

Planning for a Disaster Using Tivoli Storage Manager



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Objective



- ❑ **Discuss how DRM assists in the recovery of the ADSM server and clients in a disaster**
- ❑ **Examine:**
 - ❑ **The steps to install DRM**
 - ❑ **DRM maintenance tasks**
 - ❑ **The steps required to restore the ADSM Server and clients**
 - ❑ **Disaster recovery media management with DRM**

What is a Disaster?



- ❑ **A catastrophic interruption of the business processing that destroys or disables an ADSM server, its clients or both.**
 - ❑ **If you delete a file or lose a disk, restore it from an onsite storage pool**
 - ❑ **If the site suffers a catastrophic failure, data is restored from an off-site source**

Disaster Recovery



- ❑ **The goal is to resume key business processing activities as quickly as possible**
- ❑ **Like an insurance policy...**
 - ❑ How much are you willing to invest?
 - ❑ What is the extent of the coverage?
 - ❑ What are the risks?

Securing the Server



- ❑ **If you want to get your ADSM server back after a disaster - every day you MUST:**
 - ❑ **Backup the primary storage pools to copy storage pools**
 - ❑ **Backup the ADSM database**
 - ❑ **Backup the VOLHIST file**
 - ❑ **Move the backup media to the offsite**
 - ❑ **Mark the media as offsite**
 - ❑ **Also a good idea to backup the DEVCONFIG file regularly**

What Do You Need to Recover?



- Backup copies of client files**
- Off-site backup copies of ADSM Server database and storage pools**
- A current recovery plan**
- Client recovery requirements**

What is DRM?



- ❑ **A separately licensed ADSM module**
 - ❑ **Code is shipped with the ADSM Server**
- ❑ **Facilitates ADSM based DR by**
 - ❑ **Providing and documenting a plan that can be tested, audited and is timely**
 - ❑ **Documenting your recovery strategy**
- ❑ **Provides media management of DR media**

Disaster Recovery Plan File



- ❑ **Easy to create - just type PREPARE**
- ❑ **Comprised of two basic types of stanzas**
 - ❑ **Textual information useful during a restore (i.e. system administrators name and phone number)**
 - ❑ **Executable code (i.e. ADSM macros to create storage pools, scripts to create volumes on the server file system)**
- ❑ **Assumes that the recovery server has the same structure (directories, devices etc.) as the original server**
- ❑ **If the environment isn't the same, you must edit the file to reflect the differences**

DR Plan File Stanzas



- ❑ **Command stanzas**
- ❑ **Site-specific instruction stanzas**
- ❑ **Server requirements stanzas**
- ❑ **Configuration file stanzas**
- ❑ **Machine and recovery media stanzas**

Customizing Disaster Recovery Manager



Step 1: Define Server Information

Step 2: Define DR Information for Clients

Step 3: Create Instruction Stanzas

Step 4: Modify DRM Server Settings

Step 5: Execute PREPARE Command

Step 1: Define Server Information



- ❑ **Define machine information for the ADSM Server**
- ❑ **Insert machine characteristics and recovery instructions for the server**

Step 2: Define DR Information for Clients



- ❑ **Define machine information for clients including machine location and business priority**
- ❑ **Insert machine characteristics and recovery instructions for clients**
- ❑ **Define client OS recovery media and associate client nodes with recovery media**

Step 3: Create Instruction Stanzas



- ❑ **Define site specific management and contact information**
- ❑ **Define offsite location and contact information**
- ❑ **Provide step by step server restoration instructions**
- ❑ **Define site specific instructions for restoring the database and storage pools**

Step 4: Modify DRM Server Settings



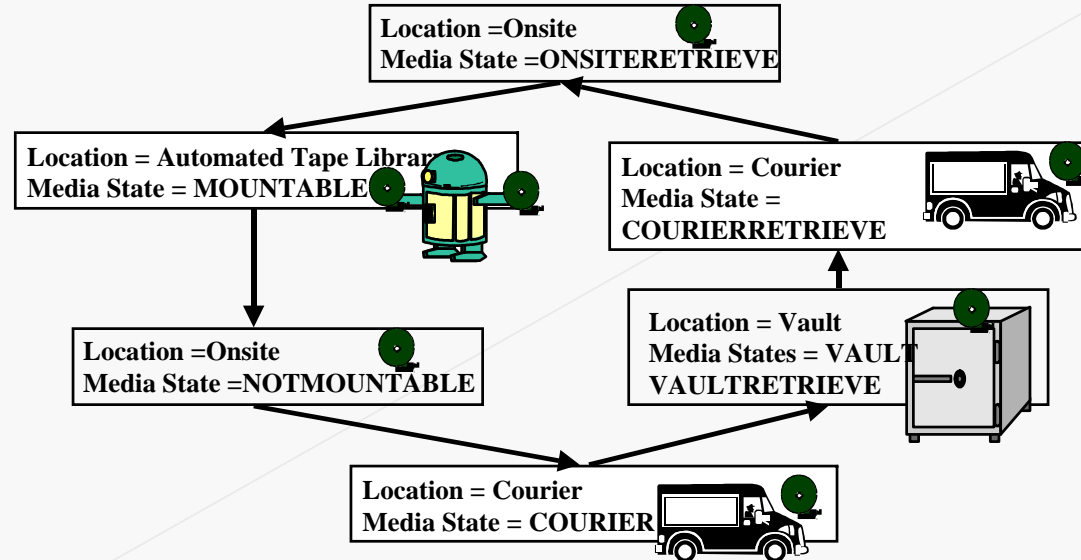
- Set the Plan Prefix**
- Set DRM Primary and Copy Storage Pools**
- Set DRM location names (notmountable, courier, vault)**
- Database backup retention period**

Step 5: Execute PREPARE Command



- ❑ **PREPARE command:**
 - ❑ Creates the Disaster Recovery Plan File
 - ❑ Replaces older copies of the plan
- ❑ **Should be scheduled after the storage pool and database backups are complete**

DRM Off-site Media Management



DRM Volume States



- Mountable**
- Notmountable**
- Courier**
- Vault**
- Vaultretrieve**
- Courierretrieve**
- Onsiteretrieve**

MOVE DRMEDIA Command



- ❑ **Identifies and tracks volumes moved offsite**
- ❑ **Identifies and tracks volumes moved from vault to onsite**
- ❑ **Tracks volumes states**

QUERY DRMEDIA Command



- ❑ **Displays information about DR volumes**
 - ❑ Copy storage pool volumes
 - ❑ Database backup volumes
- ❑ **Can be used to display only volumes in certain states**
 - ❑ For example – to list volumes ready to be moved from vault back on-site

Daily Operations with DRM



- ❑ Perform client backups
- ❑ Create backup copies of primary storage pools
- ❑ Create backup copies of the database
- ❑ Execute PREPARE command
- ❑ Remove DR volumes from library
- ❑ Give DR volumes and DR Plan to courier
- ❑ Receive DR volumes from offsite
- ❑ Give courier list of expired volumes to come back from offsite
- ❑ Checkin scratch volumes

Recovering the Server



- ❑ Obtain the latest disaster recovery plan file
- ❑ Obtain the backup volumes from the vault
- ❑ Locate a suitable replacement machine
- ❑ Install the OS and ADSM on replacement machine
- ❑ Use planexpl.awk or manually break out disaster recovery plan file to view, update, print, and execute stanzas
- ❑ Review RECOVERY.SCRIPT.DISASTER.
RECOVERY.MODE and
RECOVERY.SCRIPT.NORMAL.MODE
- ❑ Execute RECOVERY.SCRIPT.DISASTER.
RECOVERY.MODE and
RECOVERY.SCRIPT.NORMAL.MODE

Recovering the Clients



- ❑ **To recover ADSM clients, you must have the following information:**
 - ❑ Client machines that have been defined to ADSM, along with their location and restore priority value
 - ❑ The boot recovery media
 - ❑ Specific recovery instructions for the machine
 - ❑ Hardware requirements for the machine
- ❑ **To see the priority of machines**
 - ❑ `query machine building=021 format=detailed`
 - ❑ `query machine recoverymedia`

Summary



- ❑ **DRM's two major features offer the following possible advantages:**
 - ❑ **Faster and easier ADSM server recovery**
 - ❑ **More orderlier, well documented client recovery in the case of a disaster**
 - ❑ **Easier, more efficient media management of DR media**