



IBM PSSC

# IBM Montpellier *ProtecTIER* Demos





September 2008

# Agenda

1. De-Duplication & *IBM ProtecTier*
2. Demo Scenarios Overview
3. Demo

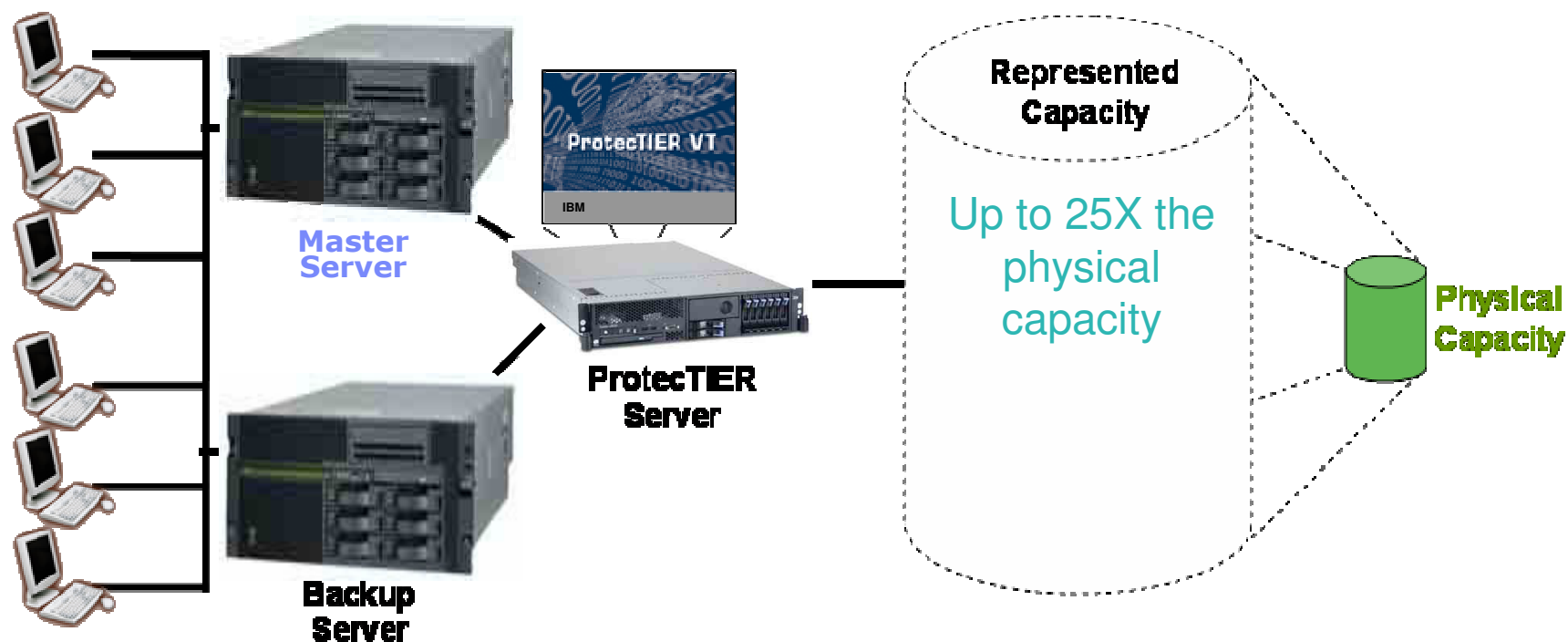
# 1 - De-Duplication and IBM *ProtecTIER*

## Enterprise De-Duplication Requirements

<b>Performance</b> 	<b>Data is growing, backup windows are shrinking. Solutions must allow customers to process more data faster.</b>
<b>Capacity</b> 	<b>Business needs and regulation are driving the need for long term on-site disk-based data retention. Solutions must allow for large and growing (hundreds of TB) repositories.</b>
<b>Data Integrity</b> 	<b>Information is the company's lifeblood. The risk of data corruption must be zero.</b>
<b>Non Disruption</b> 	<b>The solution must fit with existing practices, policies and SLAs.</b>

## What is IBM *ProtecTier* ?

*A product from IBM's acquisition of Diligent – April 2008*

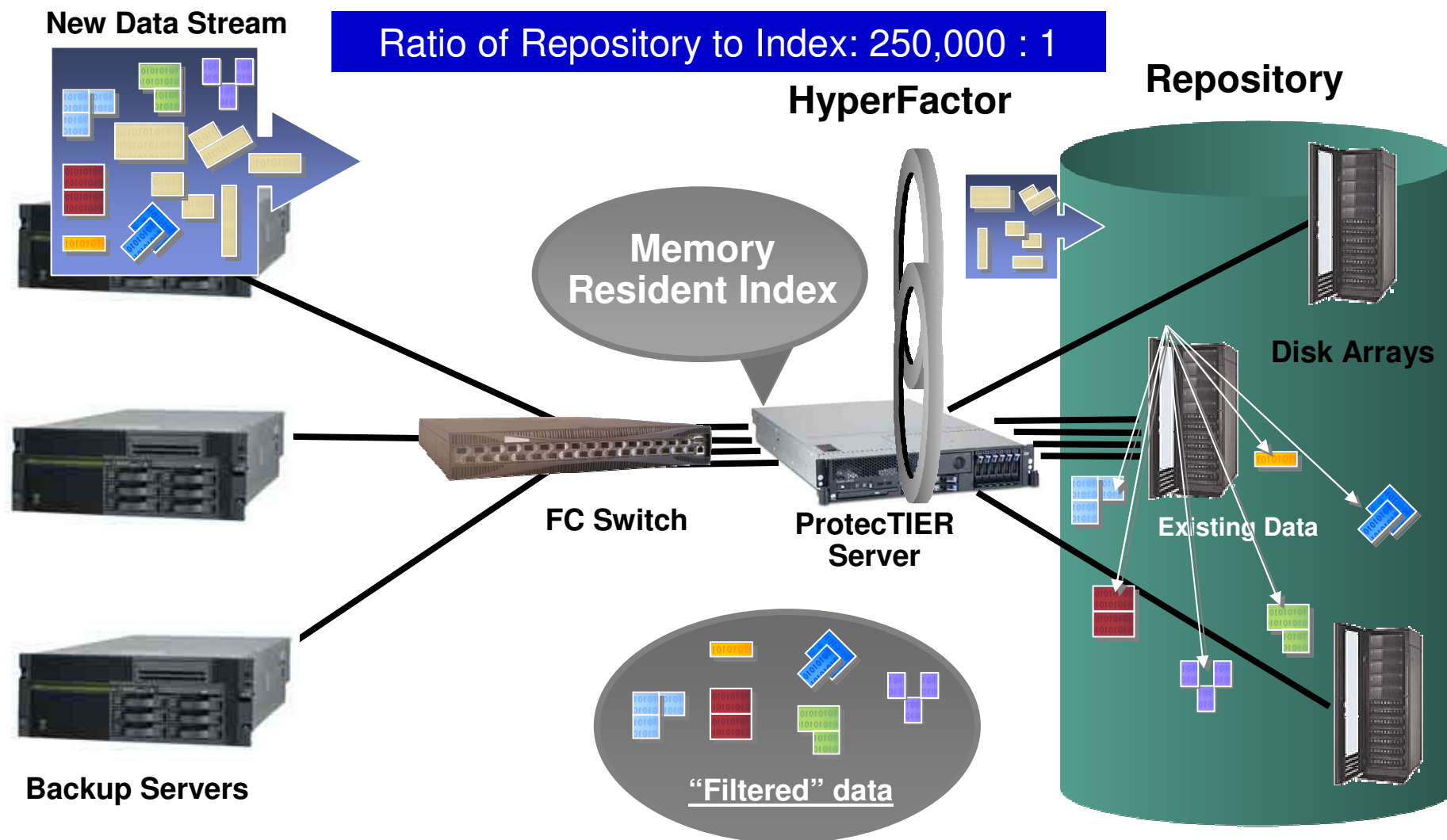


- **Software solution** that resides on standard Linux server
- **Emulates a tape library** unit, including drives, cartridges and robotics, & **de-duplicates data**
- **Uses FC-attached disk array** as the backup medium

## Overview of *ProtecTIER* Differentiators

<b>Performance</b>	<b>Up to 450 MB/s per node, performing <u>inline</u> de-duplication</b>
<b>Capacity</b>	<b>Up to 1 PB physical capacity per node</b>
<b>100% data integrity guarantee</b>	<b>Binary diff process during de-dupe ensures data integrity</b>
<b>No impact to existing daily operations</b>	<b>Inline de-duplication eliminates need for significant secondary processing</b>
<b>Non-disruptive implementation</b>	<b>Works with existing backup environment and infrastructure</b>

# IBM Diligent Data Flow



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## 2 – Demo Scenarios Overview

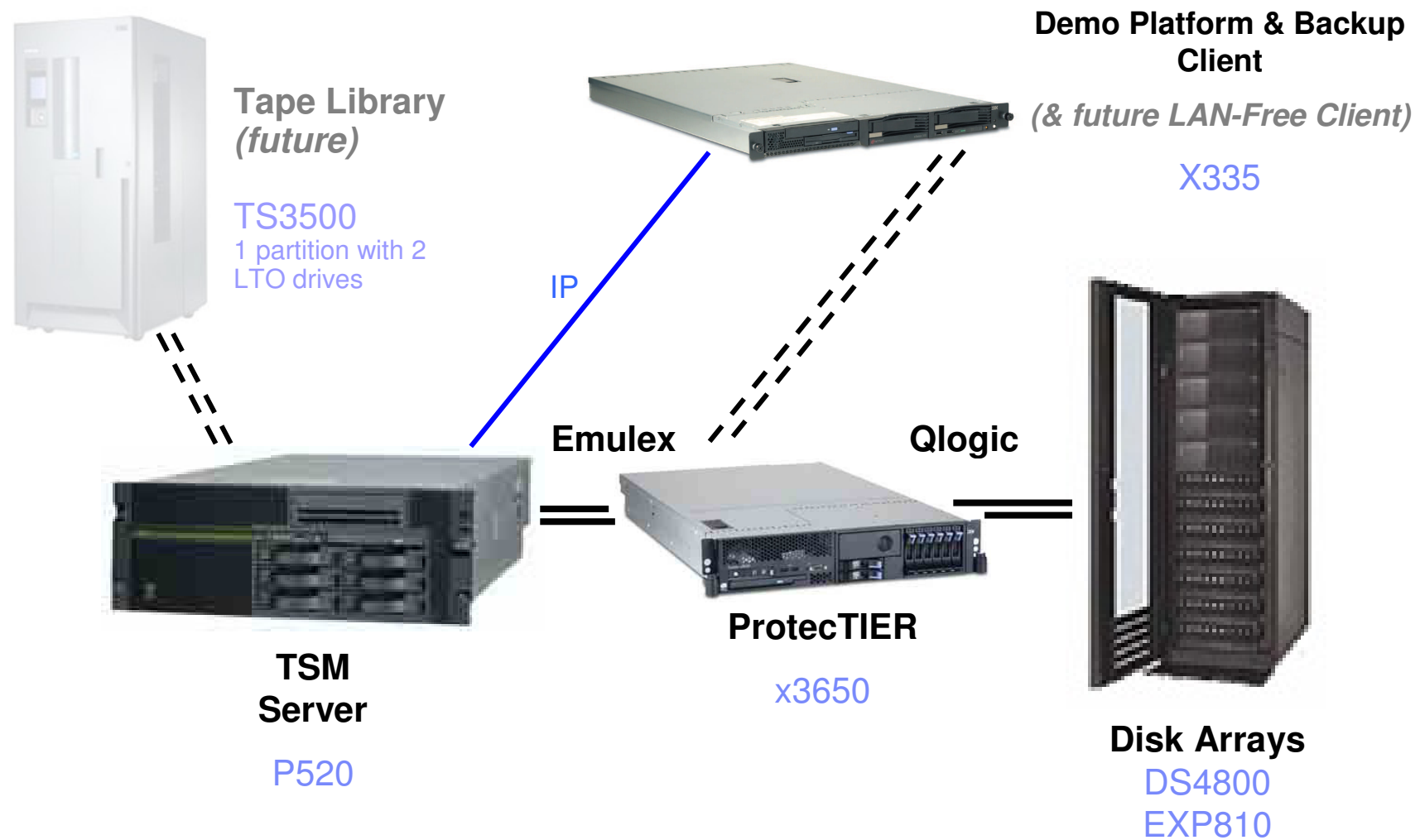
## Demo Objectives

- Cover the *ProtecTIER* Manager and will explain the graphics and de-duplication ratios, using 3 different types of backup/archives, and versioning with TSM.
- Show the progress of the factoring ratio along time.
- Highlight the benefit of the VTL for the backup/restore solution.

## Demo Overview

- During the demo, to demonstrate the benefits of the *ProtecTIER* de-duplication with TSM, we'll perform backups online, and we'll show the repository diagrams and we'll calculate the de-duplication ratios at each step.
- The demo will start with an empty repository, and we'll do a cleanup after each part, in order to get baselines for each backup type.
- This provides a reliable ratio that corresponds exactly to the backups shown.

## Demo Environment



## Demo Scenario

### 1. Present the *IBM ProtecTier Manager* GUI

- Explain the repository panel and graphics.
- Explain the VTL panel and show how to change the Virtual Library dimension.

### 2. Present the *TSM server*

- Display the emulated library and drives, seen by TSM as an ATL3000 library and DLT drives.

## Demo : Backups & *IBM ProtecTIER* results

### 3. 1<sup>st</sup> type : a daily incremental backup with 30 versions

We'll backup in several steps, the 30 different versions of a presentation file.

- This highlights the progress of the de-duplication ratio (11:1)
- Quick restore to show performance (saving time of the physical mount + locate on tape).

### 4. 2<sup>nd</sup> type : incremental backups of Notes databases

We'll backup 2 *Lotus Notes* DBs that were changed 7 times.

- This shows how the de-duplication can be efficient on such data, depending of changes made in each DB .... (12:1)

## Demo: Archives & Restore

### 5. 3<sup>rd</sup> type : archives of large DB files

To simulate full backups, we'll archive 3 times 8 files of 1 GB each.

- Shows the benefits of tape virtualization, especially the simultaneous mounts / multi sessions.
- Shows the high de-duplication ratio of "full backups".  
(2<sup>nd</sup> archive : stored 17 MB, nominal 8 GB)
- Proves that de-duplication won't impact performances

### 6. Restoring

Restore a sample of data.

- Compare the restores w/ and w/o ProtecTIER.
- Demonstrate that restoring from a TSM local filepool or from the ProtecTIER VTL gives similar performances.

## Demo HW / SW Configuration

- **ProtecTIER Server** : x3650 (2 W Quadri-Core 64bit CPUs, 2.6 GHz, 16 GB RAM)
  - “Emulex” HBA for the Front-End and “Qlogic” HBA for the Back-End.
  - Internal disk for the OS.
  - Redhat v5.1 Linux.
  - IBM *ProtecTIER* v2.1
  
- **Repository Disk Array** : DS4800 + EXP810 (4 TB).
  - 1 RAID-10 group for *Meta Data*.
  - 3 RAID-5 groups for *User Data*.
  
- **Backup application** : TSM v5.5.1
- **Backup Client** : TSM BA Client w/ data sets & pre-defined backup profiles.



## Future Evolutions of the Demo Environment

1. **Implementation of the new IBM De-Duplication GW (*TS7650G*)**
2. **Tape Library integration**
3. **LAN-Free Backup connectivity**

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