Pulse2011

Protecting VMware

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Agenda

1. The Traditional Way to Protect VMware Virtual Guests
2. Introducing TSM for Virtual Environments (DP for VMware)
3. Product Demonstration
4. FAQs

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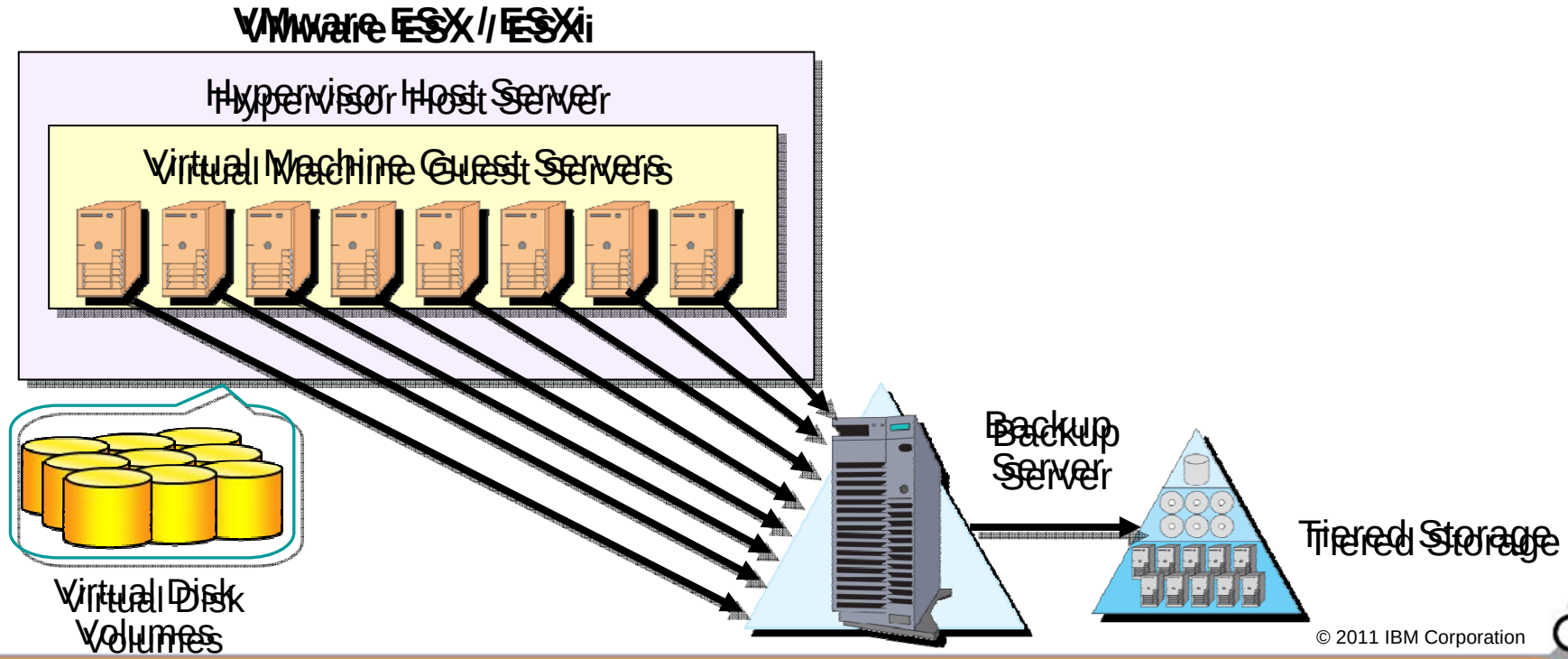
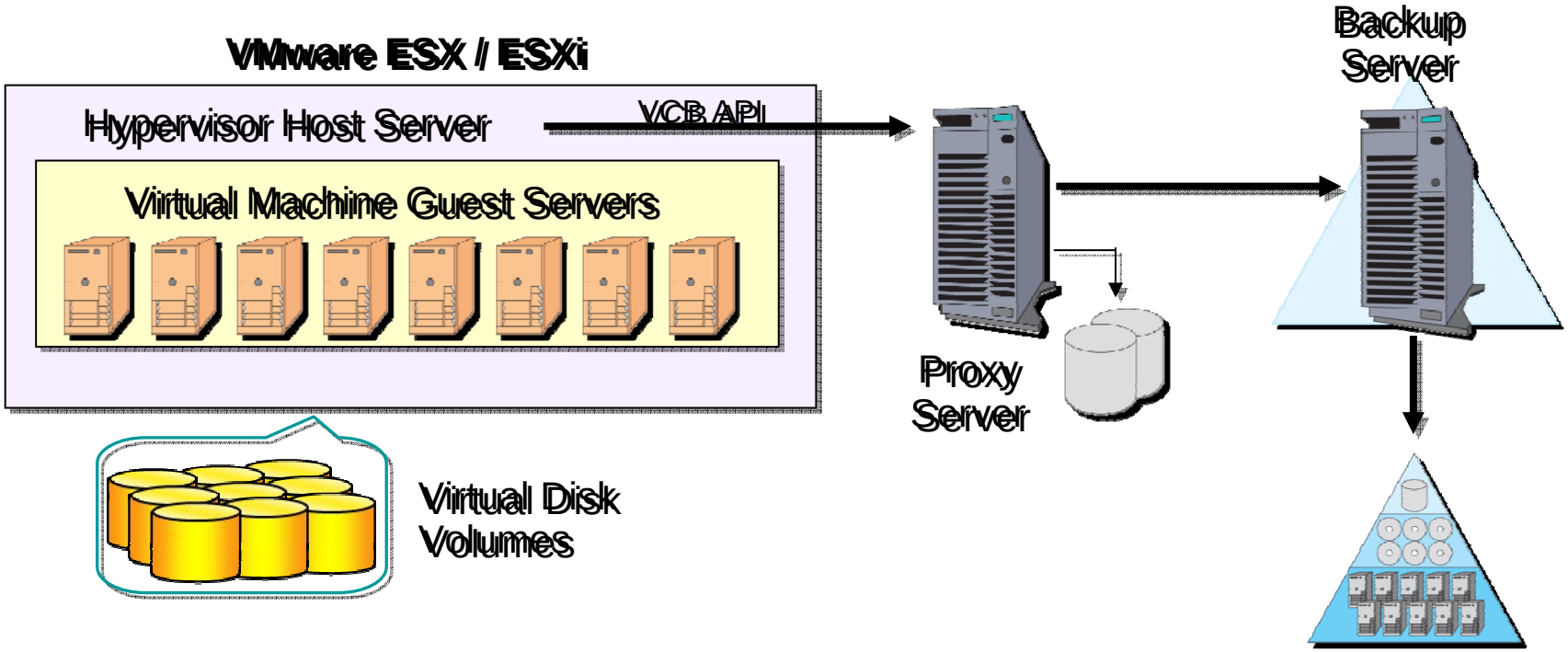
Traditional In-Guest Backup &Recovery Model

- Install a backup agent in the guest OS, just like a physical server
- Run and manage backups just like in a physical server environment
- Downside: deploying, managing, maintaining ‘backup agent sprawl’
- Downside: can put a serious drain on processor, memory, I/O resources
- Downside: full system recoveries are time consuming



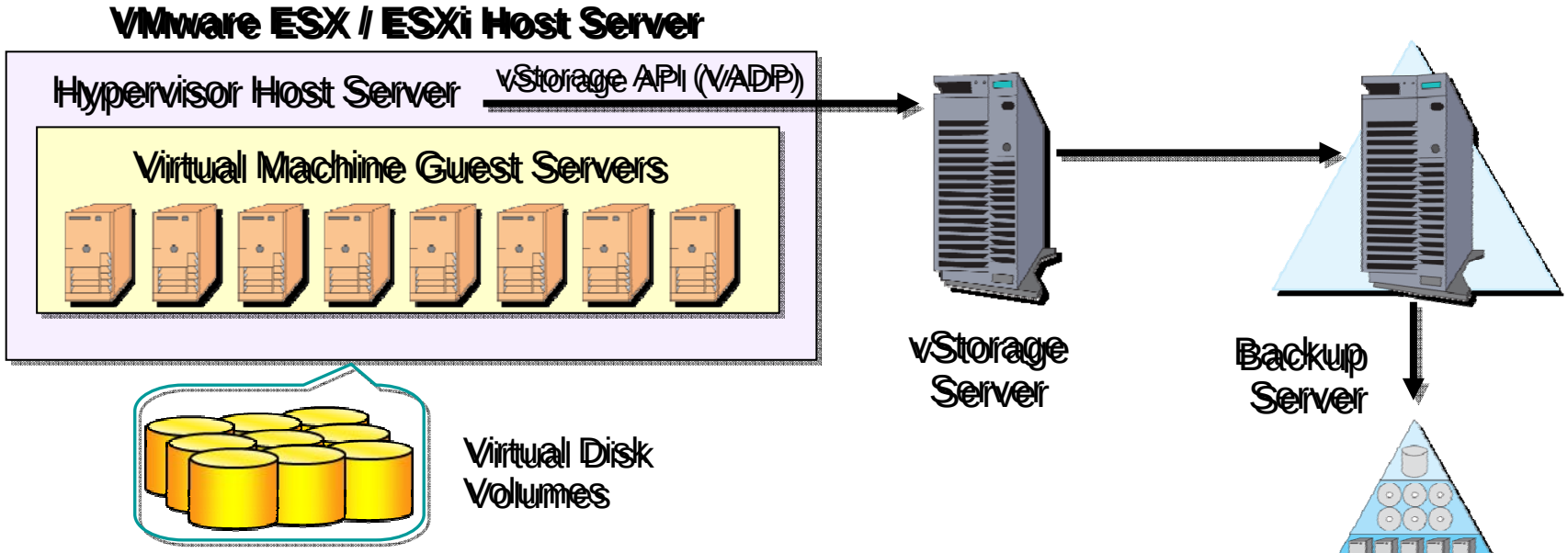
Interim solution – VMware Consolidated Backup (VCB)

- Snapshots of the VMs are taken by the Hypervisor and sent to a Proxy Server, which is then backed up by the Backup Server
- Downside: requires more hardware (server and storage)
- Downside: multi-step backup and recovery through the Proxy Server



The new approach: VMware vStorage APIs for Data Protection (VADP)

- Data is accessed directly from the VM storage and passed directly to the backup server (single hop, data is not stored on the vStorage Server)
- Changed Block Tracking (CBT) allows incremental backups (with periodic full) without forcing a scan of the guest OS file system
- The vStorage Server can be a virtual machine – no additional HW needed



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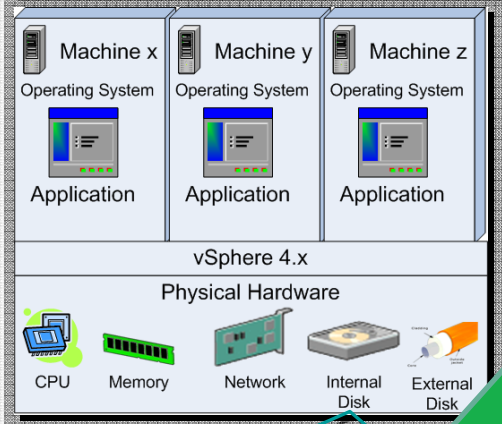
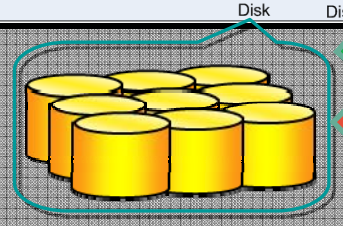
TSM for VE (Data Protection for VMware)

Support **multiple recovery options** from image backup and vStorage API change block tracking (CBT)
New TSM for * (additional component) enhancing the b/a client (Windows only) support to include
- CBT allowing incremental backups (with periodic block-level full backups)
- File/Volume/Disk/Full VM restores from an image backup (multiple OSs are supported)

NEW TDP

Added Value
- Single Source Backup
- Change Block Tracking
- File level recovery from any OS
- Near-Instant Volume Restore



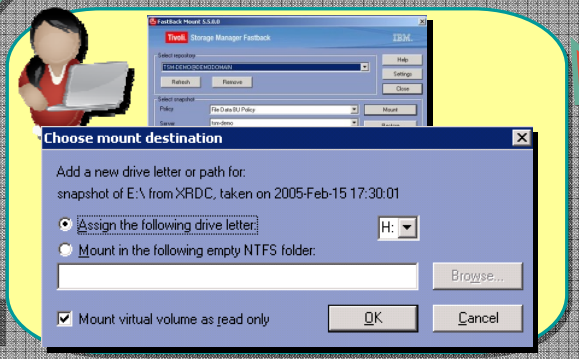


vStorage API

DP for VMware
Running on Windows proxy*

Tivoli Storage Manager Storage Pool

1 Backup VM image

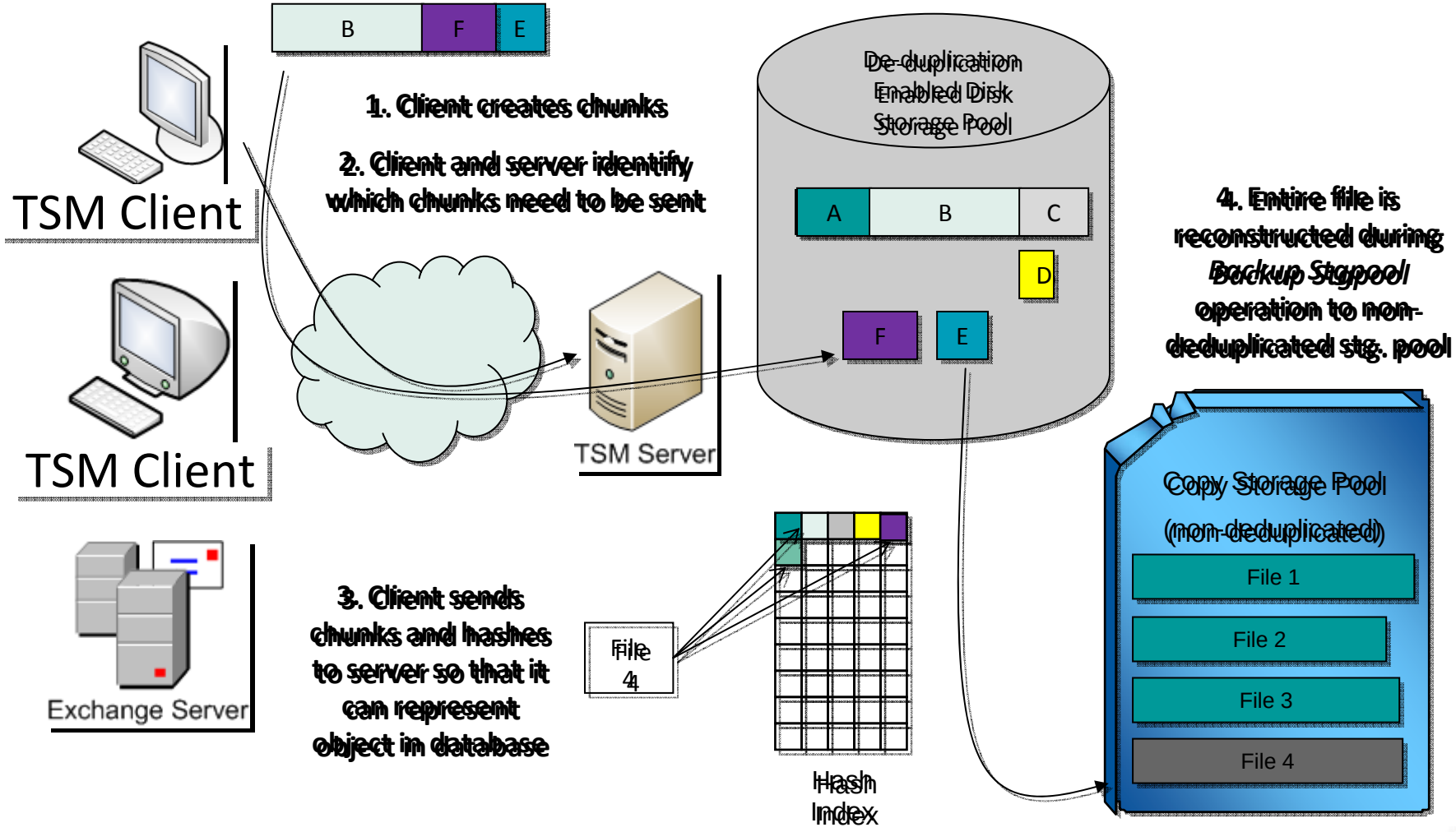


2 Mount image directly from TSM disk storage pool, expose it locally or using an iSCSI target interface

3 Restore single file directly to guest (or any other target)

*Proxy server can be a physical or virtual machine

TSM Client-Side Data Deduplication



Can be used in conjunction with VMware backups

TSM for VE (Data Protection for VMware) Features

- Supports all guest-OS platforms (image backups)
- Complete full snapshot of 'live' (running) virtual machine with pre/postsnapshot support (VMware tools)
- When Installing TSM B/A Client on physical backup proxy (off-host)
  - Backup load (CPU, memory and disk I/O) off-loaded from ESX server
  - LAN-Free
- VMotion aware
- Supported transports (data transfer path) SAN, HotAdd, LAN
  - Auto detected with vStorage APIs
- Backup proxy
  - Physical or virtual machine running on guest VM
- Interface
  - Backup/Restore via command line from backup proxy via BACKUP/RESTORE VM commands
  - Backup/Restore GUI from backup proxy, displays all VM's available for backup/restore

TSM for VE Business Benefits

- Reduces costs associated with implementation and administration
  - No additional hardware required
  - Automated discovery of new VMs ensuring you environment remains protected
  - Retention management integrated into Tivoli Storage Manager policies
  - Simplified agent management with the centralized IBM Tivoli® Storage Manager console and one agent supports multiple VMs

TSM for VE Business Benefits

- Reduces costs associated with implementation and administration
- Improves RTOs and RPOs
  - Leverages vStorage APIs for Data Protection (VADP) and Change Block Tracking (CBT)
  - Non-disruptive, single-pass, content-aware, block-level backup enabling faster, more frequent protection for virtual machines
  - Support for LAN-free data transfer from the VMware server's storage to the backup server - preserving bandwidth for other uses
  - Flexible recovery options: file, volume, VM image (BMR)
  - Near-instant restore of files and disk volumes (Windows and Linux)

TSM for VE Business Benefits

- Reduces costs associated with implementation and administration
- Improves RTOs and RPOs
- Frees up valuable resources
  - ‘Near Zero Impact Backup’ - Offload the backup workload from virtual machines and production VMware ESX hosts to vStorage backup proxy servers
  - Frees up system administration time

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FAQs

Q: What's the TSM for Virtual environment agent capabilities and limitations with Microsoft hyper-V

A: TSM for VE currently only supports VMware environments. Full & incremental backup functionality (CBT) are provided by the vStorage API for Data Protection API (developed by IBM). Near instant file- & volume level recovery is provided by TSM for VE

Q: Can I use the vStorage API to protect my virtual guests without TSM for VE

A: Yes. The TSM BA client natively supports the vStorage backup API to perform full backups of virtual guests. The following functionality will be lost;

1. Incremental backups using VMware's change block tracking (CBT) feature
2. File, directory, near-instant volume recoveries

FAQs

Q: How does the TSM versioning work with TSM for VE

A: Policy management is integrated into TSM. The versioning parameters applies to full backups only. IE if you perform full backups weekly, incremental backups during the week, and if you have you versions set to, for example, 2 versions, you will have a retention period of 2 weeks.

Q: Can TSM for VE be installed on the TSM server

A: Yes. In fact there are some benefits if you do such as

1. No additional hardware is required to enable LAN-Free data transfers saving cost and improving performance

2. The shared memory and named pipes protocols can be used which eliminates the 7 layers TCP/IP stack and therefore improves performance.

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and Q&A