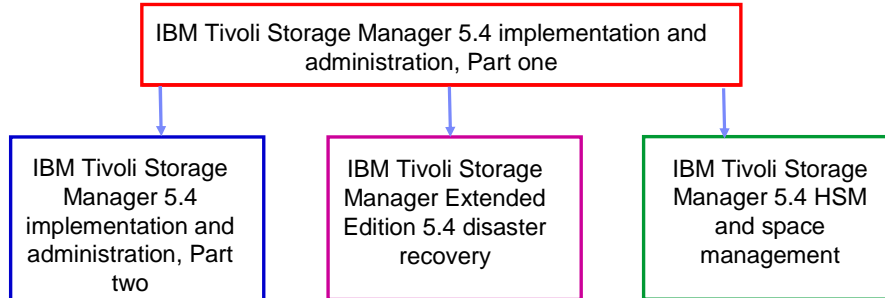
- Enable an upgrade from Tivoli Storage Manager Express to Tivoli Storage Manager enterprise, preserving the data backed up by Tivoli Storage Manager Express and the Express configuration settings
- Give Express users enough information during the Tivoli Storage Manager 5.4 installation process to prepare appropriately for the upgrade
- Keep the Express administrative interface available after the upgrade.
- Provide documentation that bridges the gap between skills learned for Express and skills needed to start working in enterprise

Summary

You should now be able to:

- Discuss the major changes for IBM Tivoli Storage Manager 5.4.
- Explain the benefits of the new features.

IBM Tivoli Storage Manager 5.4 curriculum roadmap for implementers and administrators



http://www.ibm.com/software/tivoli/education/edu_prd.html

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