IBM Tivoli Storage Manager – TSM Produktneuheiten

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IBM

Agenda

- TSM V6.3 News

- TSM for Virtual Environments News

- TSM FlashCopy Manager News

- Roadmap

Agenda

- TSM V6.3 News
- TSM for Virtual Environments News
- TSM FlashCopy Manager News
- Roadmap

TSM 6.3 Server Content

- TSM for z/OS Media
- Node Replication
- Node Replication support in the Admin Center
- Administrator Center Enhancements
- DB Backup Enhancements
- Reporting Enhancements
- Client Performance Monitoring
- Client Deployment
- Process Value Unit (PVU)
- Tape Optimized Recall Externalized
- VTL Awareness
- GSKIT 8 and AES enhancements
- Install Changes
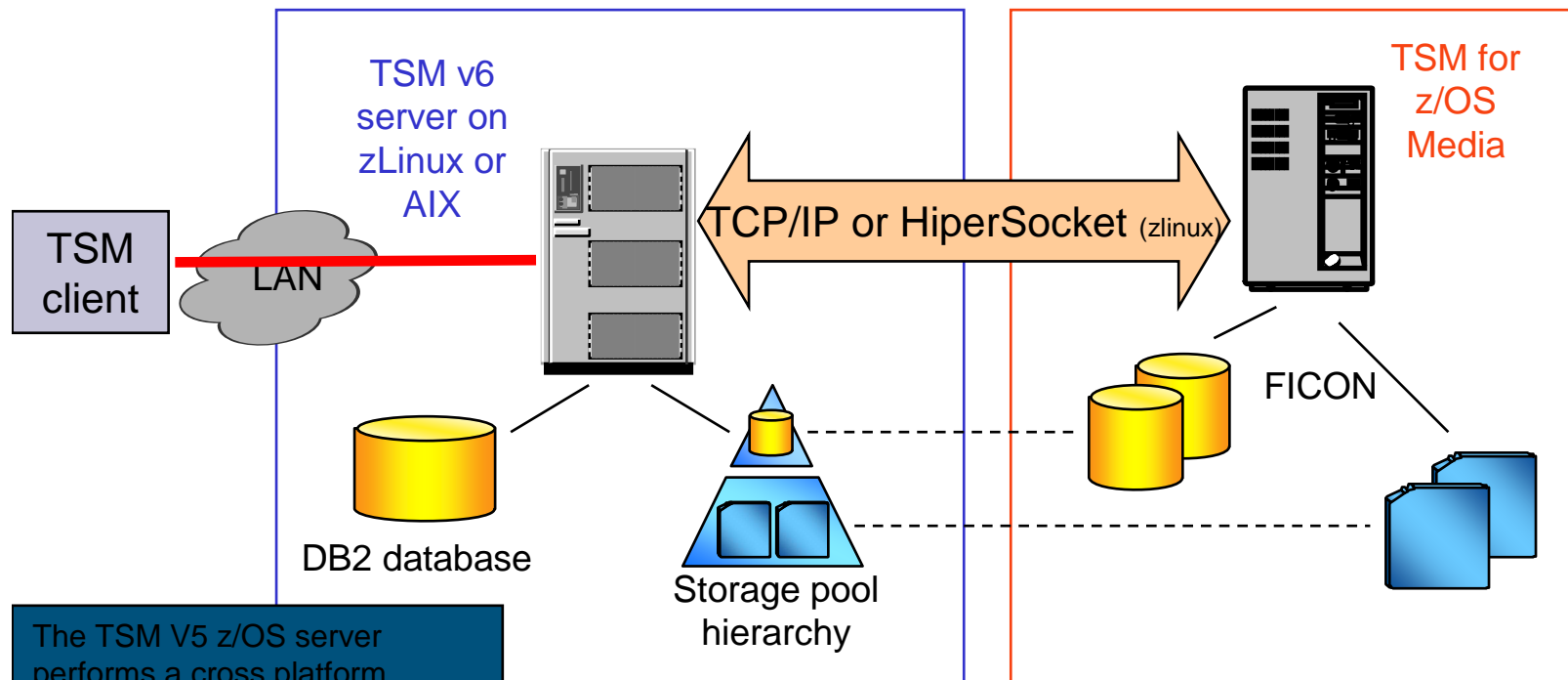- Software Inventory tagging
- Persistent Reserve

TSM 6.3 Client

- Backup-Archive client simplify configuration of client in an MSCS cluster
- Tape Optimized Recall externalize
- Journal Based Backup support on Linux
- Upgrade Install for the TSM Linux Client
- Extend maximum path name support to 4096 bytes for Linux b/a
- Tivoli Integration Agent Management Initiative: Common Agent Package
- 64 bit Linux
- 64 bit Solaris
- Mac
- Integration initiative - Serviceability - Inventory Tagging
- HSM migrate/recall log
- HSM for Windows - Stub moving tool
- UNIX HSM - Multiple Server externalize

TSM for z/OS Media Server

TSM v6 server on zLinux or AIX
- Database functions: nodes, administrators, policy, tracking of data objects in hierarchy
- Communication with clients, Admin Center, other TSM servers and media server
- Storage devices may be attached to TSM server or accessed via media server
- Supports all v6 functions

TSM v6 server on zLinux or AIX

TSM client

LAN

TCP/IP or HiperSocket (zlinux)

TSM for z/OS Media
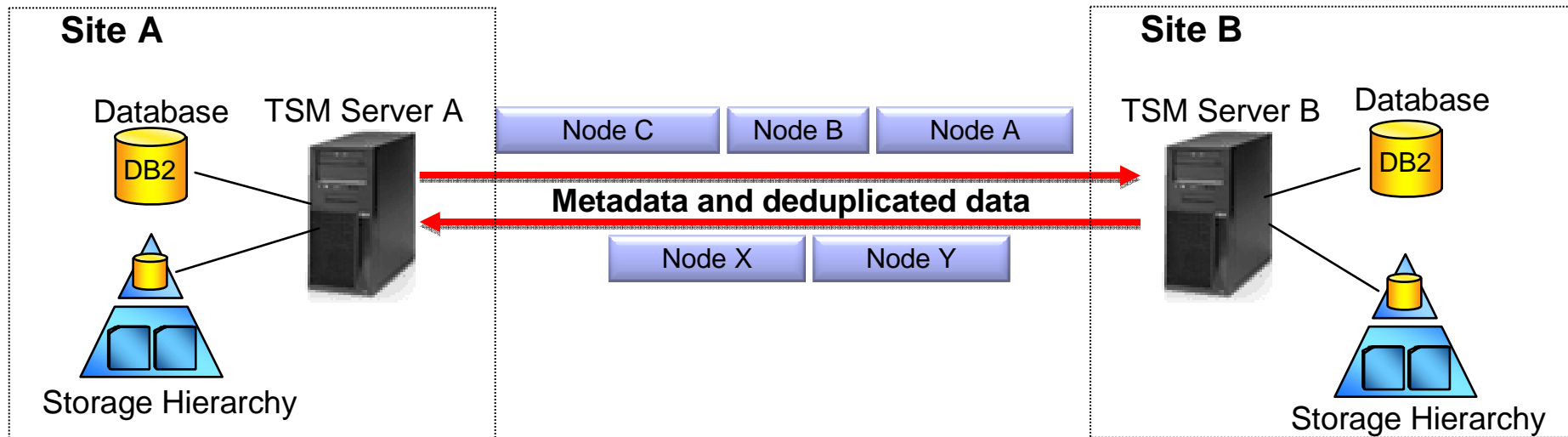
DB2 database

Storage pool hierarchy

FICON

The TSM V5 z/OS server performs a cross platform upgrade which effectively migrates their DB to TSM 6.3 on AIX or zLinux. Then they install a new PID TSM for z/OS Media on z/OS.

TSM for z/OS media server
- Receives/sends data from/to TSM v6 server
- Performs I/O to tape and/or sequential disk
- Supports same storage devices as z/OS server, including non-IBM hardware
- Interacts with z/OS DFSMS and TMS exactly as TSM z/OS server

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Node Replication

Site A

Database   TSM Server A

DB2

Storage Hierarchy

Node C   Node B   Node A

Metadata and deduplicated data

Node X   Node Y

Site B

TSM Server B   Database

DB2

Storage Hierarchy

Provides the ability to incrementally replicate a node's data to a remote target server for disaster recovery purposes

- True incremental replication-
  - Only replicates directories and files that do not exist on target server
- Deletes data on target server that has been deleted on the source server
- Can recover client data directly from hot standby server
- Can use with or without deduplication
- Can have multiple servers replicate to one server

- Remote vaulting without manual tape transfer
- Efficient use of bandwidth through deduplicated replication
- Allows hot standby at remote site

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Node Replication

- TSM server replicates data & metadata for specified nodes to another server
    - Can select which nodes replicate
    - Can select what type of data (backup, archive, HSM, active)
    - Can set priority for nodes, and filespaces
    - Can currently only restore data from target, can not use target as failover backup location (unless use 'remove replnode' command)
- Implemented in TSM 6.3
    - TSM servers must be at 6.3
    - TSM nodes can be at 6.3 or earlier
    - Native TSM solution with no dependency on specific storage device
    - Supports dissimilar hw & configuration at primary & remote sites
- Server to Server communications
    - Servers must be able to communicate via IP
    - Need server to server options -hladdress, lladdres, servername, serverpassword

Node Replication

Source TSM
Server

Target
TSM
Server

1 Enable source server to target server communication

7 DR: restore node data

2 Set target server as default target for replication

3 Enable nodes to replicate and modify default and
filespace replication rules if needed

4 Set storage hierarchy , domain policies

5 At proper time, preview and initiate replication for
desired nodes and data (REPLICATE NODE)

6 TSM administrator
views replication
results

Admin Center
& TCR

Initial configuration

Other

Node Replication

- Deduplication
  - If source has dedupe enabled but target does not
    - Data is reconstructed before being sent
  - If target has dedupe enabled but source does not
    - Entire file sent then dedup on the target will need to identify the chunks and reclamation will be necessary to free up that duplicate space
  - If both source and target have dedup enabled
    - Only the chunks of data that are not stored already in the destination pool are transferred
- Expiration
  - Files bound to same mgmt class, if exists, on target server, otherwise to target server's default mgmtclass
  - Source server manages file expiration and deletion for the replicated files on the target server
- Flexible Implementation
  - Many-to-1 transfer to target server (can only have one target server)
  - Can have server A and server B protect each other
  - If import/export data exists, can utilize forcesync
  - Node can NOT previously be backed up/ archived/ hsm'd on target server
- Admin Console or Command line configuration / monitoring
- Scheduled or manual node replication
  - Single process is started for replication
  - High priority data is replicated before data with normal priority
  - Only one replicate node process at a time

Faster TSM Internal Database Backup and Restore

- Parallel streams for backup/restore processing give improved throughput

- Reduced time for database backup/restore

- Increased scalability of TSM server without expanding db backup window

- Will result in possibly more partially filled tape volumes
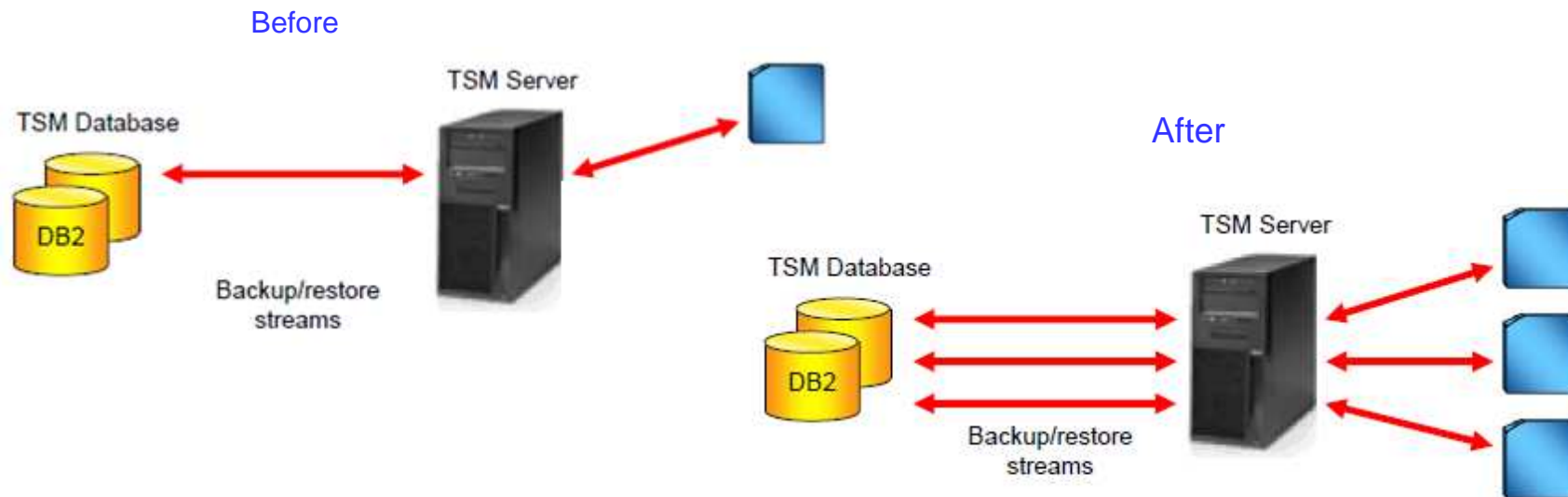
TSM Reporting using Cognos

- Easier Installation – install, configure and use reporting and monitoring within 2 hours

- Automated post-installation configuration

- Additional 'out of the box' reports

- Integrated Cognos reporting engine providing better creation of 'custom reports' capabilities
    - Create custom report in 30 mins or less

- Ability to build custom data collection agents with the newest IBM Tivoli Monitoring end-user license

- More TSM data-collection agent performance features

- TSM activity log custom-data collection in the TSM data-collection agent

- Ability to email reports

An aggregated view of reporting and monitoring for the entire TSM environment

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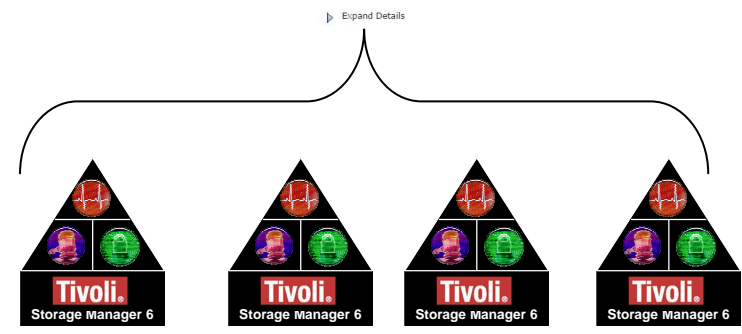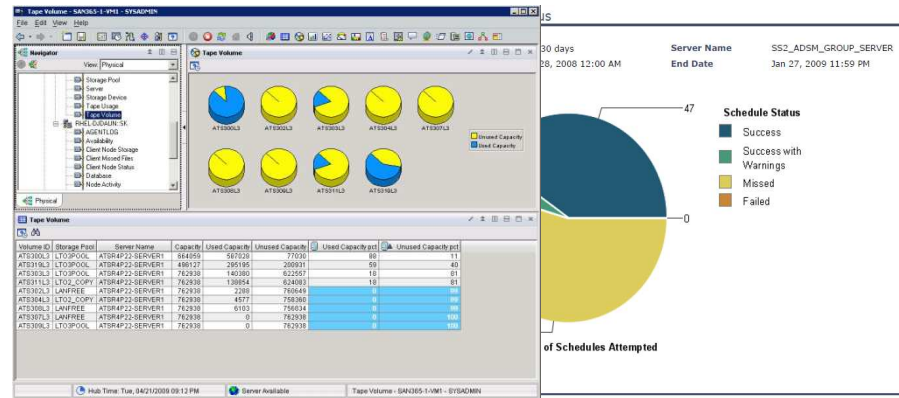
TSM Reporting – Predefined Reports

Client reports (6.1)

- Client job status
- Client backup currency
- Storage capacity protected
- Backup details
- Top 10 backups
- Backup missed files
- Backup history
- Restore details
- Top 10 restores
- Restore history
- Archive details
- Top 10 archives
- Archive history
- Retrieve details
- Top 10 retrieves
- Retrieve history

Aggregated Client reports (6.3)
- Client Activity Details
- Client Activity History
- Client Missed Files
- Client Storage Summary
- Client Top Activity
- Client Schedule Status
- Client Activity Details
- Client Backup Currency
- Node Replication Details (suggested)

Server reports

- Server job status
- Server throughput
- Server resource usage
- Database details
- Disk usage
- Tape usage
- Other storage usage
- Tape volume usage analysis
- Tape capacity analysis
- Tape device errors
- Device usage history
- Server machine utilization
- Activity Log Details
- Node Replication Details
- Node Replication Summary
- PVU

Aggregated Server reports (6.3)
- Server Resources Used
- Tape Volume Capacity Analysis
- Server Throughput
- Server Database Details
- PVU Details (suggested)
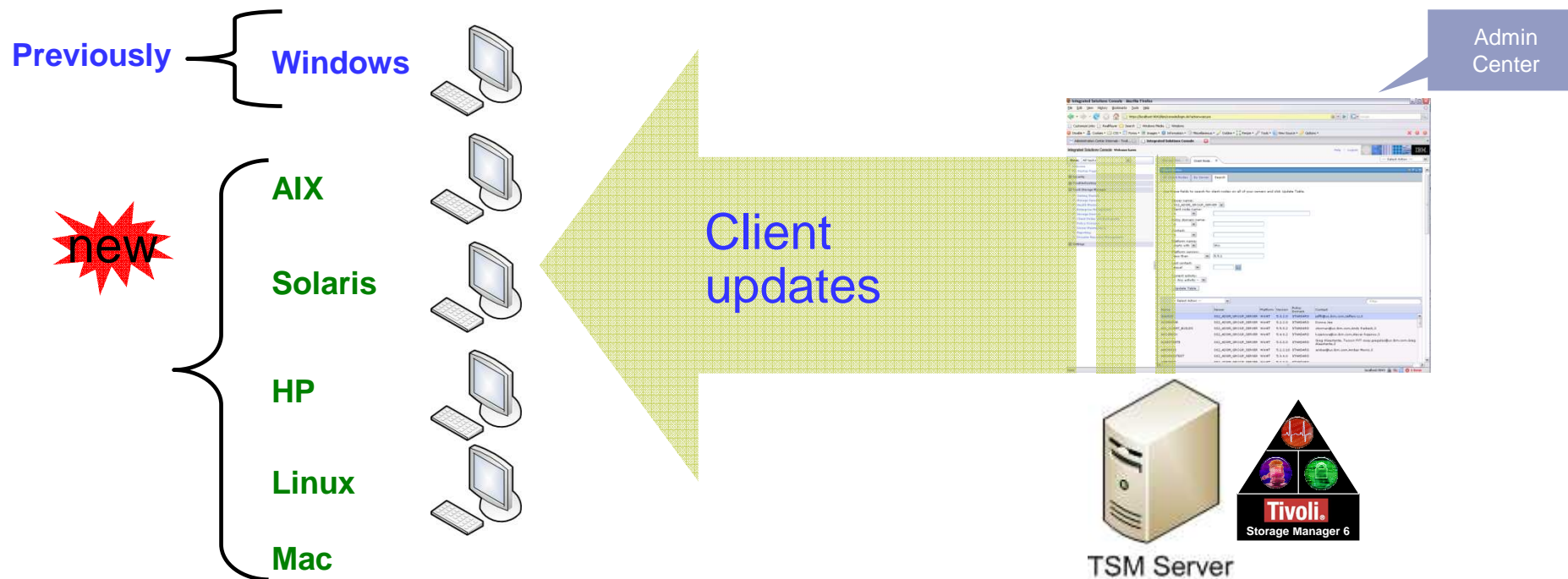
Monitoring 'TSM for' Performance

- TSM API Performance Monitoring Functions
- API Performance analysis built into the TSM Admin Center
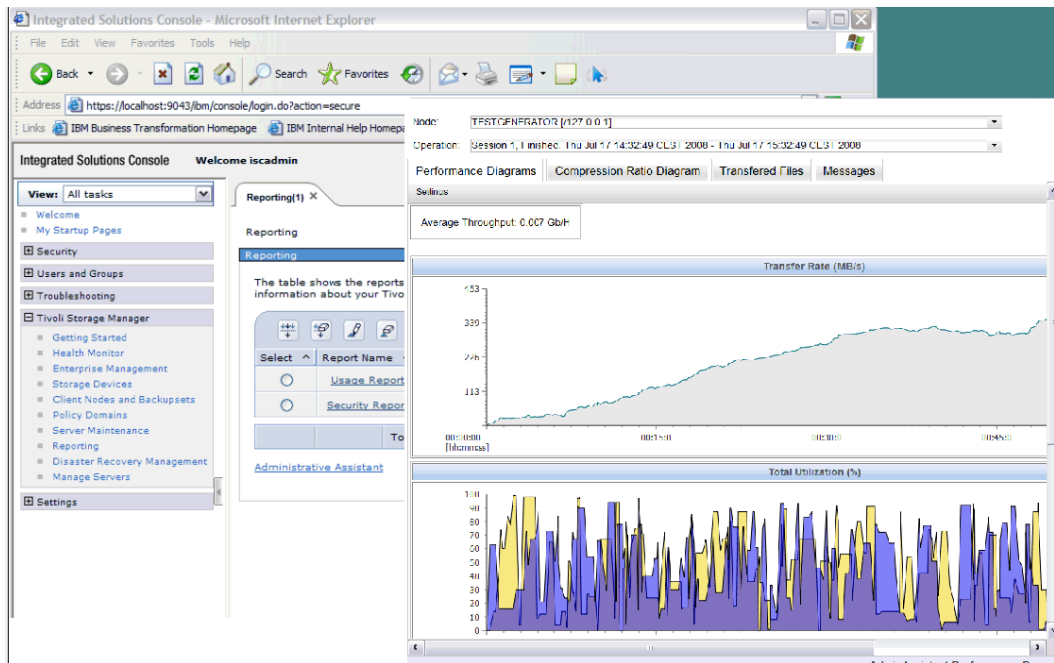
- Bottleneck analysis:
  - Disk I/O
  - Network / Tape

- Simulated backup and restore
  - Helps with tuning TSM for products for optimal throughput

Deployment of Backup Archive Client Updates

- **Deploy client maintenance updates to non-Windows platforms**
  - Previsouly only Windows
  - Now AIX, Solaris, HP-UX, Linux, Macintosh & Windows

- **Allow client to upgrade to 5.5, 6.1, 6.2 or higher versions**
  - Previously only allowed to update Backup-Archive clients to version 6.2
  - Now clients can be updated to lower (supported) versions e.g., 5.5 or 6.1, or 6.2 or higher

Previously — **Windows**

new

AIX

Solaris

HP

Linux

Mac

Client updates

Admin Center

TSM Server

Tivoli. Storage Manager 6

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PVU Estimation Reporting

```
This is an estimate of the physical number of client devices and the
physical value unit (PVU) totals for physical server devices based on
logical Tivoli Storage Manager node definitions.

Product                                   Number     Number      PVU
                                        of Client  of Server  of Server
                                          Devices    Devices    Devices

----------------------------------------  ---------  ---------  ---------
Tivoli Storage Manager Extended Edition     1,000        905     90,500
Tivoli Storage Manager for Storage Area
 Networks                                      50         10      1,000
Tivoli Storage Manager for USS Client         N/A          0          0
Tivoli Storage Manager for Space Manage-
 ment                                           0          0          0
Tiovli Storage Manager for Mail               N/A         25      5,000
Tivoli Storage Manager for Databases          N/A      1,025     20,500
Tivoli Storage Manager for Enterprise
 Resource Planning                            N/A         25      5,000
Tivoli Storage Manager for Copy Services      N/A          0          0
Tivoli Storage Mangaer for Advanced
 Copy Services                                N/A          0          0
Tivoli Storage Manager for System Backup
 and Recovery                                 N/A          0          0


Other Node Classifications                Number
----------------------------------------  ---------
Nodes prior to Version 6.1 with no PVU
 information available at this time            10
Nodes classified by administrator as
 "other-device"                                8
Nodes defined as a non-licensed API
 application                                    6
```

- Inf server

- Inf

- Us

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PVU Estimation Reporting and Drill-Down Capabilities

Estimated Processor Value Units (PVU) reporting for Backup-Archive client and API applications

Drill down link provides additional details

Customer Benefits

- Significant time savings calculating PVU requirements

- TSM clients will scan system and send processor data to TSM Server, TSM server will store processor data and calculate PVU value

- Ability to report on "client-device" and "server-device" at a node level, Allow TSM administrator to change classification on a per-node basis

  - TSM agents, storage agent, and server

- Full-Capacity licensing only

  - Virtualization Capacity (Sub-Capacity) customers are still required to use the IBM License Metric Tool (ILMT) to create, verify, adjust, sign and save reports

  - Estimator does not certify license compliance

Virtual Tape Libraries

Historically VTL defined as SCSI TSM libraries

- SCSI tape mount operations degraded VTL performance
  - VTL libraries with 256+ drives with heavy activity reported mount times of 5-7 minutes
  - Resulted in max number of drives limited to 80-120

New VTL library type drastically improves performance

- Existing SCSI libraries can be updated to VTL library type
  - UPDATE LIBRARY <libname> LIBTYPE=VTL
- Better assumptions made & unnecessary SCSI validations skipped
- 300-500 maximum drives
  - Depending on OS, 256-1024 drives may run into OS limitations
- Cannot have mixed media: drives with different device types or device generations within the same library (e.g. LTO2 and LTO3)
- Requires online path defined for servers & storage agents to all drives in the library
  - If paths are missing or offline, mount performance degrade to SCSI library type performance levels

TSM 6.3 "PERFORM LIBACTION"

- Defines and delete TSM libraries containing large number of drives
- Valid for library type VTL and SCSI

Microsoft Windows Cluster Configuration Wizard

- Previously: must manually configure TSM to protect data on cluster disks

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  - TS   M B/A
    clie

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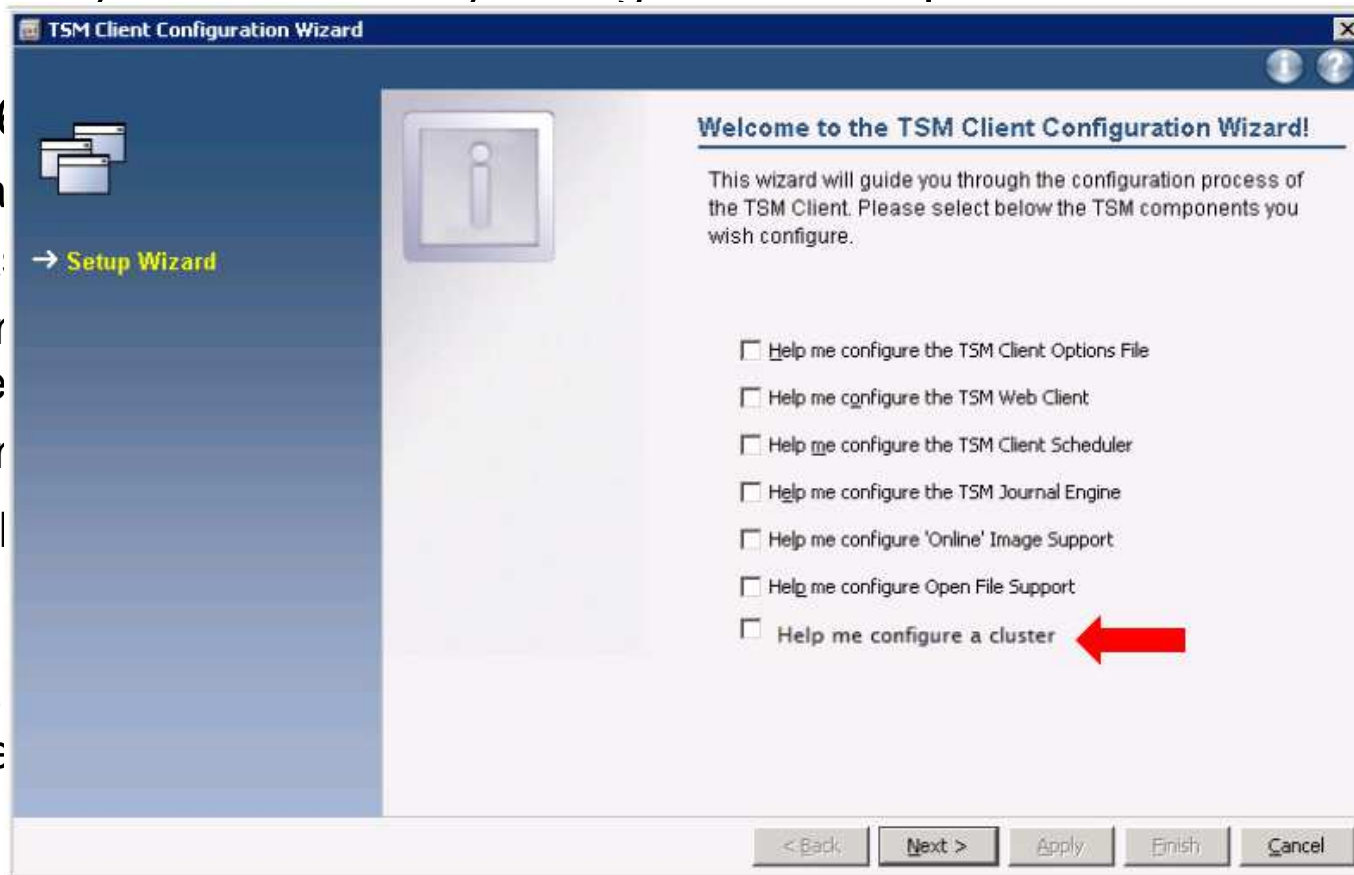
Journal Based Backup on Linux

- JBB on Linux using FilePath technology (same as on AIX since TSM 5.3.2.)
  - Support Linux local file systems: EXT2/3/4, XFS, ReiserFS, JFS, VxFS, NSS
  - Not supporting GPFS for journal based backup
- Linux vs AIX*
  - Similarities
    - Journal daemon code
    - Configuration options
  - Differences
    - Kernel extension code
    - Daemon startup script
  - Install & Configure
    - Two RPM packages
      - TIVsm-filepath-<vendor>.<arch>.rpm
      - TIVsm-JBB.<arch>.rpm
  - Configuration
    - Same as AIX (tsmjbbd.ini)
  - Runtime
    - Kernel module (filepath) is loaded automatically
    - Daemon startup script is provided

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vStorage API

Utilize VMware vStorage APIs for Data Protection for image-level backup and recovery

File level backup through Backup Server, File level recovery through TSM B/A client

Full VM level backup through Backup Server

 Full VM restore through Backup Server

vStorage API support

File-level backups

Full VM backups

Machine x

Operating System

Application

Machine y

Operating System

Application

Machine z

Operating System

Application

vSphere 4.x

Physical Hardware

CPU Memory Network Internal Disk External Disk

vStorage API

TSM B/A client

Running on Backup Server*

vStorage APIs provides the capability to read **directly** from the ESX storage

Tivoli Storage Manager

Storage Pool

* Backup Server can be a physical or virtual machine

B/A Client: Off-host Backup Deployment

The vStorage Backup server can be a physical server

- **Offloads backup processing from ESX host**
- **High performance configuration that can utilize SAN data path**
- **Data path configurations**
    - **VADP: LAN or SAN**
    - **TSM API: LAN or SAN**

VMware ESX / ESXi Server

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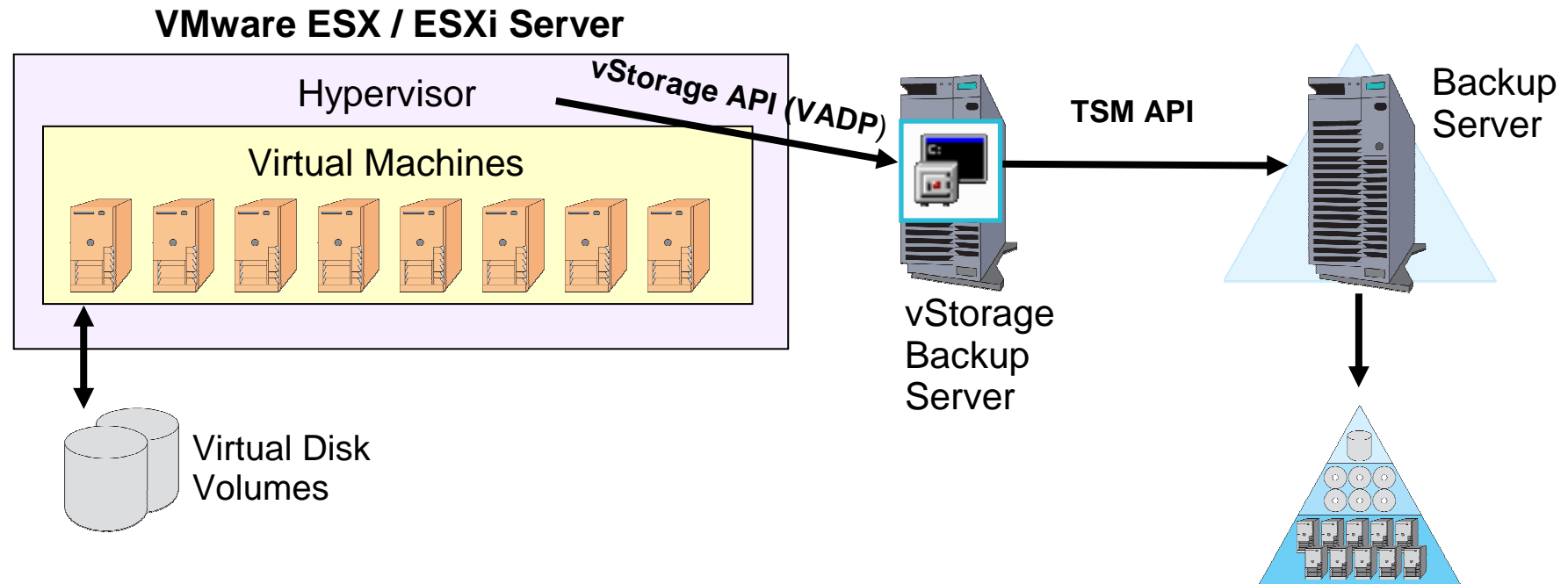
B/A Client: In-Guest Backup Deployment

The vStorage backup server can be a virtual machine

- **No additional HW needed**
- **Use ESX host resources for backup**
- **Data path configurations**
    - **VADP: LAN or Hot Add**
    - **TSM API: LAN**

VMware ESX / ESXi Server

Hypervisor

VADP

Virtual Machines

TSM API

Backup Server

Virtual Disk Volumes
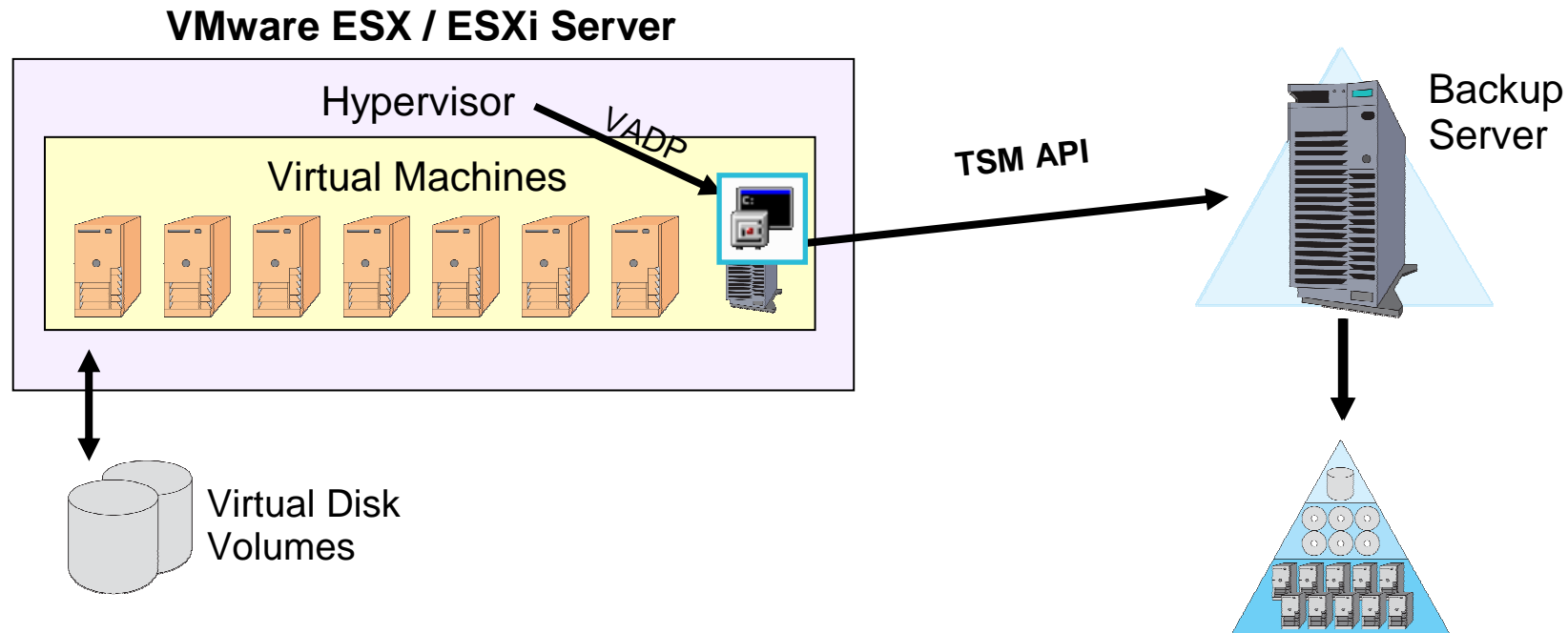
Example TSM Node Definitions

VMware Datacenter (DC1) = ESX1 and ESX2

VM1 VM2 VM3

Guest Machines

Host Machine ESX1

VMFS DataStore

vStorage Backup Server

TSM Server

Disk storage pool

DB2 Database

VMware Target Node Name = DC1

Filespaces for DC1

VM1

VM2

VM3

VM4

VM5

VM6

dsm/dsmc
node=DM1
asnode=DC1
vmchost=ESX1

dsm/dsmc
node=DM2
asnode=DC1
vmchost=ESX2

B/A client instances running on vStorage Backup Server

Organization of VM's in TSM DB

VM4 VM5 VM6

Guest Machines

Host Machine ESX2

VMFS DataStore

Recommendation

- Configure 1 TSM VMware target node to map to 1 VMware Data Center
- For additional throughput, consider using more than one dsmc instance on a single vStorage Backup server.
- Use a separate dsmc instance to process each VMware ESX server or VMware folder

Tape Configuration

MBLK0000

MBLK0001

MBLK0002

Disk 0

MBLKnnnn

JOB1 is full backup of VMDK

JOB2 is incremental (only blocks in MBLK0000 and MBLK0003 changed)

TSM server

Machine x — Operating System — Application
Machine y — Operating System — Application
Machine z — Operating System — Application

vSphere 4.x

Physical Hardware

CPU Memory Network Internal Disk External Disk

B/A Client

DB2 Database

Disk storage pool for meta-data

| JOB1 MBLK0000.CTL | → | JOB1 MBLKnnnn.CTL | JOB1 BITMAP.DAT |

| JOB2 MBLK0000.CTL | JOB2 MBLK0003.CTL | JOB2 BITMAP.DAT |

VMCTLMC

Tape Storage Pool for data

| …\vmname.OVF | JOB1. MBLK0000.DAT | → | JOB1 MBLKnnnn.DAT |

| …\vmname.OVF | JOB2 MBLK0000.DAT | JOB2 MBLK0003.DAT |

VMMC

Policy based on management class specification

- Client option (VMMC) or default MC
- Placement: copy group DESTINATION
- Retention: copy group VEREXISTS & RETAINEXTRA

Best Practice Recommendation when using disk / tape - Set the MIGDELAY (e.g. 10 days) parameter for the disk storage pool to enable the majority of mount requests to be satisfied with snapshots that are on disk.

Restore - FULL/INCR - VSTOR/VCB - Display name

VSTOR - FULL/INCR – display name

VCB - FULL – hostname

Recovery Agent: File Recovery

Partition Mount

1. User launches Windows or Linux Data Protection for VMware Restore Agent to mount partition

a. Enters TSM node name for authentication with TSM server

b. Select VM, recovery point and disk

c. Select partition mount / partition

2. Volume is presented to local system (if off-host mount, make volume available to VM guest)

3. User copies files (files restored from TSM storage pool)

TSM Server

Agent Deployment

Linux and Windows install packages

1. In-guest for VM user initiated restore

2. Off-host centralized file restore (windows package typically on same machine as B/A client)

Hypervisor

Virtual Machines

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Supported vSphere/ESX Datastores

All types of Datastores are supported (no manual mounting required)

- SAN via Fiber

- SAN via iSCSI

- LAN via NFS

- Local/HotAdd

New TSM for VE Plug-In

- Must run on a server

- Server can be a Virtual or Physical Machine

- Can run on vSphere vCenter Server

- Multiple Plugins can run for the same vSphere Environment

- Multiple Plugins cannot run on the same server

- Plugin is accessible from anywhere

- Is used from within vSphere Client

- Can run on Windows or Linux

- Supports also FCM

TSM for VE Plug-In in vSphere Client

Plugin Scheduler

Virtual versus Physical Proxy (Backup Server)

- TSM for VE supports Virtual and/or Physical Proxies

- LAN FREE from Proxy to the TSM Server requires Physical Proxy

- Virtual Proxies are easier to manage and can be deployed with a single click

- LAN free offers no performance advantages assuming 10GB Ethernet

- Performance tests with Virtual Proxies performed backup speeds of up to 300 GB/hour using 10GB Ethernet

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IBM Tivoli FlashCopy Manager 3.1 Solution Overview

FlashCopy Manager

Application System

Application Data

Local Snapshot Versions

Snapshot Backup

Snapshot Restore

ORACLE
DB2
SAP
Microsoft SQL Server
Microsoft Exchange Server
Custom Apps
File Systems

For IBM Storage

✓SVC
✓V7000
✓XIV
✓DS8000
✓DS 3/4/5*

Tivoli
Storage Manager 6

With Optional TSM Backup Integration

✓ Online, near instant snapshot backups with minimal performance impact

✓ High performance, near instant restore capability

✓ Integrated with IBM Storage Hardware

✓ Simplified deployment

✓ Database Cloning

*VSS Integration

At a Glance: Enhancements for FCM 3.1

- **File System & Custom Application support on Windows**
  - Now on Windows: MS SQL Server, MS Exchange, File System and Custom Application
- **MMC Integration for Exchange & SQL GUIs**
  - New Interactive Exchange Individual Mai/Mailbox (IMR) GUI
  - Drag and Drop emails (based of former FastBack technology)
- **Support for VMware as new Application**
  - Based on FCM for Unix
  - Now on Unix: DB2, Oracle, SAP, Custom Application and VMware
  - Proxy based backup of VMs in vCenter
  - IBM TSM for Virtual Environment Plug-in contains functions for FCM
- **Supports DB2, Oracle, SAP and custom applications on HP-UX on IA 64 bit**
- **Misc. other enhancements**
  - Scalability & performance improvements in Windows GUIs
  - Exploit SQL Server compression
  - Improved status reporting and final statistics for backup and restore operations
  - Restore VSS backups of Exchange and SQL to flat files

FCM – File System and Custom Application for Windows

- Create VSS persistent snapshot backups

TSM Server (optional)   Application Server   Application Data   Local Snapshot Versions

VSS Snapshot Backup to destination LOCAL
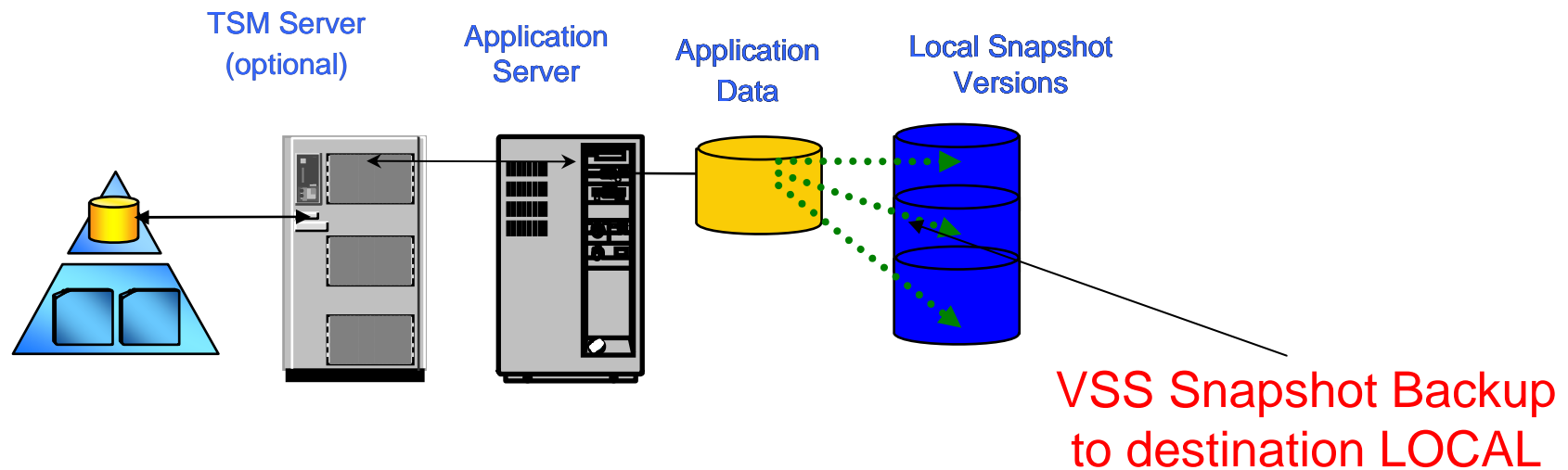
1. User stops or suspends application. This can be automated using the TSM PRESNAPSHOT option.

2. User executes FlashCopy Manager command to perform a snapshot of volumes containing the application files.

3. User restarts or resumes application. This can be automated using the TSM POSTSNAPSHOT option.

FCM – File System and Custom Application for Windows

- Perform a VSS Instant Restore or VSS Fast Restore from the VSS persistent snapshot backup

TSM Server (optional) Application Server Application Data Local Snapshot Versions

VSS Instant Restore
or
VSS Fast Restore
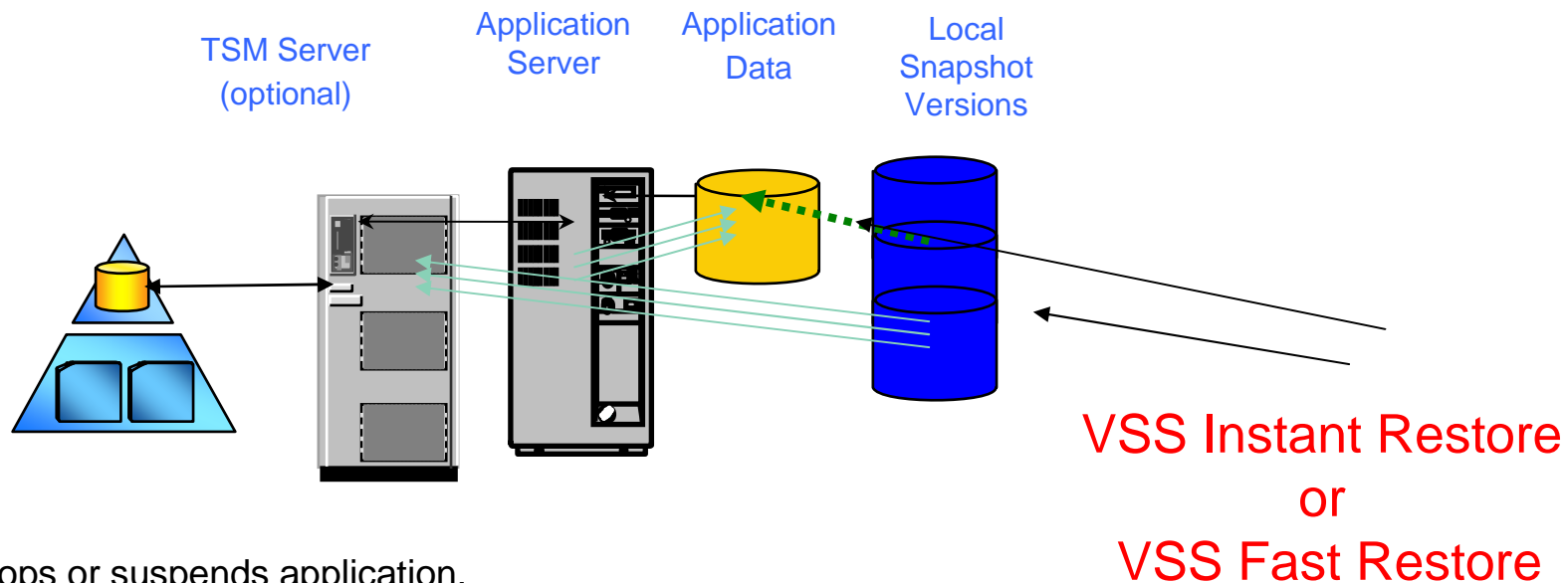
1. User stops or suspends application.

2. User executes FlashCopy Manager command to perform a VSS Instant Restore or VSS Fast Restore of the volumes from the backup.

3. If necessary, user performs application-specific actions in order to get the application files in desired state.

4. User restarts or resumes application.

FCM – File System and Custom Application for Windows

- Expose VSS persistent snapshot backups to restore individual files as needed
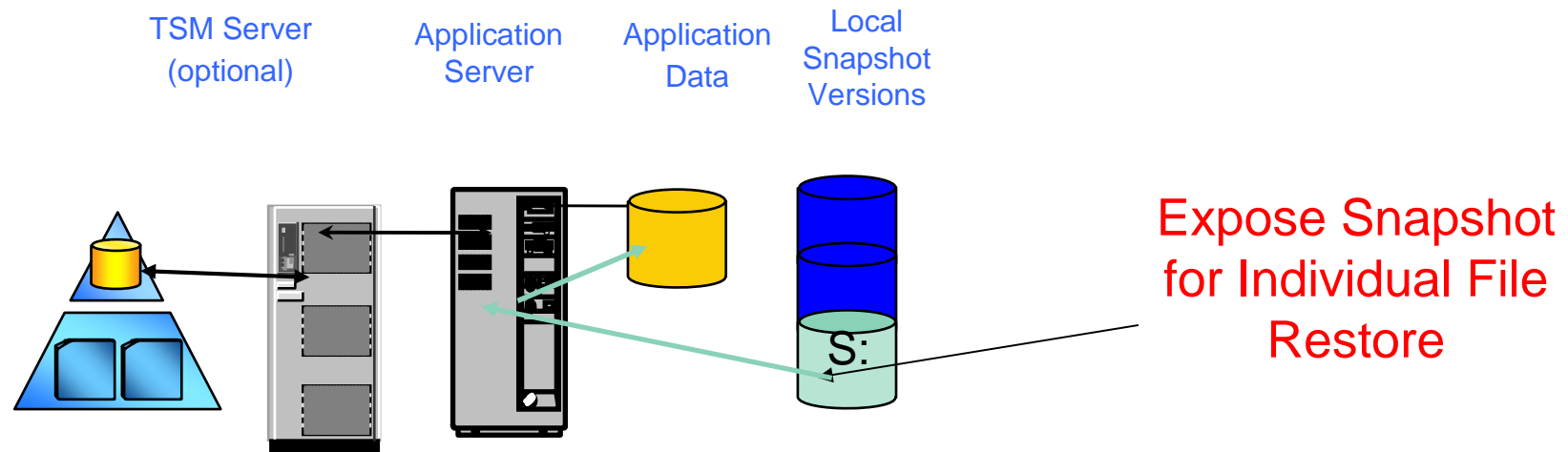
TSM Server (optional) Application Server Application Data Local Snapshot Versions

S:

Expose Snapshot for Individual File Restore

1. User temporarily exposes a specific VSS persistent snapshot backup as a drive or mount point.

2. User stops or suspends application, as necessary.

3. User executes Windows commands to copy desired files from VSS persistent snapshot backup to location of choice.

4. If necessary, user performs application-type actions in order to get the application files in desired state.

5. User restarts or resumes application, as necessary.

6. User unexposes the drive or mount point.

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FCM – File System and Custom Application for Windows

- Expose VSS persistent snapshot backups to optionally perform a file-level backup to the TSM Server
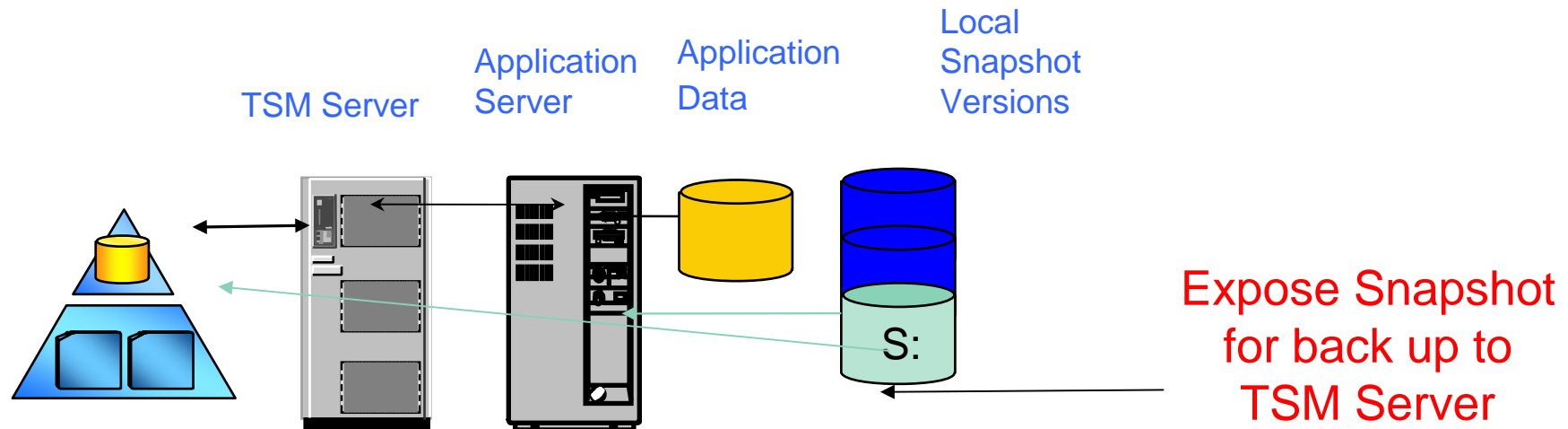
TSM Server   Application Server   Application Data   Local Snapshot Versions

S:

Expose Snapshot for back up to TSM Server

1. User temporarily exposes a specific VSS persistent snapshot backup as a drive or mount point.

2. User executes a TSM Windows Backup/Archive Client command to perform a file-level backup to the TSM Server.

3. User unexposes the drive or mount point.

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FCM Windows User Experience: MMC Interface

- Dashboard
  - Task C
  - Type o
  - Histori
  - Amoun
- Configurati
  - Local (
  - TSM c
  - Sched
- Command
  - DP Co
  - Launc
  - Seaml
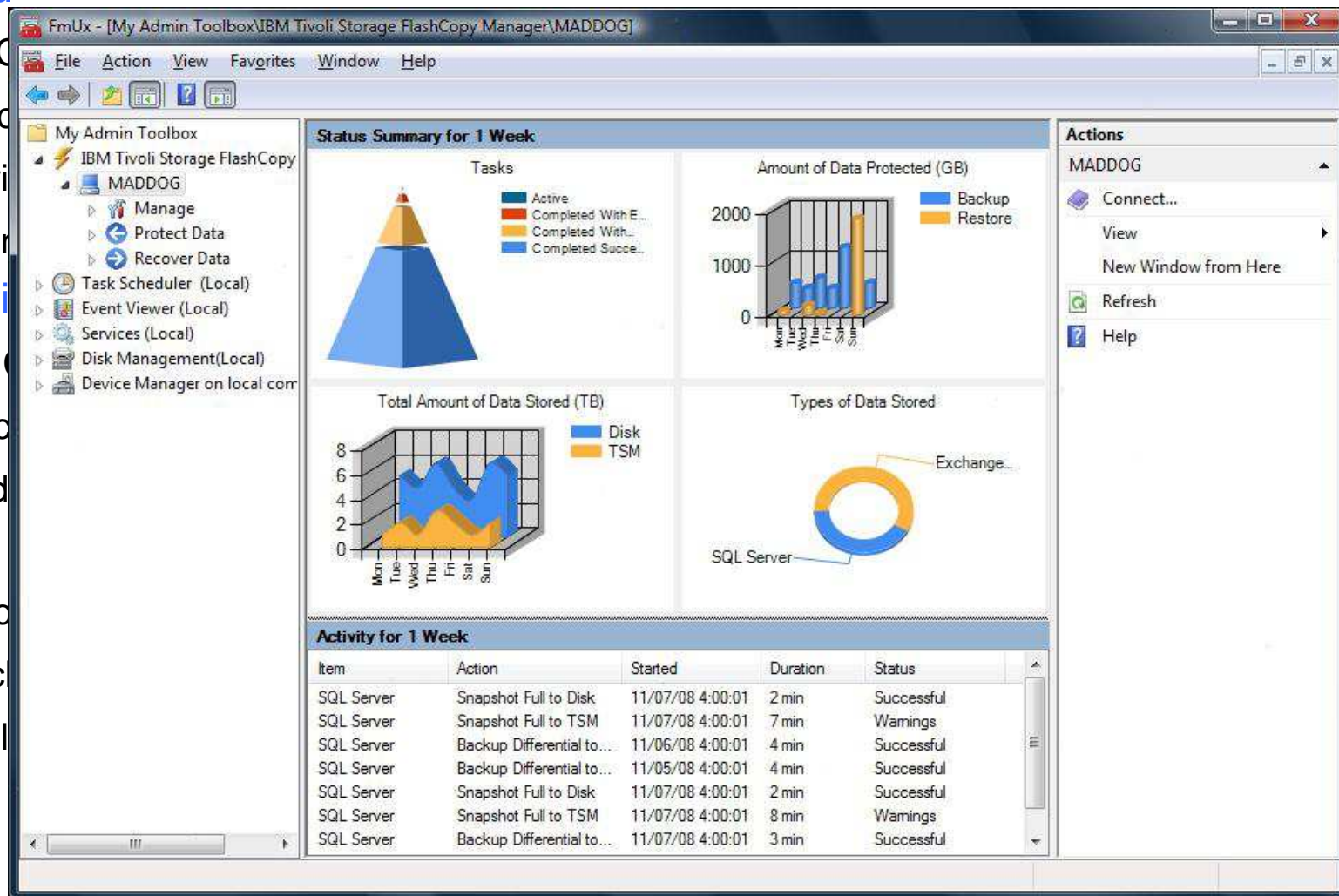
Improved User Experience: New Interface

Unified MMC Snap-in

Tivoli Storage FlashCopy Manager, TSM for Mail (Exchange)
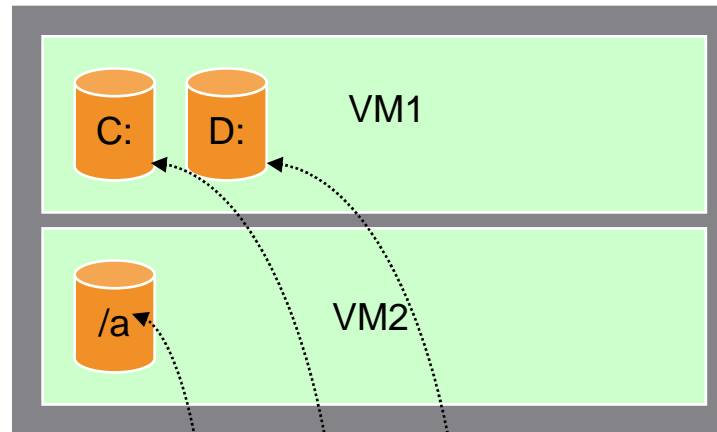
- Navigation via an Explorer/Outlook style interface

- "Drag and Drop" mailbox items from source to destination

  - Original Exchange Mailbox

  - Alternate Exchange Mailbox

  - Personal Folders (PST) File

- Provide Filter and Searching for mailbox items

  - Date Ranges - Created, Received, Modified

  - Text - Subject, Sender, Recipient, Body

  - Message Size

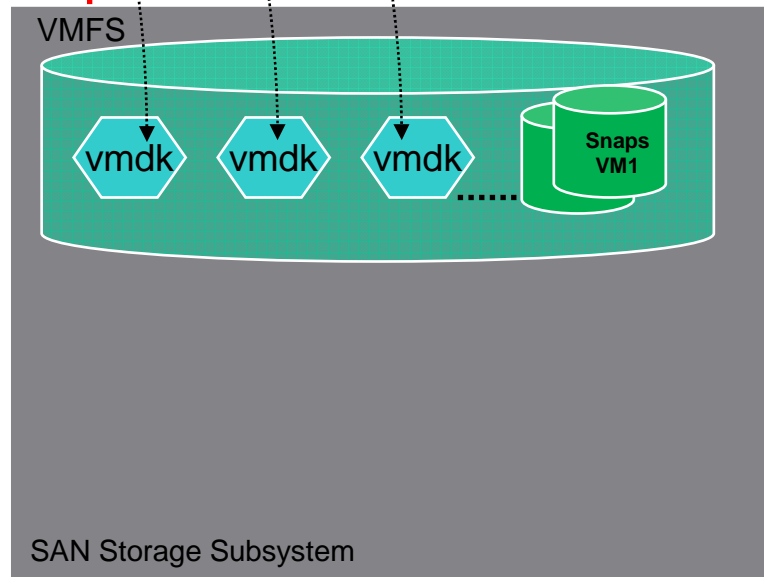**Interactive Individual Mailbox Restore (IMR)**

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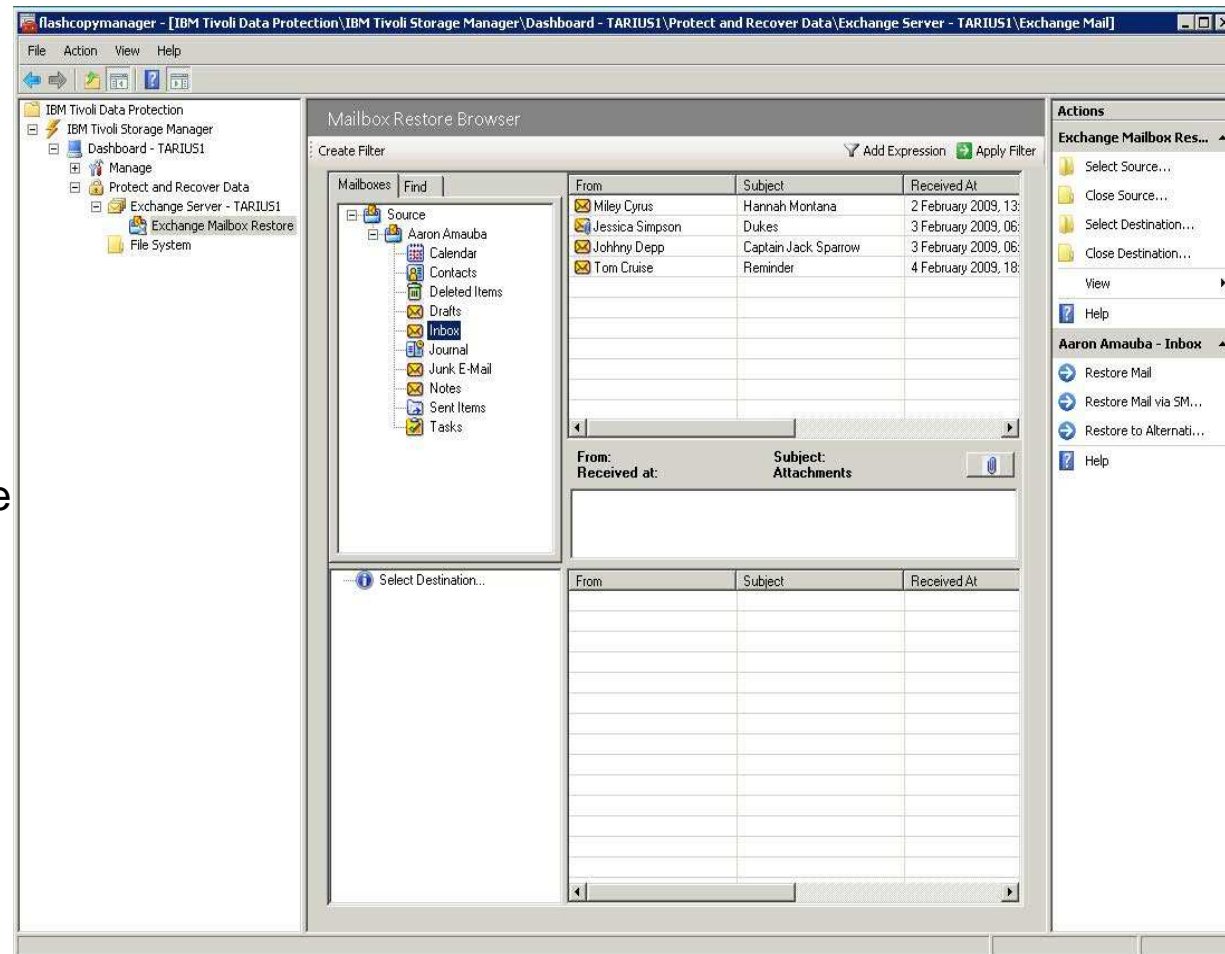
FlashCopy Manager 3.1 for VMware – Features at a glance

- Supports ESX / vSphere 4.1 and 5.0
- Off-host (proxy based) hardware snapshot backups with VMFS datastore granularity
- Optional offloaded backup to TSM with VM granularity
- Supporting block level incremental backups with VMware Changed Block Tracking
- Restore of individual VMs
    - a) from a Hardware snapshot of a VMFS datastore
    - b) from oflloaded TSM backup
  to original or alternative VMFS datastore under original name or new one
- Restore of individual files
    - Mount of a backup to a guest VM for individual drive / files access
- Restore of individual virtual disk (vmdk files)
    - Volume Restore using Recovery Agent
- User interface
    - vCenter client integration (plug-in web GUI)
    - Command Line Interface (on proxy node)
- Reporting and Monitoring
    - summary view with drill down for details
    - backup & restore stats
    - Managed capacity report
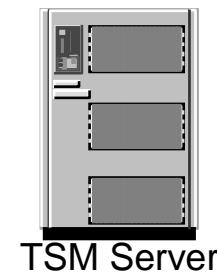- Policy based management of local snapshot backups

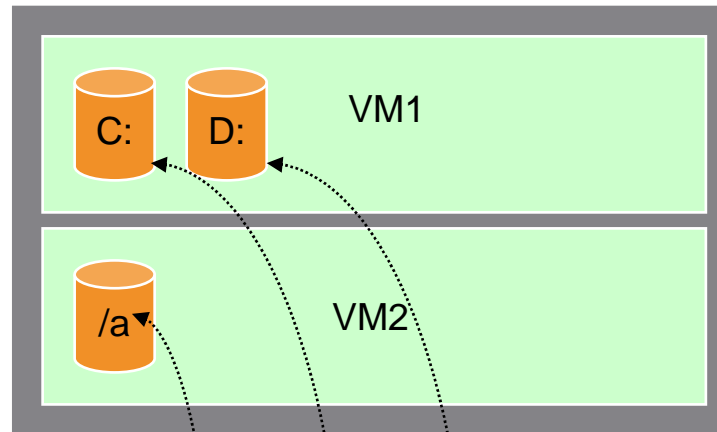# Full-VM Backup with FlashCopy Manager leveraging vStorage API

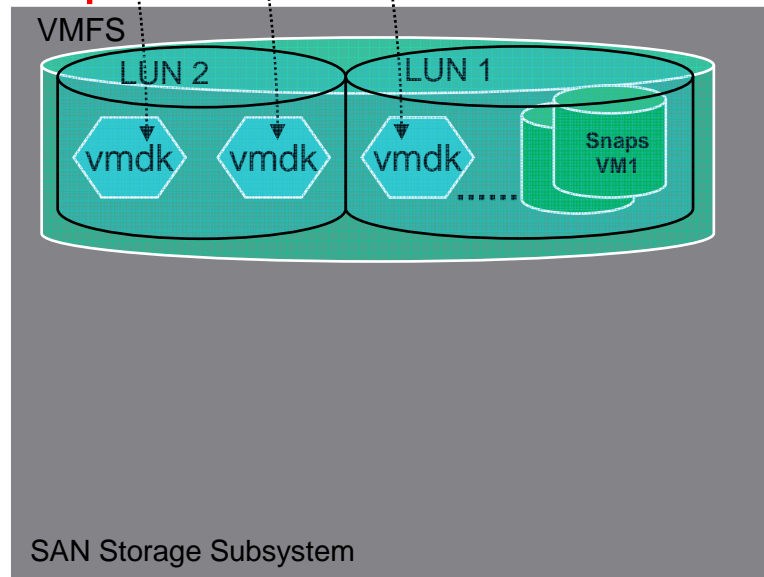1. FCM initiates a software snapshot of virtual guest volumes (vSphere API)

Linux Proxy Server

(physical or virtual machine)

FlashCopy Manager

VM1

C: D:

VM2

/a

SAN   ESX\ESXi Server

VMFS

vmdk   vmdk   vmdk   **Snaps VM1**

SAN Storage Subsystem

TSM Server

Full-VM Backup with FlashCopy Manager leveraging vStorage API

VM1
C: D:

VM2
/a

SAN | ESX\ESXi Server

VMFS
LUN 2   LUN 1
vmdk   vmdk   vmdk   ......   Snaps VM1

SAN Storage Subsystem

1. FCM initiates a software snapshot of virtual guest volumes (vSphere API)

2. FCMdetermines which LUN(s) are associated with virtual machines

Linux Proxy Server
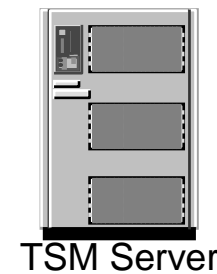
(physical or virtual machine)

FlashCopy Manager
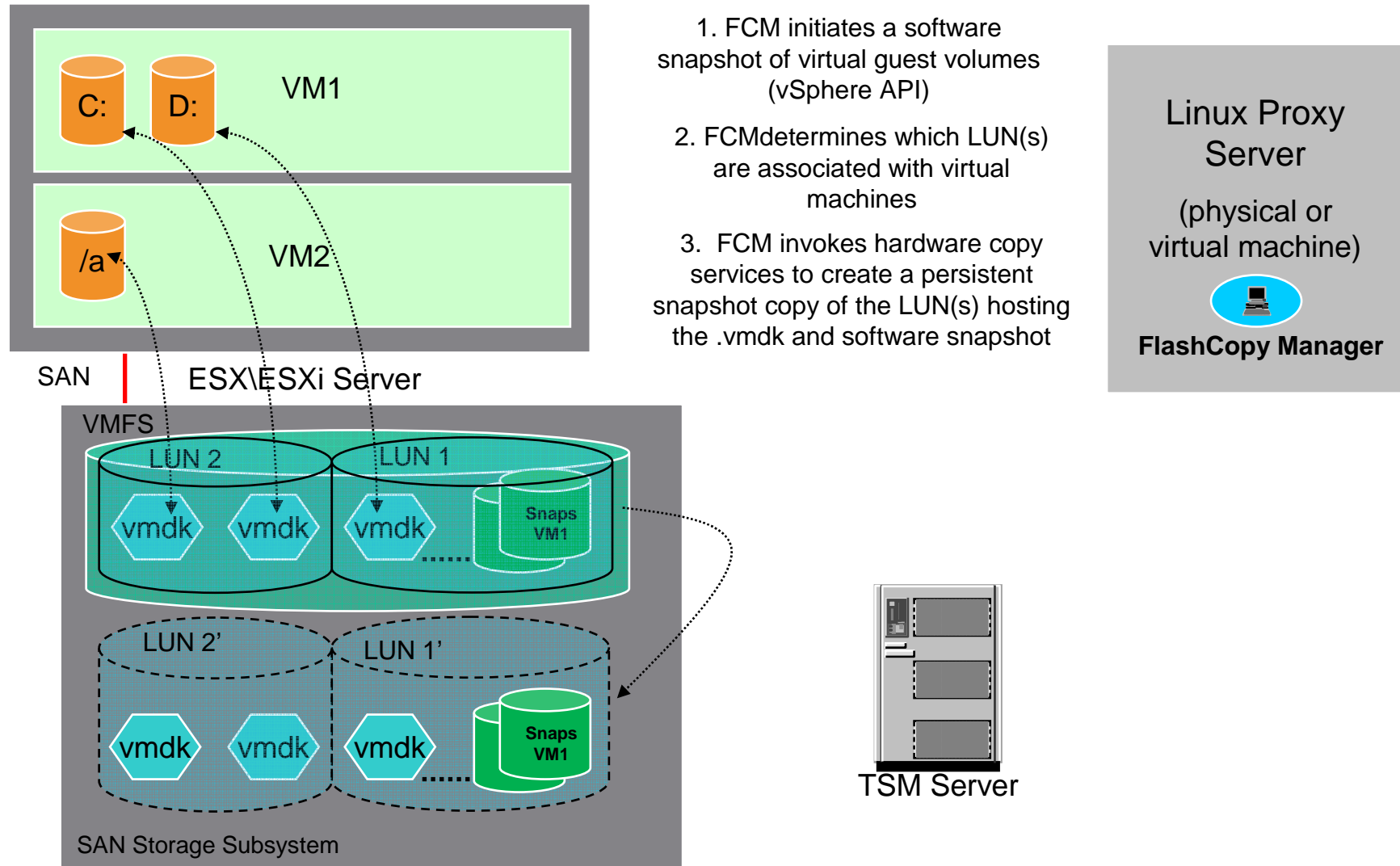
TSM Server

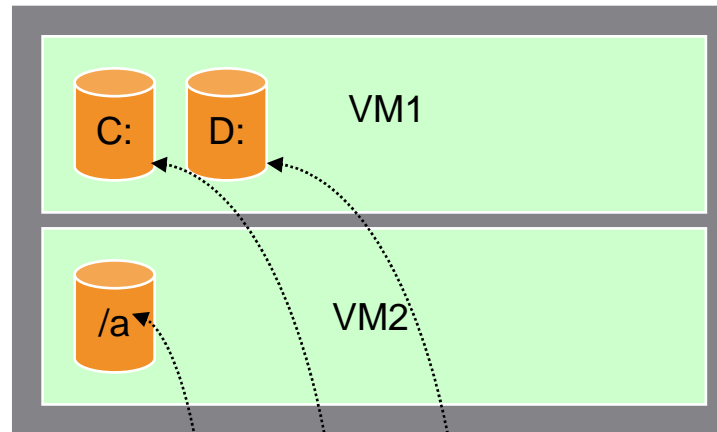# Full-VM Backup with FlashCopy Manager leveraging vStorage API

1. FCM initiates a software snapshot of virtual guest volumes (vSphere API)

2. FCMdetermines which LUN(s) are associated with virtual machines

3. FCM invokes hardware copy services to create a persistent snapshot copy of the LUN(s) hosting the .vmdk and software snapshot

Linux Proxy Server

(physical or virtual machine)

FlashCopy Manager

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Full-VM Backup with FlashCopy Manager leveraging vStorage API

1. FCM initiates a software snapshot of virtual guest volumes (vSphere API)

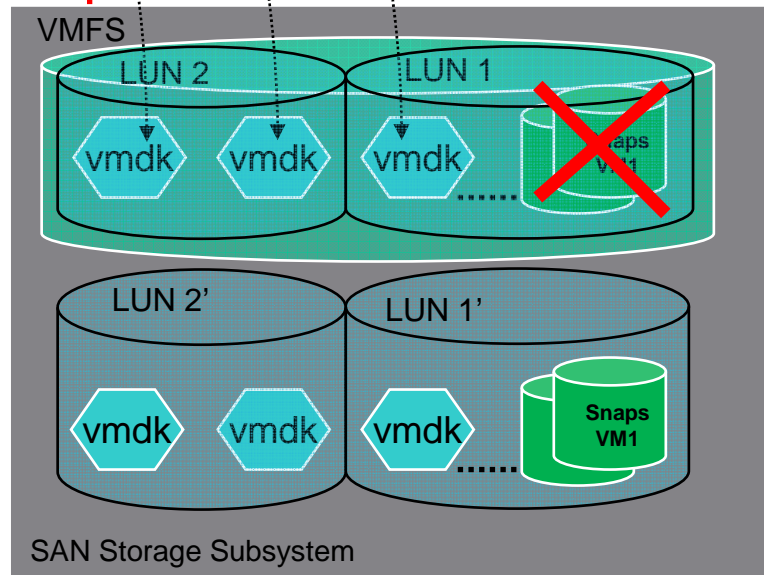2. FCMdetermines which LUN(s) are associated with virtual machines

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Linux Proxy Server

(physical or virtual machine)

FlashCopy Manager

4. Hardware snapshot is persistend for use as source for recovery operation, software snapshots are deleted.

Full-VM Backup with FlashCopy Manager leveraging vStorage API

VM1

C: D:

VM2

/a

SAN | ESX\ESXi Server

VMFS

LUN 2   LUN 1

vmdk vmdk vmdk

LUN 2'   LUN 1'

vmdk vmdk vmdk ...... **Snaps VM1**
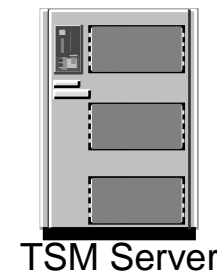
SAN Storage Subsystem

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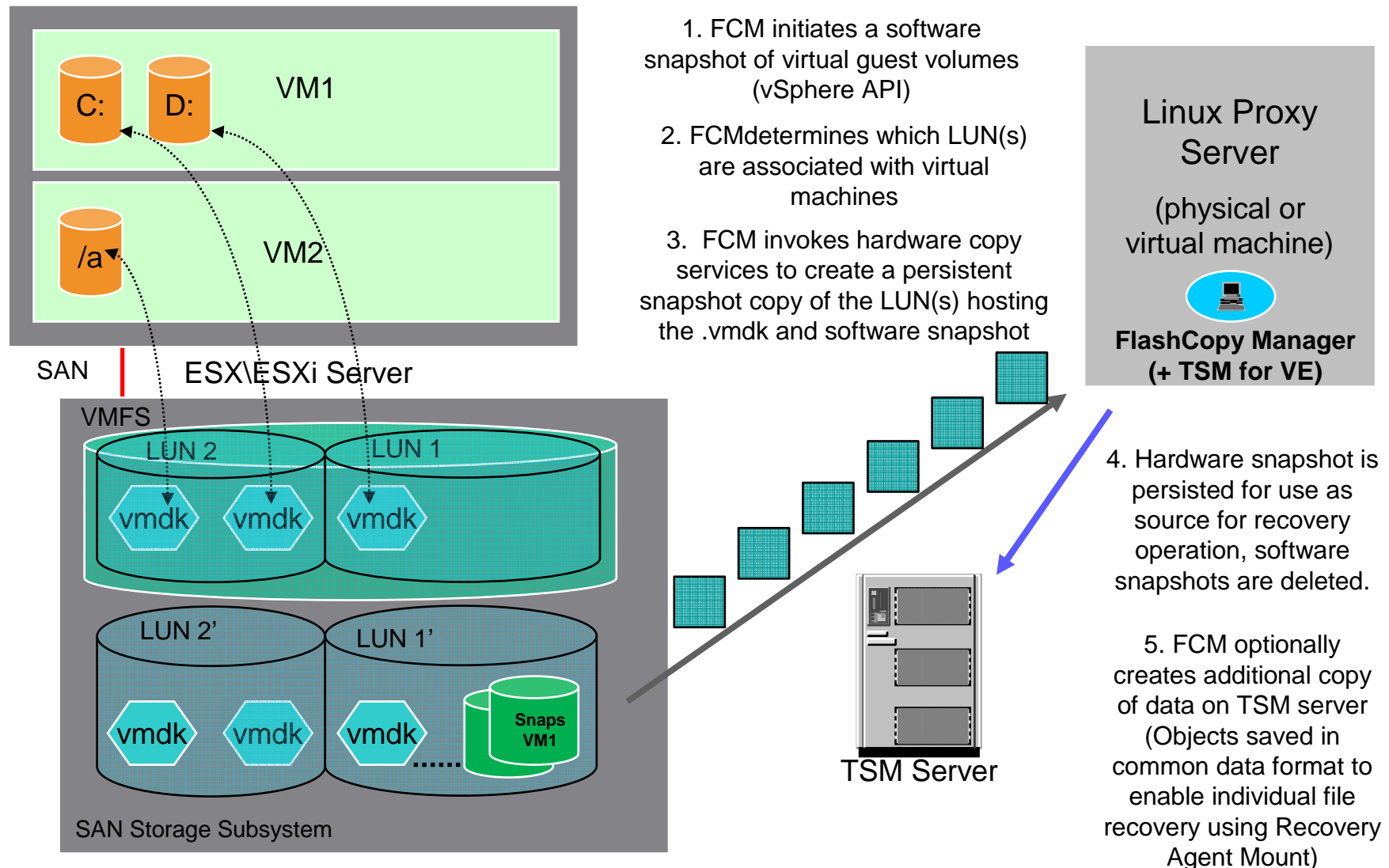
Linux Proxy Server

(physical or virtual machine)

FlashCopy Manager (+ TSM for VE)

4. Hardware snapshot is persisted for use as source for recovery operation, software snapshots are deleted.

5. FCM optionally creates additional copy of data on TSM server (Objects saved in common data format to enable individual file recovery using Recovery Agent Mount)

TSM Server

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FlashCopy Manager 3.1 proxy host requirements
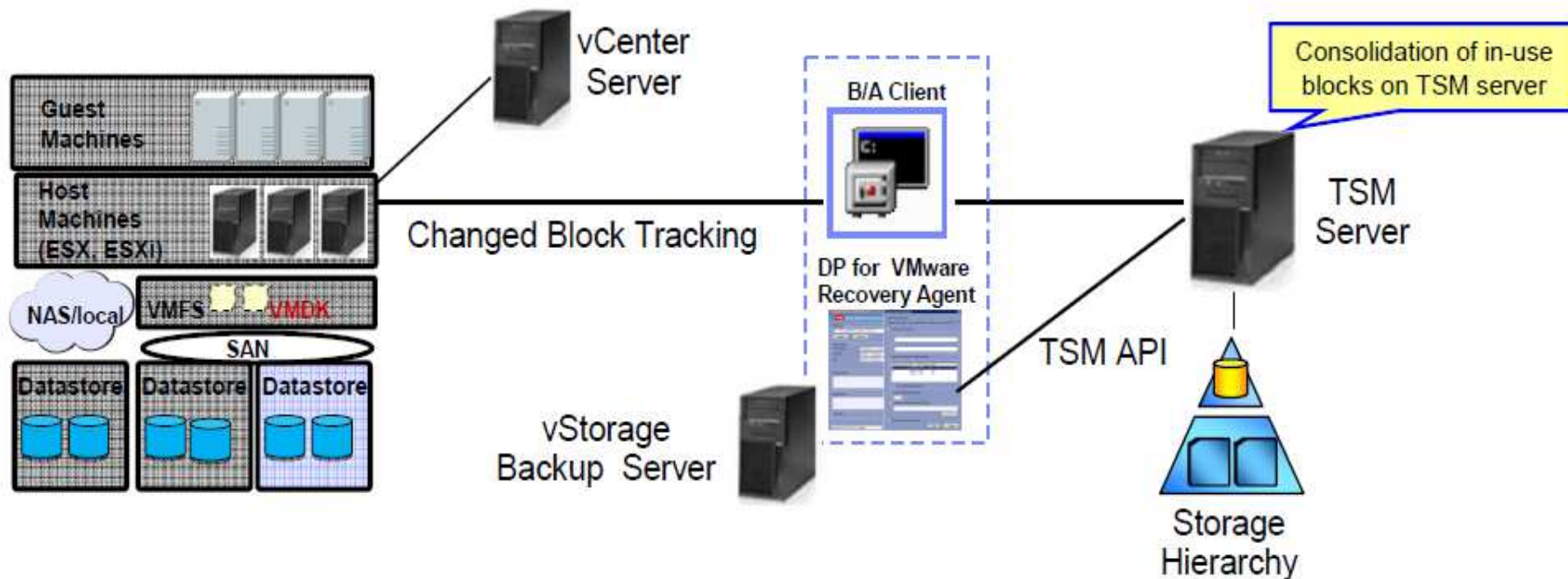
- **RedHat or SUSE Linux physical or virtualized proxy host**

  - FCM for VMware can be installed in coexistance with other software products

  - If a VM is used, this VM must not be stored on a datastore being backed up by FlashCopy Manager

  - Network connection (IPv4 or IPv6) to vCenter server

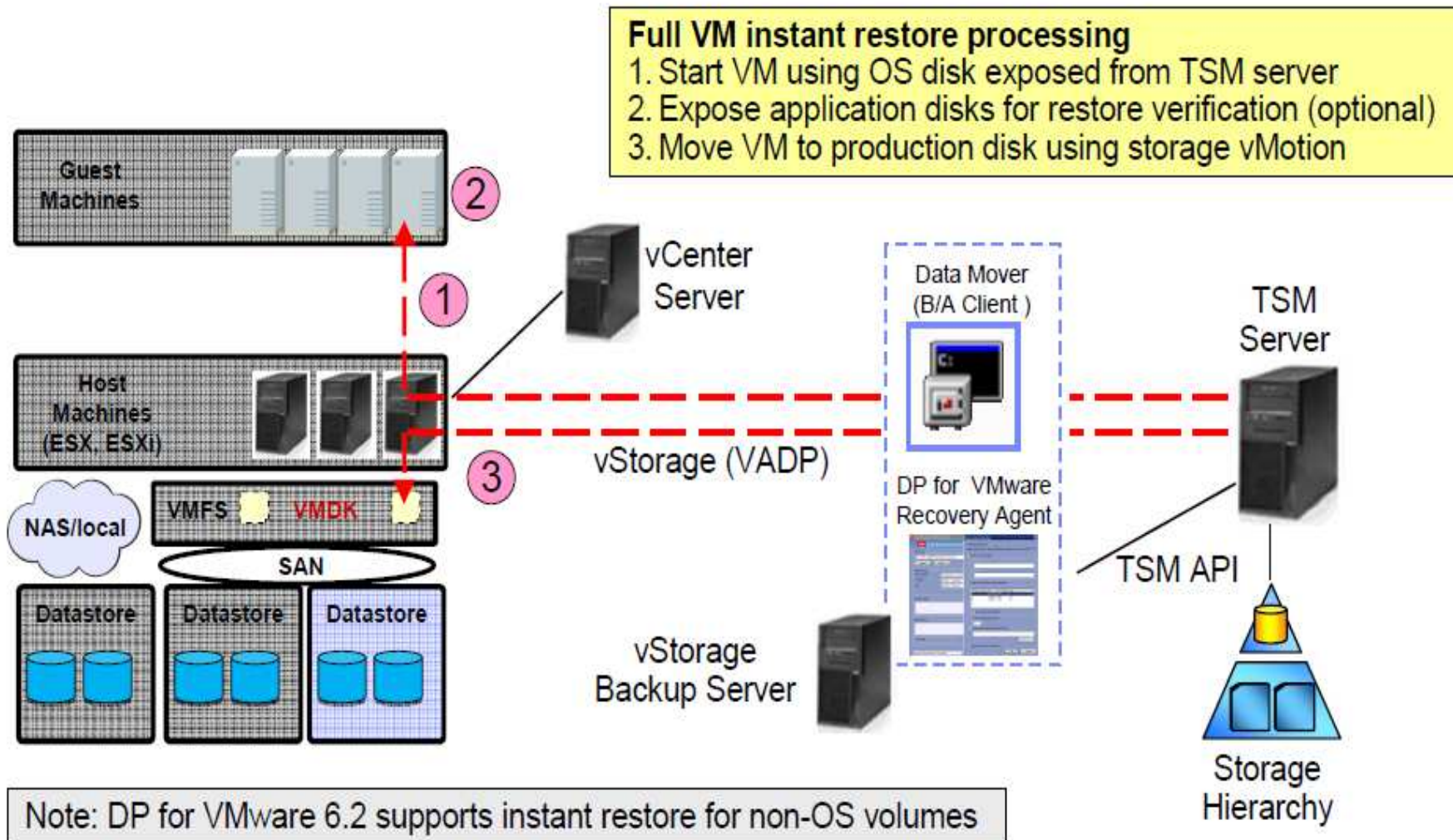 - No SAN attachment required

Agenda

- TSM V6.3 News
- TSM for Virtual Environments News
- TSM FlashCopy Manager News
- Roadmap

VMware progressive incremental backup

VMware full virtual machine instant restore

Full VM instant restore processing
1. Start VM using OS disk exposed from TSM server
2. Expose application disks for restore verification (optional)
3. Move VM to production disk using storage vMotion

Note: DP for VMware 6.2 supports instant restore for non-OS volumes

Authentication via external user directory
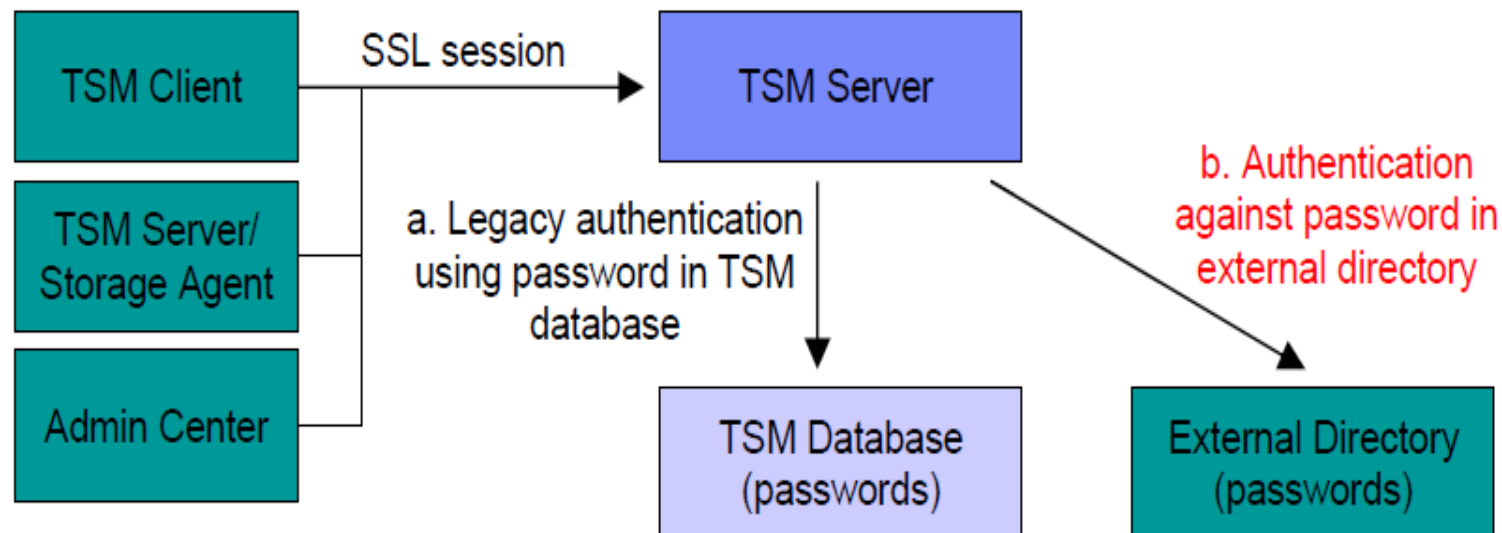
- Option to store selected TSM user information, including passwords, in an LDAP-based directory (e.g., Tivoli Directory Server, Active Directory)

- Authentication options
  a. Legacy authentication using password stored in TSM database
  b. Authentication against password stored in external directory

- Allows enforcement of strong password rules