

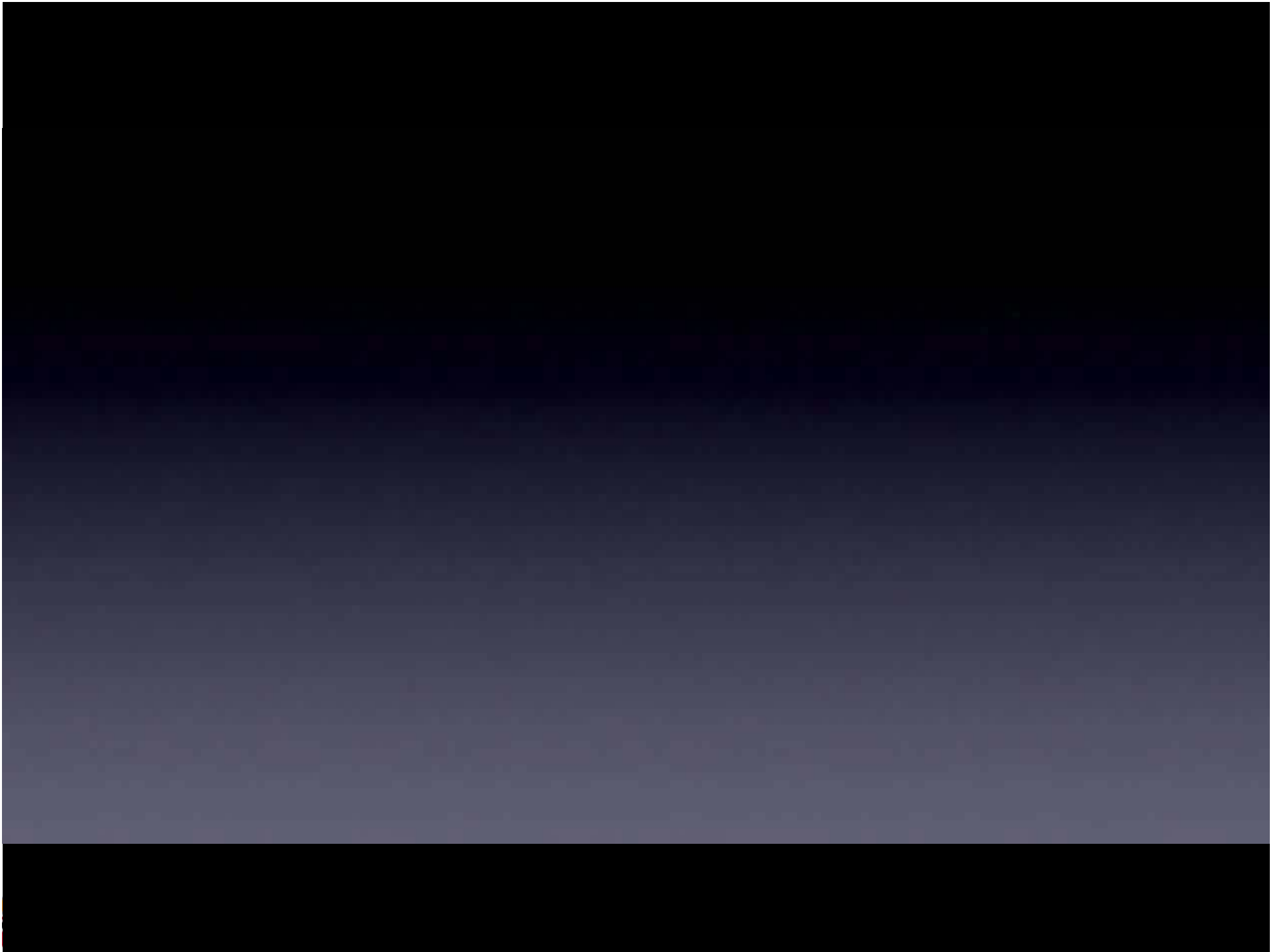


Pulse2011



TSM (Tivoli Storage Manager) Backup and Recovery

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Horatio from Hertz Australia



Hertz®

Need to Add Value

- Hertz has over 220 car hire locations nationally in Australia
- Must provide prompt accurate restores
- IBM TSM demonstrated it was an enterprise capable system ... at a cost effective price.



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Need to Add Value

- What is meant by “Enterprise Capable”?
- Backup system needed review and/or replace
- Growth to unmanageable levels
- After extensive research, comparisons, site visits and cost of ownership reviews. In every instance IBM TSM came up trumps.
- Replace legacy backup installation with IBM Tivoli Storage Management solution



What we got ...

- No more “Grand father, Father, Son” backup, Switching to a new type of backup... “Perpetual incremental”
- Running a Perpetual incremental providing big savings on time and media.
- When installing the TSM system we purchased...
 - Backup client for file systems
 - Lotus Notes Domino client
 - & SQL client
- As a complete system this provided a robust, reliable environment that was above all was “Enterprise capable”!



Limitations of backup systems

- IT systems sometimes cannot grow to the extent of an enterprise capable system ...
 - Difficult to manage
 - Inability to grow
 - Keep pace with environment they are serving.

- IBM TSM provided a centralized, automated data protection to help reduce the risks associated with data loss. This highly scalable software helps us manage more data with less infrastructure and simplified administration.

- Now finally we could improve service levels and comply with data retention policies with ease.



Product Overview

- Automates backup and restore functions and centralizes storage management operations.
- Backup and recovery management – A single administrator interface allows configuration, monitoring, reporting and backup/recovery execution across the entire complex IT environment.
- Hierarchical storage management – Enables policy-based management of file backup and archiving, with automatic migration of data between tiers of storage. This feature reduces storage media requirements and administrative costs associated with managing data.



Product Overview

- Scalability – Manage as many as two billion data objects in a single Tivoli Storage Manager server.
- Advanced data reduction – Combines progressive incremental backup, source and target data deduplication, compression and tape management. This advanced technology cuts data storage costs, decreases environmental requirements and simplifies administration.
- In addition TSM supports the Unicode Standard



Client Server setup

- The installed backup can be accessed by command line (which is what I like to use)
 - Web [http](http://): connection or ISC
- We have configured our client nodes to backup using compression which is controlled neatly by the TSM server.



Three lots of backups

- Not only does the data get backed up onto tape
- Firstly copies the data onto the TSM backup server.
- This may be a local hard disk, SAN or NAS device.
 - In our case it backs up data onto hard disk drive located on our enterprise SAN.
- Then in turn copied to the “Backup Storage tape Pool”.
- Then the data is copied to offsite “Backup copy pool”, which is shipped off site.



How do we know which tapes go offsite

- Very clever database
- DB keeps track of every object in the backup environment.
Including ...
 - TSM Server
 - Clients
 - Backed up files and data
 - Tapes and drives

- Fully command line query db
- TSM also provides database mirroring feature



Running backups

- Once business requirements confirmed
- Backups and the system has been configured
- Backups run; and in most instances they run without a hic-up.
- **Question:** But what if the data to be backed up during one night is too large to finish coping to tape?
- **Answer:** The neat part about having a disk to disk backup is 'speed'. Obviously disk to disk is very fast and migrating to tape can be performed at anytime ... even during the business day because the TSM disk storage is totally independent of system data. This disk to tape backup is done during our normal schedule.



What about security?

- All our TSM tapes are backed up with 'AES' Encryption Strength and tapes are shipped to a secure offsite vault.



What about restores?

- Restores are simple and fast
- We simply run either a baclient or the Web client; this allows selection of files and objects to be restored.



TSM DRM (Disaster recovery manager)

- This covers the tasks involved in recovering the server and clients. It also presents scenarios of both procedures.
- **Recovering the Server**
 - Obtain the latest disaster recovery plan file.
 - Break out the file to view, update, print, or run as macros, scripts, or JCL.
 - Obtain the backup volumes from the vault.
 - Locate a suitable replacement machine.
 - Review the RECOVERY.DRMODE and RECOVERY.NMODE REXX EXECs because they are important for restoring the server to a point where clients can be recovered (see Structure of the Disaster Recovery Plan File).



TSM DRM (Disaster recovery manager)

- **Recovering the Clients:** To recover clients, we do the following:
 - Get the following information by querying the recovered database:
 - Client machines that have been defined to TSM, along with their location and restore priority value
 - The location of the boot recovery media
 - Specific recovery instructions for the machine
 - Hardware requirements for the machine
 - With this information restore the client machines.



In a nut shell !

- An enterprise system was chosen and installed that would grow with the business – scalable
- System tasks are simple and efficient
- Superior fail safe mechanisms are built into the product ...
 - Copy to Disk
 - Onsite tape pool
 - Off site copy pool
- DRM (Disaster Recovery Manager) built into the product
- Multiple mechanism and tools to manage the environment

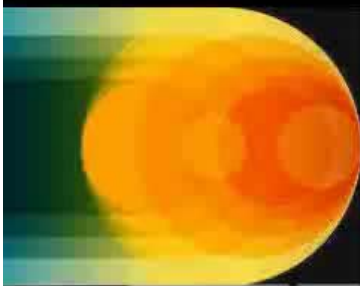


Questions

- Please be gentle with me ;)



SOLUTIONS



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