Storage Decisions

Hosted by SearchStorage.com STORAGE

ILM-Aware Backup

26 May 2005

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ILM-Aware Backup

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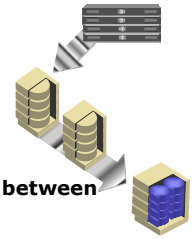
What I assume you know

- **Basics of ILM or HSM**
- **Classifying data value**
- **Policy setting/mgmt**
- **Basics of DR & backup**
- **DR & backup differences between**
  - **Distributed & data center**



Sometimes the dragon wins…

…and sometimes not

This session will make sure when it comes to ILM & B/U, it's a "not"

What you should know by session end

- **The B/U ILM problem**
- **Why B/U should be ILM aware**
- **How it should work w/ILM solutions**
- **Problems if it is not**
- **How to solve these problems/issues**
- **When & what to implement**
- **Who you can work with**

Session abstract

- **B/U vs. archiving**
- **ILM issues with restore**
- **Limiting restoration to primary data**

Audience response

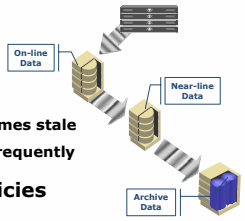
Do you believe ILM eliminates B/U requirement?

1. **Yes**
2. **No**

Common disconnect

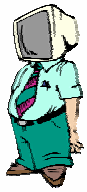
- **ILM matches data value to equivalent storage**
- **B/U is data protection from a disaster**
- **They are not the same**

ILM brief review



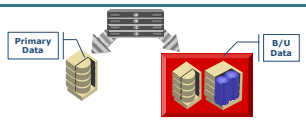
- **ILM premise**
  - **As primary data ages it becomes stale**
  - **It is accessed less and less frequently**
- **ILM automates user policies**
  - **For handling stale data**
  - **By moving aging data from higher to lower value storage**
    - **Eventually moved to offline access**

Why ILM can't be used as B/U



- **Common sense**
  - **Archived data does not include primary live data**
    - **Or even a lot of secondary data**
  - **Restores would be based on old stale data**

B/U brief review



- **B/U premise**
  - **Data must be restored in the event of an inevitable disaster**
- **B/U is either a manual or automatic process**
  - **RPO & RTO granularity are determined by user**
    - **RPO - recovery point objective**
      - **How much data can be lost**
    - **RTO - recovery time objective**
      - **How long will it take to recover the data**

The B/U ILM problem: Restore

- **Most legacy B/U is ILM unaware**
  - **Meaning no interaction between B/U & ILM**
- **The problem**
  - **Primary data that has grown stale has moved**
  - **B/U data still includes the stale data meaning**
    - **Restores include unnecessary data and take longer**
    - **Higher costs for B/U & restore**

Definitions

- **Primary or source data**
  - **Data actively in use on-line**
  - **In-use & critical data**
- **Stale data**
  - **Data no longer accessed**
  - **Still required to be protected**
  - **Nominal need for restore**
  - **Maybe completely deleted**
  - **Or pushed to near-line or archive**
- **Copied data**
  - **On-line data copied to archive**
  - **Used to meet compliance**
    - **Legal or organizational**
- **File generations**
  - **P.I.T. variations of a file**
    - **Provides P.I.T. file restore**
- **Stale generations**
  - **Old generations of static files**
    - **Maybe completely deleted**
    - **Or pushed to near-line or archive**
- **Obsolete generations**
  - **Generation of files replaced by new**
    - **Maybe completely deleted**
    - **Or pushed to archive**
- **Archived B/U**
  - **Archives of stale & deleted B/U**

Definitions

- **Deleted data**
  - **Data deleted at source**
  - **Must be recoverable if**
    - **Accidental or malicious**
  - **When organizational intentional**
    - **Which is the majority of time**
    - **B/U versions can be**
      - **Deleted or archived**
  - **Deleted data is stale data**
    - **Unlikely to be needed again**
- **Archived source data**
  - **Files archived by ILM policies**
    - **By definition stale**
- **Point-in-time (P.I.T.) B/U**
  - **Scheduled complete B/U**
- **Incremental B/U**
  - **Changed blocks/files B/U**
- **Synthetic B/U**
  - **Combines incremental B/U**
    - **Into one complete P.I.T. volume**
- **Incremental forever B/U**
  - **A form of B/U CDP**
  - **Restores from any generation**
  - **No need for synthetic B/U**

What B/U must do to be ILM aware

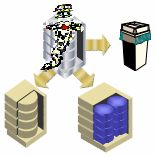
- **Primary/source data deletion detection**
- **B/U Stale generation removal or move to archive**
- **Scheduled or manual P.I.T. copies of B/U sets**
- **Data destruction w/electronic certificate**

Primary/Source data deletion detection

- **Upon detection of primary/source data deletion**
- **Can optionally**
  - **Restore deletions to primary/source**
  - **Completely purge data from B/U**
  - **Push the data to the B/U archive**

B/U stale generation removal

- **As primary and B/U generations become stale**
- **Can optionally**
  - **Completely purge data from B/U**
  - **Push the data to the B/U archive**
- **Stale generations can be defined by**
  - **Number of generations**
  - **Generation age**
  - **Combinations of the two**



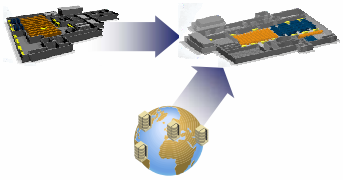
PIT B/U set copies

- **Scheduled or manual at regular intervals**
- **Can include or exclude deleted data per copy**

Data destruction w/electronic certificate

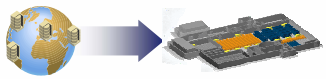
- **Automatic, manual, or scheduled**
  - **Destruction of B/U archived data**
- **Electronic certificates of data destruction**
  - **Proof data was destroyed**

Distributed vs. data center differences



Distributed ILM-aware B/U more difficult

- **Many sites w/software at every location**
  - **Desktops, laptops, servers, databases, etc.**
  - **Bandwidth considerations**

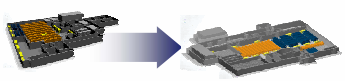


Providers of distributed ILM-aware B/U

- **Solutions available from**
  - **Asigra - Televaulting BLM**
  - **Commvault - QiNetix & Galaxy**
  - **Atempo - Time Navigator**

Data center ILM-aware B/U is simpler

- **Simpler**
  - **Pt-to-pt typically or a handful of sites at most**
  - **Array or virtualization based is tied into the ILM**
    - **Already knows when data is moved**
      - **Backs up (snaps or mirrors) only primary data**
      - **Stale & deleted data pushed to nearline or archive**



Providers of data center ILM aware B/U

- **Solutions available from**
  - **EMC - Symmetrix & Invista**
    - ***Replication for Invista not until Q1 06***
  - **Troika Networks - Accelera w/SVS (StoreAge)**
  - **Hitachi - TagmaStore**
  - **IBM - SVC**

Questions?