



Development Environment Backup in the Private Cloud

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Cloud and Smarter Infrastructure

Innovate2013

The IBM Technical Summit

Session Overview

- Who am I?
- What is a Cloud?
- Why Backup my Development environment?
- How can Tivoli Storage Manager help?
- Summary

Who am I



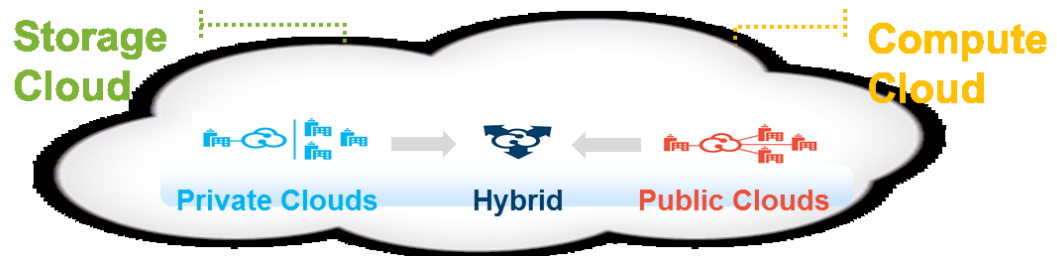
- 28 years in IT
- As a user, consultant and technical seller
 - Mainframe development
 - Original PC based infrastructures
 - UNIX Admin
 - Storage Architecture roles for the last 12 years
- Worked at IBM for the last 2 years

What is Cloud?

- What is a Cloud?
 - Shared resources
 - Serviced based offering
 - Standard infrastructure
 - Ease of management
 - Scalable
 - Flexible
 - Reduced costs
- Characteristics of (Private) Cloud (Development) Environment
 - Easy creation and destruction of development resources
 - Fast turn around times
 - Standardised resources and templates
 - Generally Virtual Machines

Types of cloud

- Public Cloud – where the service is shared by multiple unrelated organisations
 - Service Provider based
 - Need strong security between clients
 - As a client you can only access your organisations services
 - Often Portal based
 - E.G. Amazon S3, EC2, Microsoft Office 360, Salesforce.com
- Private Cloud – where the service is developed and shared within an organisation
 - Ability to standardise technology models for ease of use and management
 - Security between different functions and business units
- Hybrid – A mixture of the above with some local in-house and some externally provided services



Why do I need to backup my development environment?

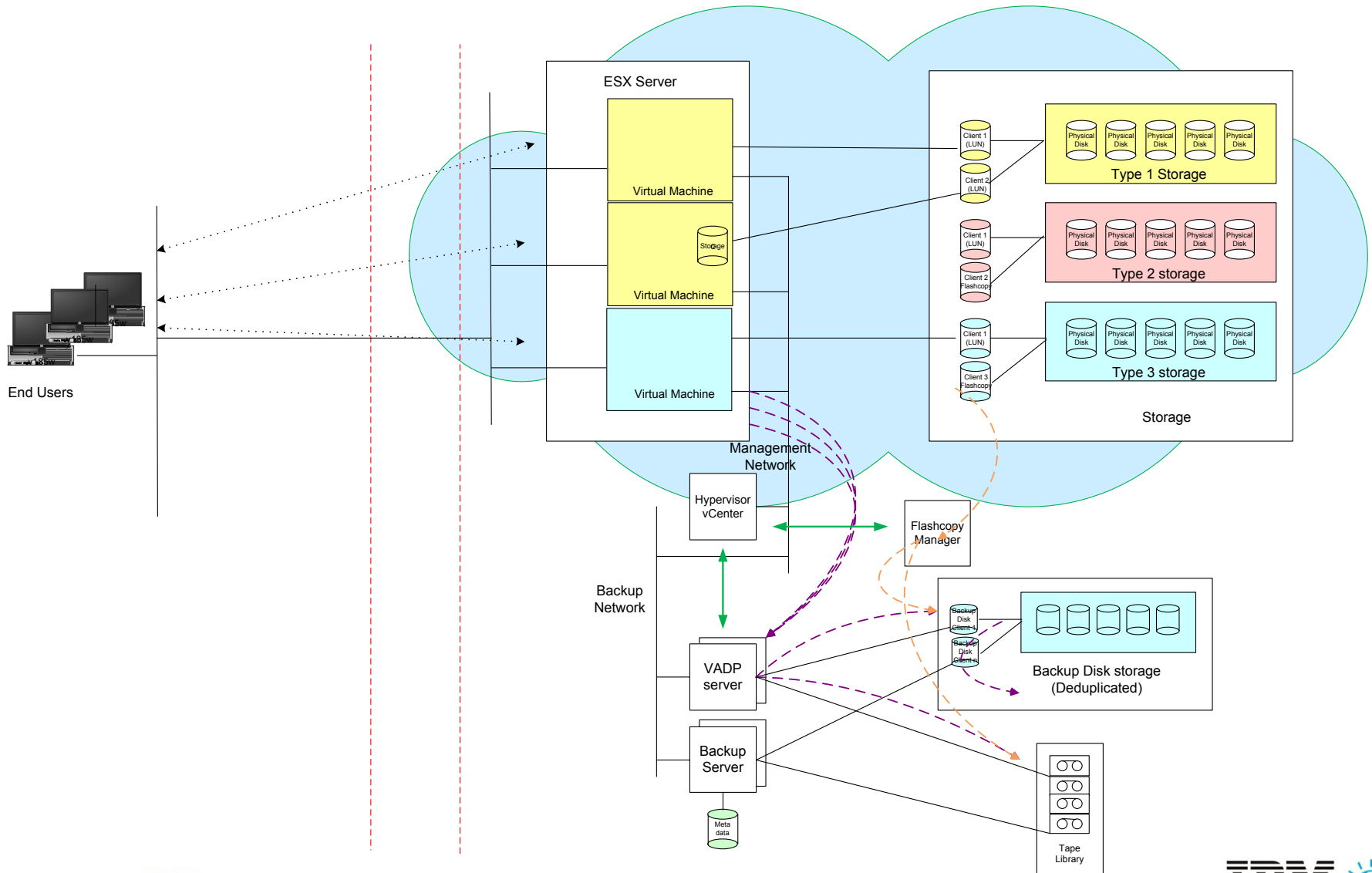
- How much would it cost to recreate the investment in your development?
- What is the cost of a development environment not being available?
- Would it be possible to recreate the developed assets?
- Backup is an insurance policy – would you not insure your house?



Backup challenges of the cloud development environment

- New VM's being generated
- Dynamic VM relocation – where is the VM?
- Applications – Exchange, SQL Server etc to be backed up and restored
- Flexible restore capability – entire machines, databases, individual files etc.
- Other resources
 - Files – documentation etc
 - Configuration databases
 - Management tools

Generic Development Cloud environment



Introducing Tivoli Storage Manager for Virtual Environments

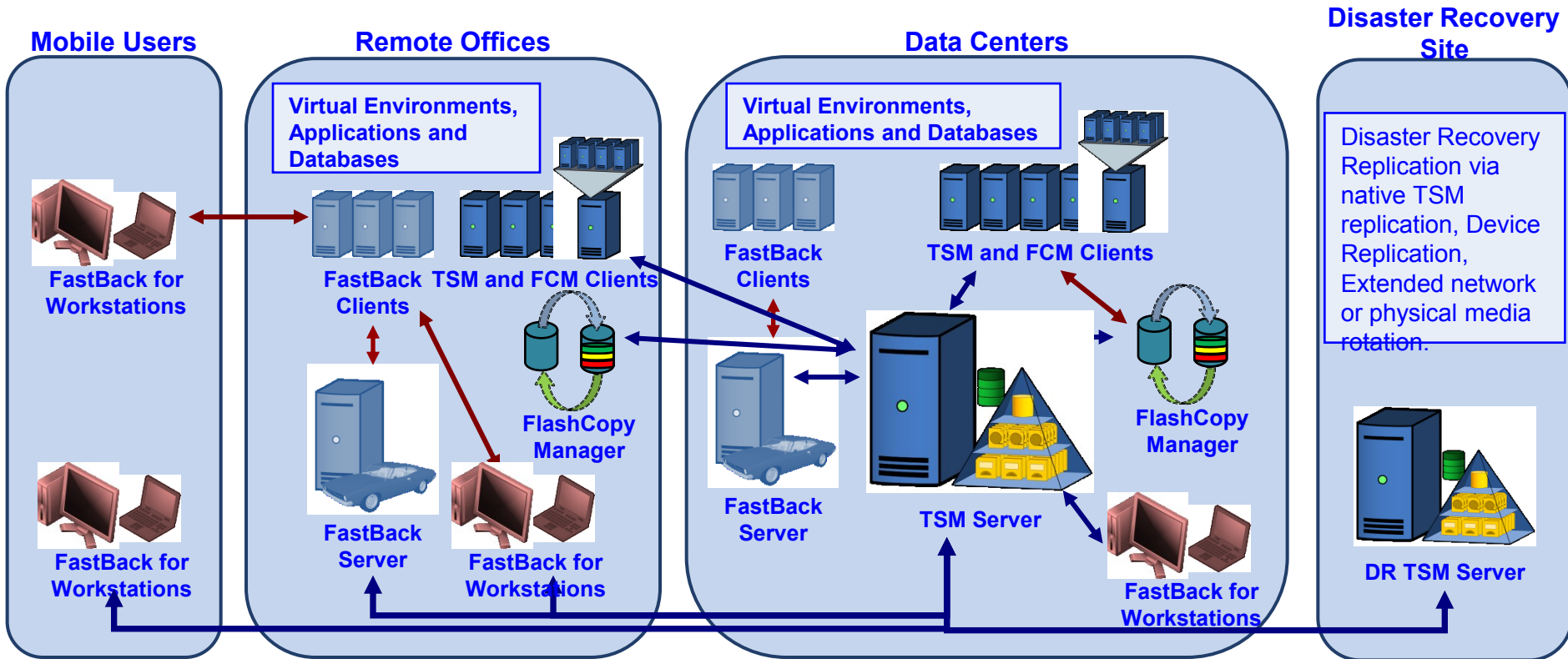
- TSM for Virtual Environments
 - Agentless – leverages VADP
 - Single Backup
 - Multiple restore functions
 - Whole VM, Instant restores of volumes within a VM, Individual files
 - Ability to capture new VM's and group backups
 - Auto Discovery, By Cluster, By wildcard name, vApp - Etc
 - Co-exist with vCloud Director
 - Application support
 - Exchange, SQL, Single backup, individual object restore¹
 - Currently full function for VMWare, Hyper-V and others under development
- Adding FlashCopy Manager provides this functionality based on Hardware snapshots and adds capability for faster restores.

¹Based on planned TSM 7.1 functionality

Tivoli Storage Manager (TSM) Overview

- TSM is a Unified end-to-end data protection solution
- Core Support for File and IBM Database backup including full management of the backup environment
 - Deduplication – Client side and Server Side
 - Tape or VTL management
 - Incremental forever backup
 - Minimising data movement and backed infrastructure costs
 - Support for Hardware snapshots with FlashCopy Manager
- Support for Application environments including Databases, ERP, Mail etc
- Support for virtualised environments
- High availability functionality
- Ability to deliver “As a Service” e.g. Frontsafe Portal

Tivoli Storage Manager Family *offers unified recovery management*



- **TSM FastBack for Workstations:** Continuous data protection for desktops & mobile users
- **TSM FastBack:** Block Level Incremental Forever & CDP protection for critical servers, deduplication
- **FlashCopy Manager:** Robust application protection using hardware snapshot
- **Tivoli Storage Manager:**
 - ✓ Industry leading scalability, performance, availability, deduplication
 - ✓ Advanced tape and Disaster Recovery support
 - ✓ Broad OS and HW platform support, application protection

Ease of use – Tivoli Storage Manager Operations Center *Now, anyone can be a backup expert*

Is anything
breaking or
broken?



Are my backup
servers
healthy?

Is my data
protected?

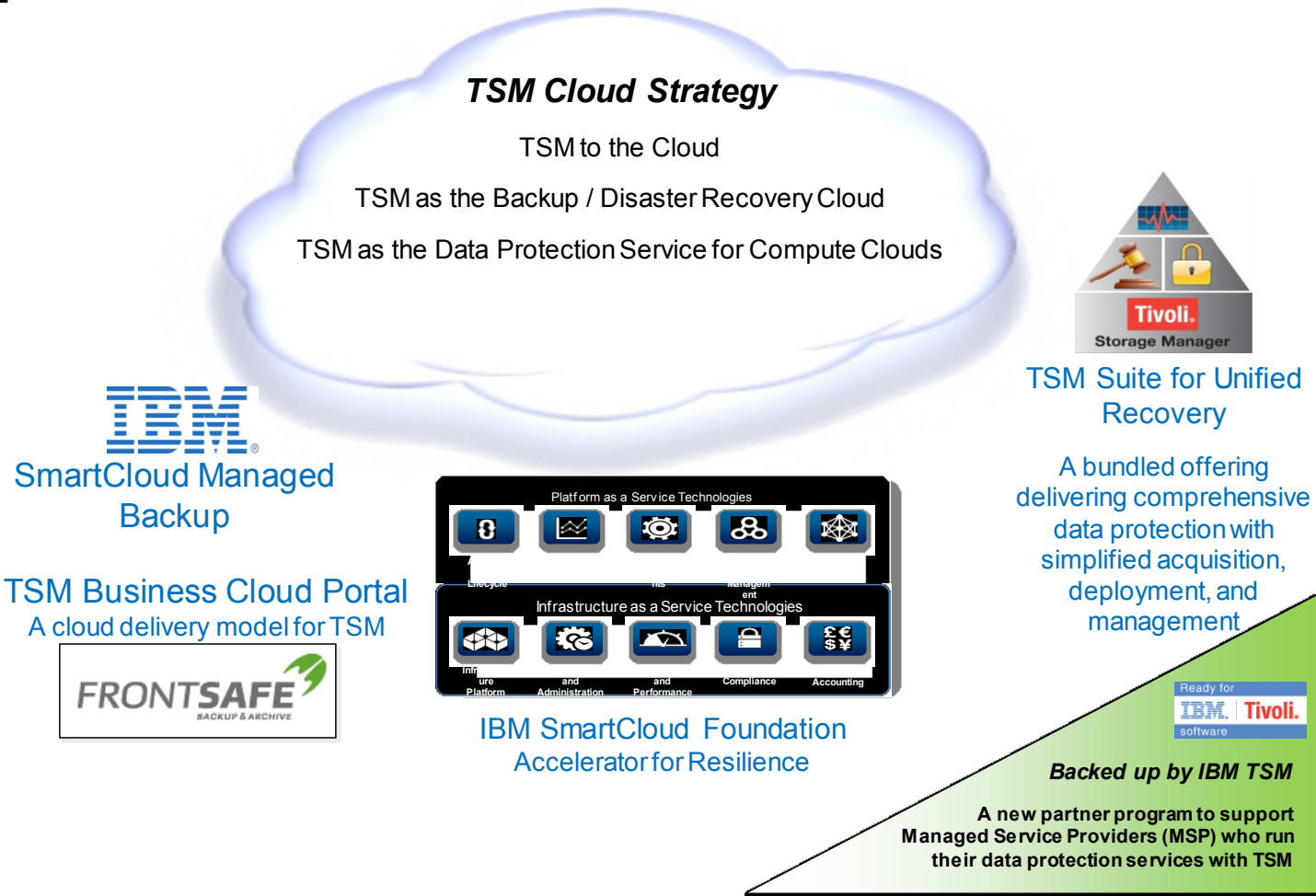
Do I have
capacity?

TSM as the end to end solution for cloud data protection

- Enterprise data protection tool
- TSM for Virtual Environments for Virtualised Compute platforms
- Integrated solution with overall TSM for Non VM backups
 - File
 - Database
 - etc
- Standardised management of resources

Tivoli Storage Manager and the wider cloud environment

Comprehensive Cloud Based Data Protection



TSM to the Cloud

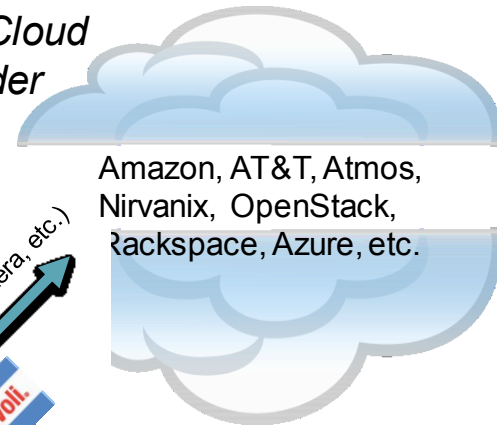
Remote or Data Center Sites



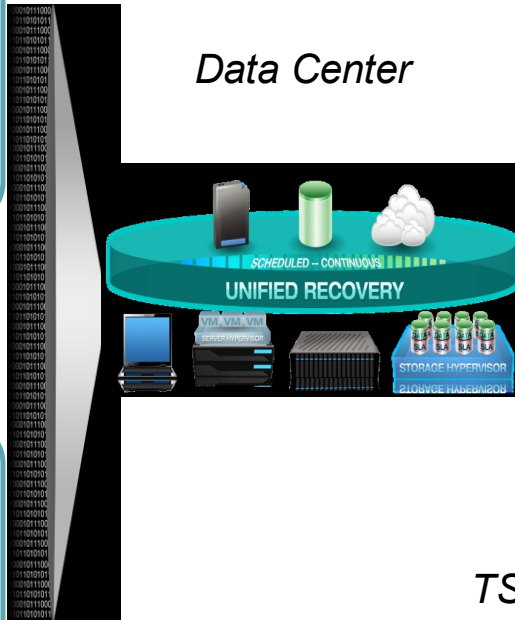
Backup / Restore Traffic



Public Capacity Cloud Storage Provider



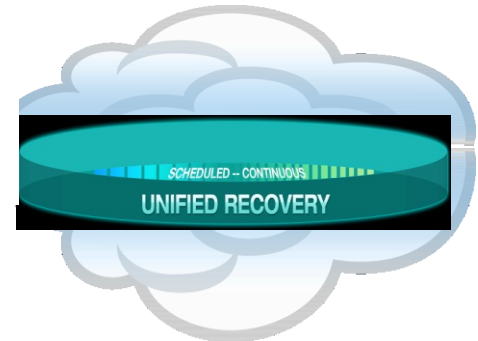
Data Center



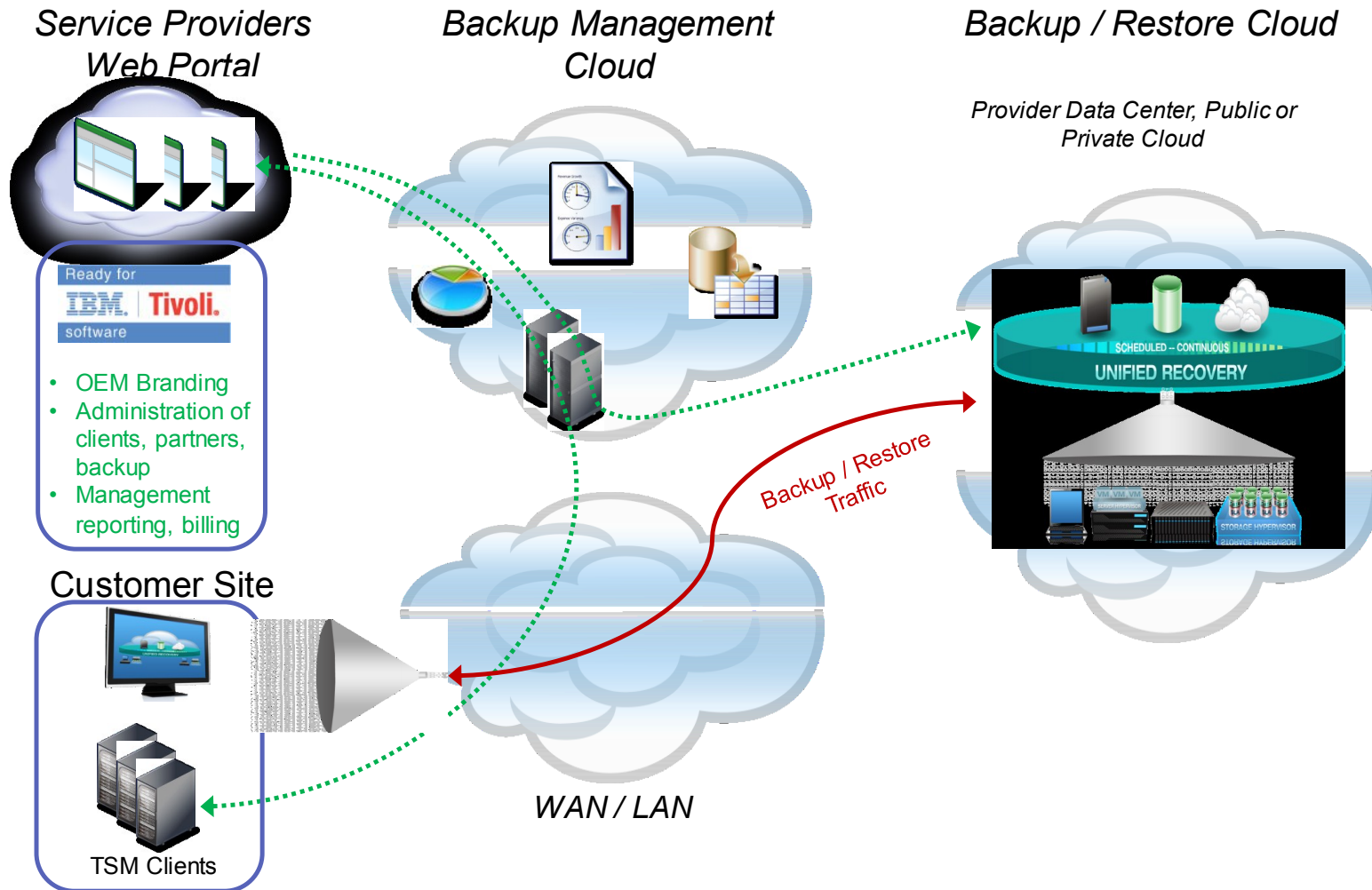
Via Cloud Partners
(Riverbed, Netex, Ctera, etc.)

Ready for
IBM Tivoli
software

TSM Backup / Disaster Recovery Cloud

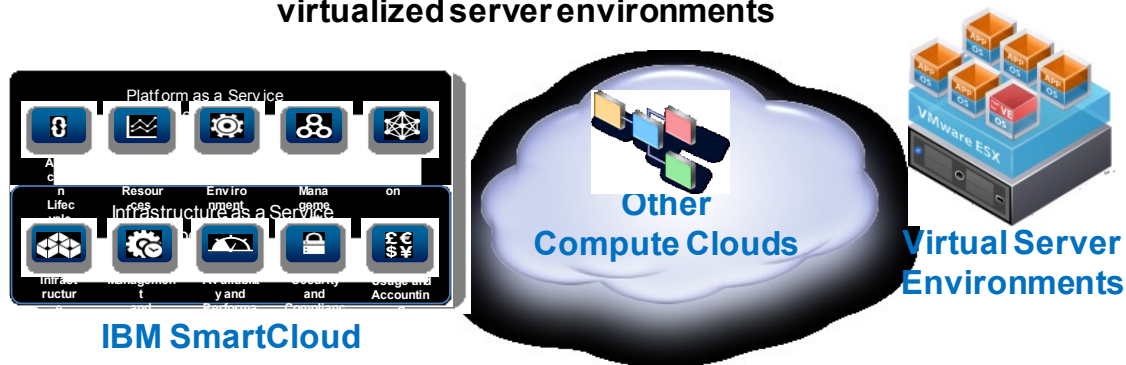


TSM as the Backup/Disaster Recovery Cloud



Dynamic Storage for Cloud

Compute Clouds and other virtualized server environments



IBM SmartCloud

Virtual Server Environments



IBM
Virtual Storage Infrastructure

Midrange Storwize V7000



Virtual Storage Center

Enterprise SAN Volume Controller

Manage

Tivoli Storage Productivity Center



IBM Virtual Storage Center provides ideal storage infrastructure for Cloud

Summary

- Cloud environments are becoming a normal way of managing the Services within an organisation
- Cloud environments especially in development accelerate the provisioning and removal of development services increasing the rate of change
- Development resources are valuable and should be protected
- TSM can provide an overall Unified, end to end data protection solution for the organisation
- TSM can provide highly functional capabilities to protect the underlying Virtual Machines and the data held on them.
- FlashCopy Manager can be used to leverage Hardware snapshots
- TSM supports protection Of the Cloud, To the Cloud and allows provision of Backup as a Service.

Questions



Thank You

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