



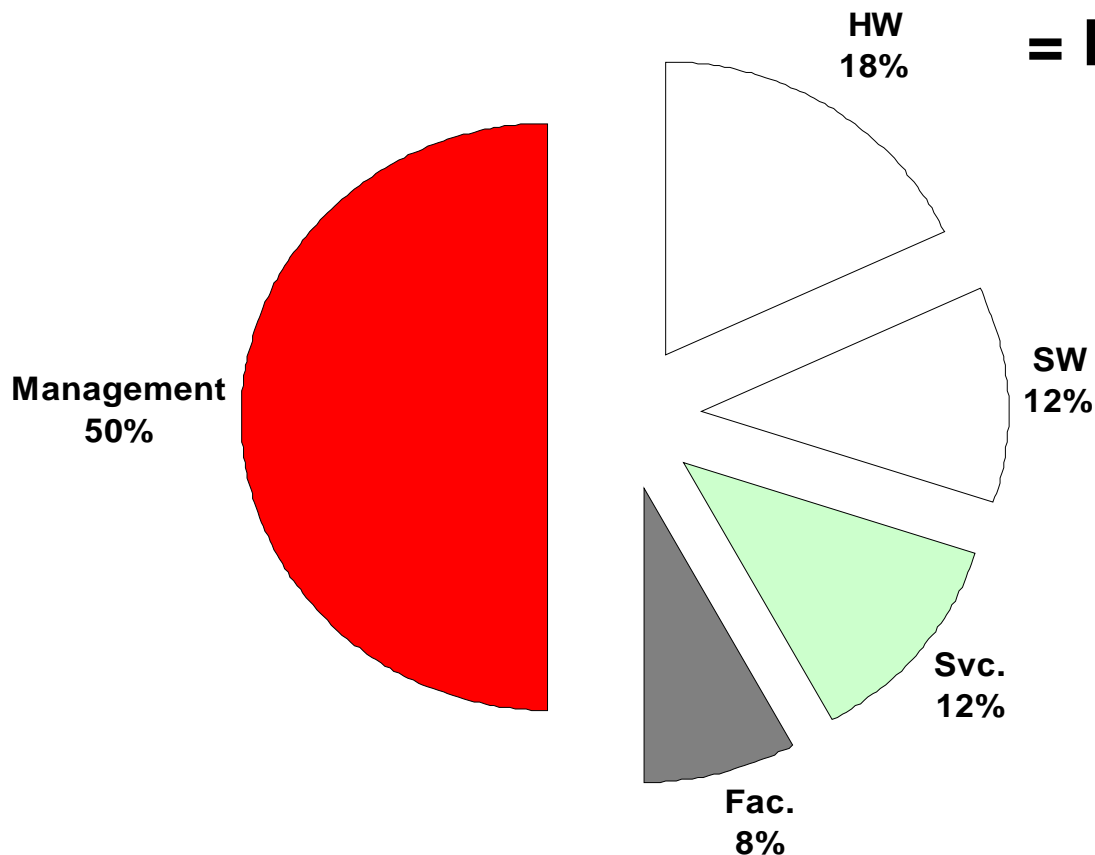
# Geringere TCO durch Innovationen von NetApp

**Johann Halper**  
**Partner Account Manager**  
**Network Appliance Austria**

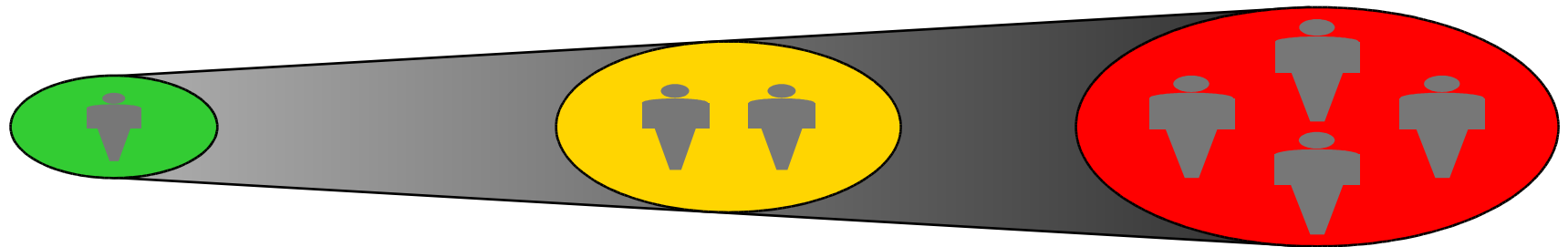
# Storagekosten, IST – Situation „36 Monate“ Betrachtung

► 50% Management Kosten

= Personalkosten



# Storagewachstum: 50% - 150% pro Jahr



**1,5 TB**

**3 TB**

**6 TB**

Fazit: Mehr Daten benötigen mehr Management

## ▶ **Bessere Auslastung**

**bestehender Ressourcen**

**bei gleichzeitigem Wachstum!**

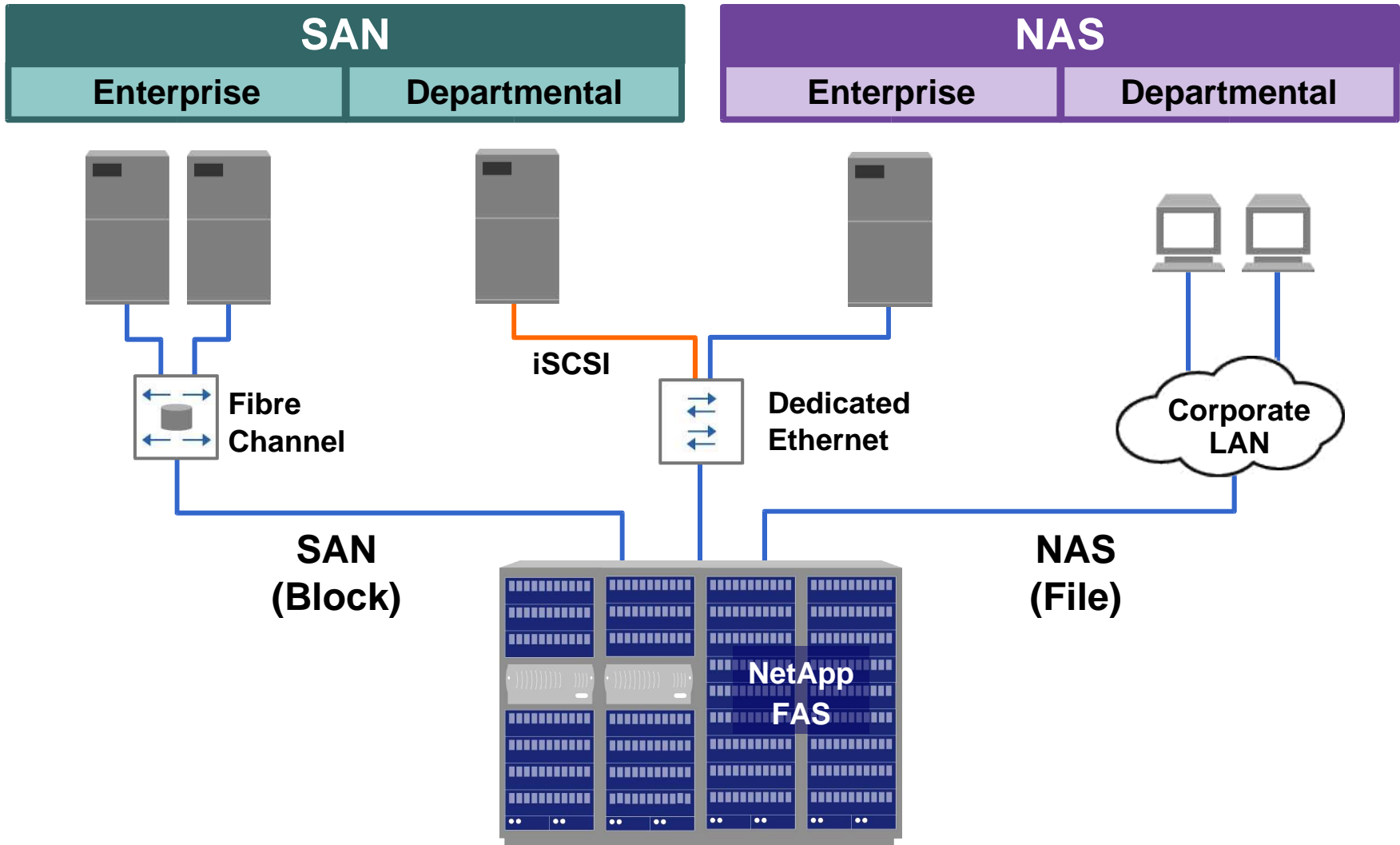


**What are you doing to save time?**



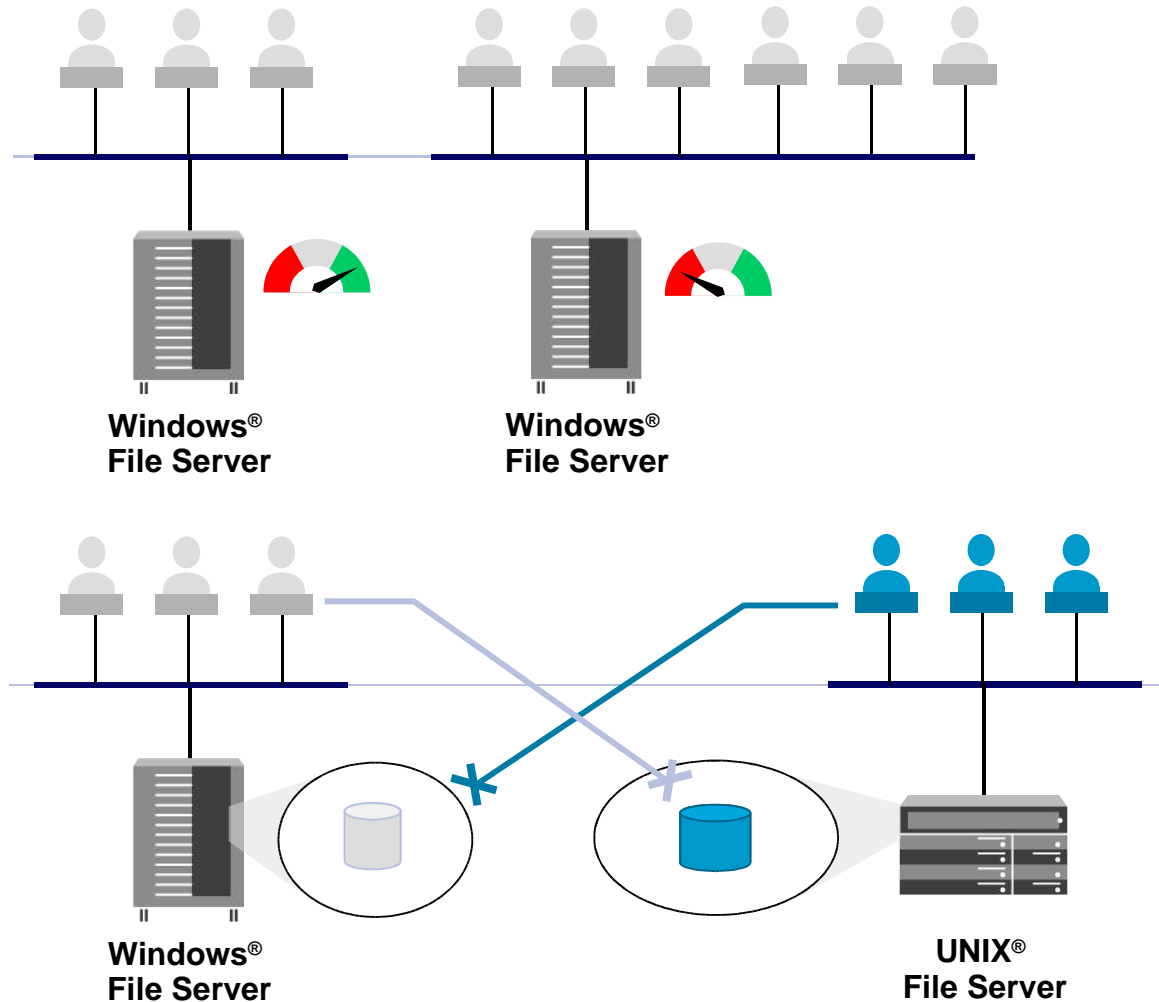
# Lösungsbeispiele zur TCO Senkung

# Networked Storage Topology



# Challenge: Limited Storage Scalability & Compatibility

## Primary Data Center



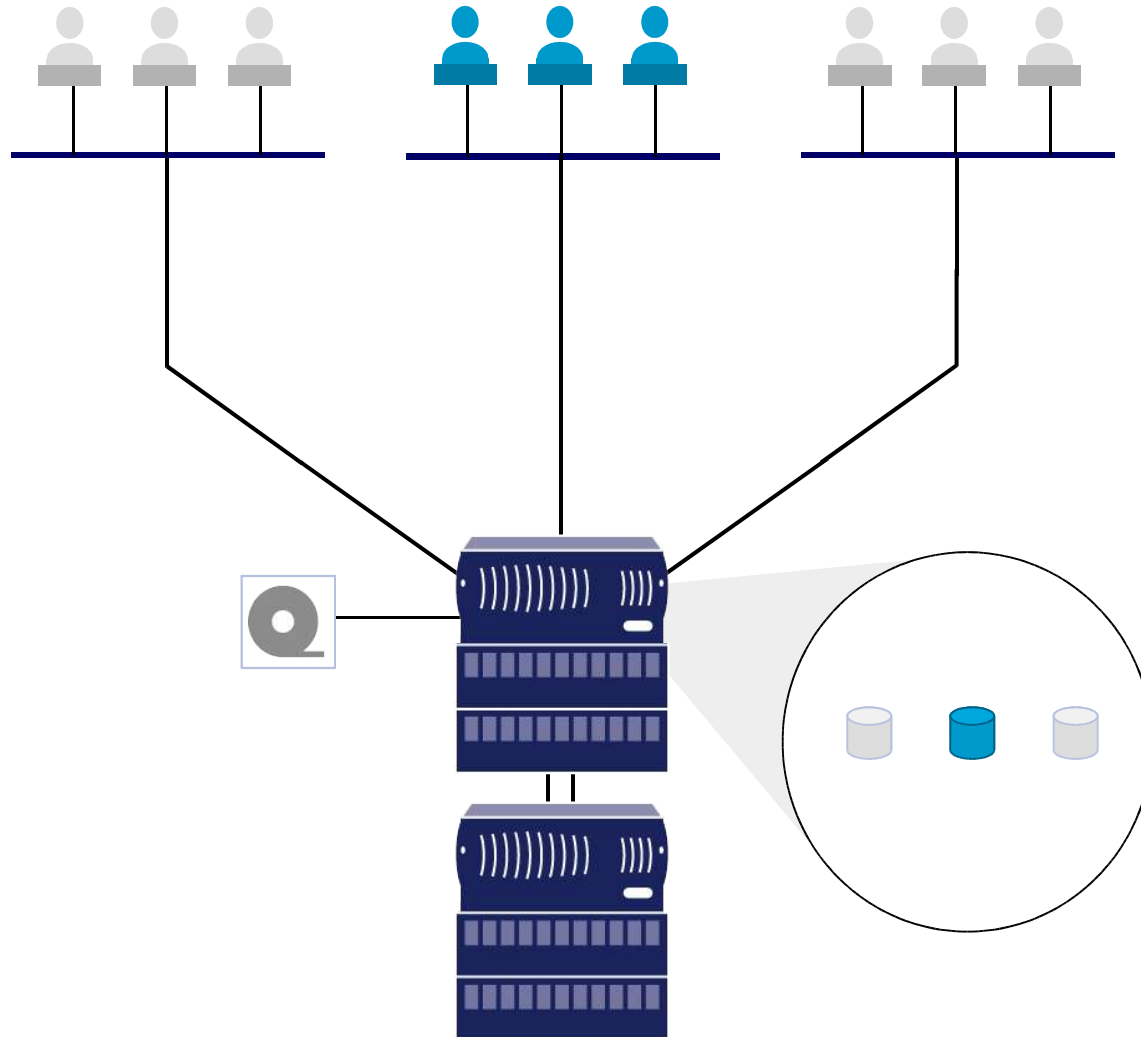
- ▶ Growth managed by adding servers
- ▶ Servers unevenly utilized
- ▶ User migration disruptive
- ▶ Difficult for UNIX® and Windows® users to securely share data

## Challenges:

- ▶ Under utilization
- ▶ Disruptive client migration
- ▶ Labor-intensive management
- ▶ Secure heterogeneous file sharing is difficult

# Solution: Large-Scale Consolidation

## Primary Data Center



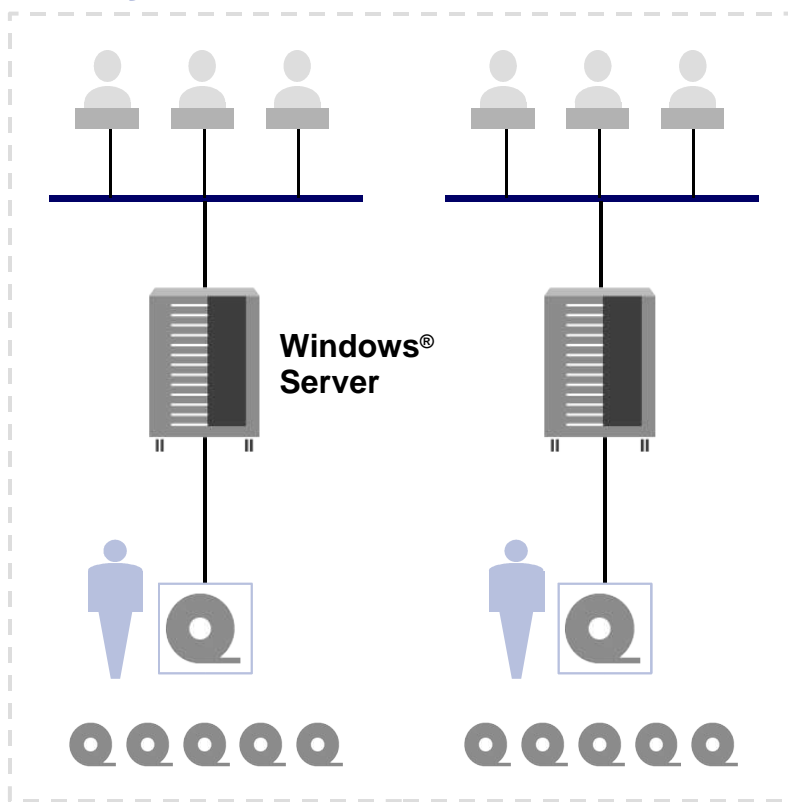
- ▶ Deploy unified storage appliance
- ▶ Consolidate user data
- ▶ Enable heterogeneous file sharing
  
- ▶ Centralize backup
- ▶ Add disks as needed
- ▶ Cluster for higher availability

### Benefits:

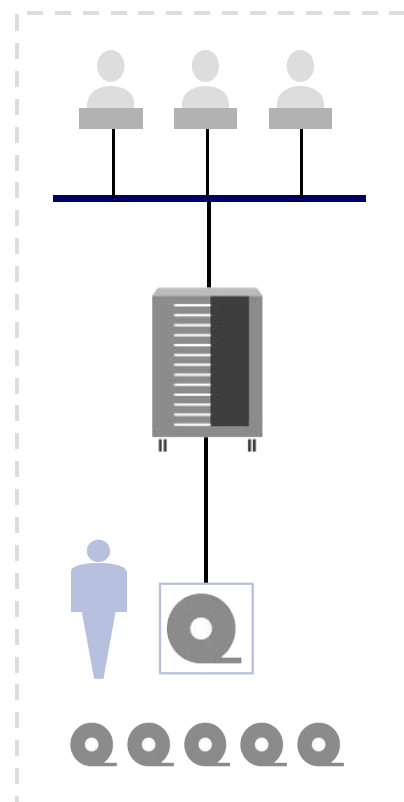
- ▶ Simplified management
- ▶ Improved server utilization
- ▶ Faster more reliable backup
- ▶ Enhanced availability

# Challenge: Difficult, Slow Backup Process

## Primary Data Center



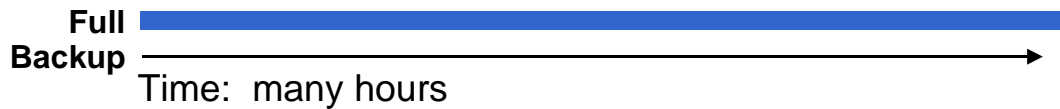
## Remote Offices



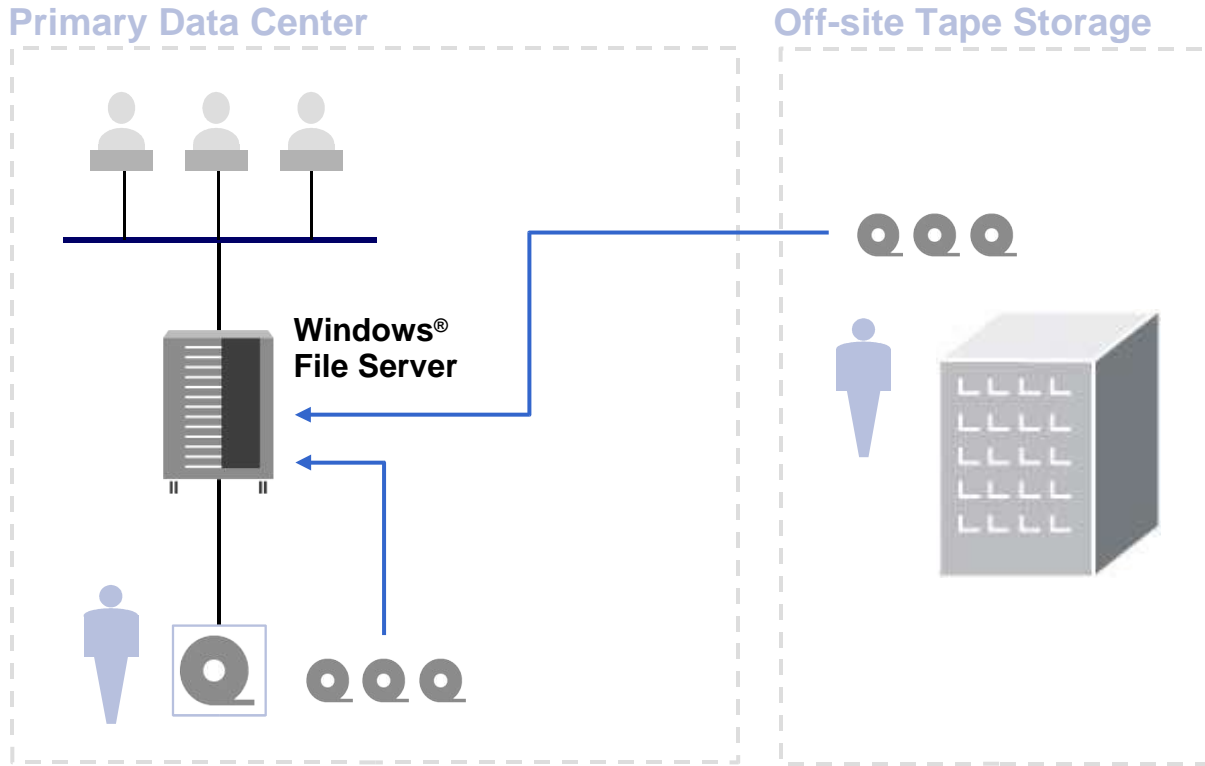
- ▶ Tape backups required for each server
- ▶ Tape management required for each server
- ▶ Backup takes a long time
- ▶ Duplicate tasks at remote offices

### Challenges:

- ▶ Costly administration
- ▶ Shrinking backup windows
- ▶ Increased data to backup
- ▶ Requires management at remote office



# Challenge: Difficult Restore Process



- ▶ Identify backup tapes
- ▶ Tapes may be at off-site tape storage location
- ▶ Load full and incremental backups
- ▶ Downtime for users who need to access the data

### Challenges:

- ▶ Slow, tedious process
- ▶ Downtime for users
- ▶ Risk of unrecoverable backup due to tape failure

Locate backup media

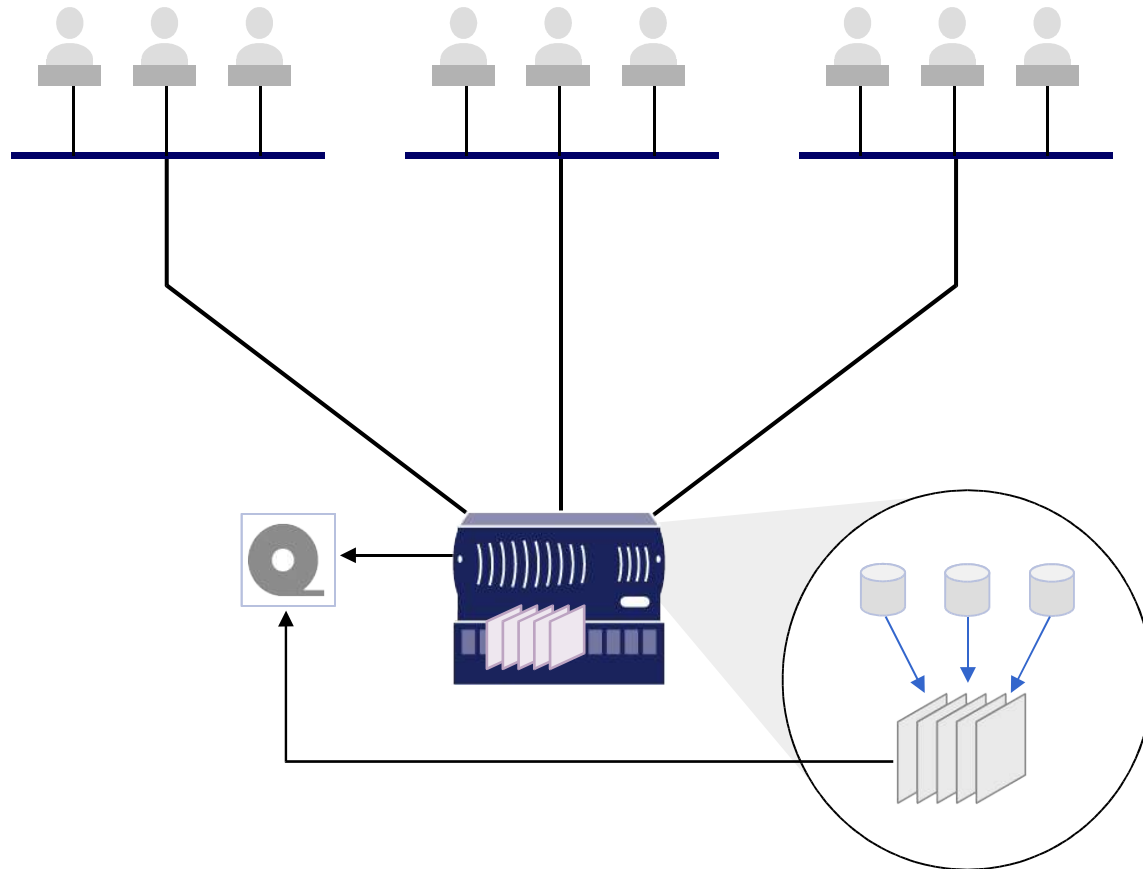
Load full backup

Load incremental backups

Time to recover: many hours

# Solution: Simplified Backup Process

## Primary Data Center



Snapshots ■

Time to backup: seconds

- ▶ Snapshots™ provide near-instantaneous backups
- ▶ Stored on filer for immediate access
- ▶ Snapshots can be backed up to tape
- ▶ Tape backup process centralized

### Benefits:

- ▶ Shortens backup windows to seconds
- ▶ Incurs no performance degradation running snapshot
- ▶ Minimize data loss
- ▶ Fewer tapes to manage

# Solution: Simplified Management

## DataFabric™ Manager



## Partner Solutions



- ▶ DFM provides single browser-based view to your entire NetApp® infrastructure
- ▶ Use alone or with third-party products
- ▶ Develop your own management tools

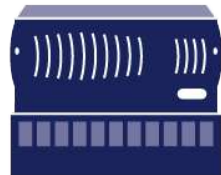
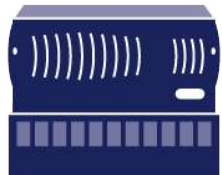
### Benefits:

- ▶ Simple, secure, centralized administration
- ▶ Unified view of data infrastructure
- ▶ Enhanced planning and storage provisioning
- ▶ Improved resource utilization

NetApp API

Standards-Based Interfaces

Manage ONTAP™



# Storage Consolidation

## *Windows File Servers, COLD storage*

### Jefferson Pilot Financial



**JEFFERSON PILOT**  
**FINANCIAL**

One of the largest life insurance companies with \$210 billion of life insurance in force

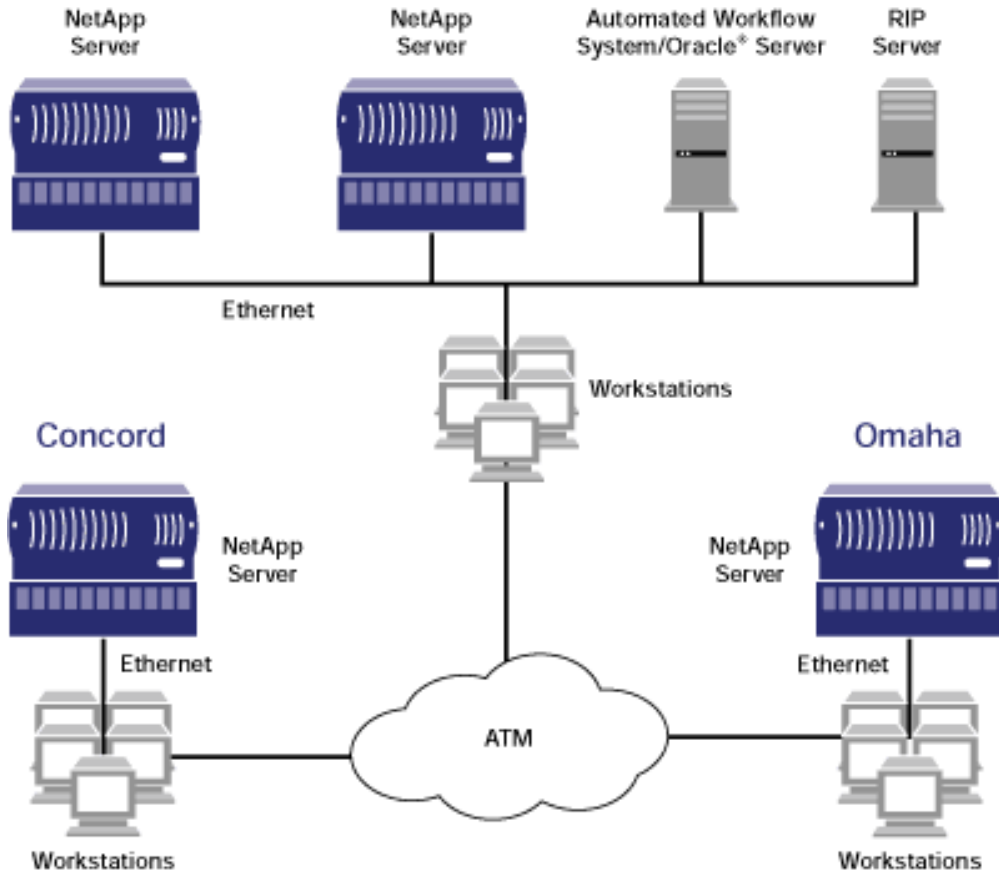
### Environment:

- ▶ 34 Windows file servers with direct attach disk at 3 office locations
- ▶ >11 TB of storage; growing 2 TB/ year
- ▶ COLD (computer output to laser disk) jukebox, storing PDF and TIFF images accessed by 2,300 staff

### Challenges:

- ▶ Reduce costs - Administrative overhead
- ▶ Unix and NT based users need to share data
- ▶ Scalability – ability to quickly add or redeploy terabytes of capacity

## Greensboro



## Solution

- ▶ Consolidated 34 Windows servers and COLD jukebox

## Benefits

- ▶ Redeployed all servers
- ▶ Reduced restore times to seconds
- ▶ Reduced costs 80%
- ▶ COLD retrieval reduced from 2 min to nearly instantaneous

## Forrester Research, Inc.

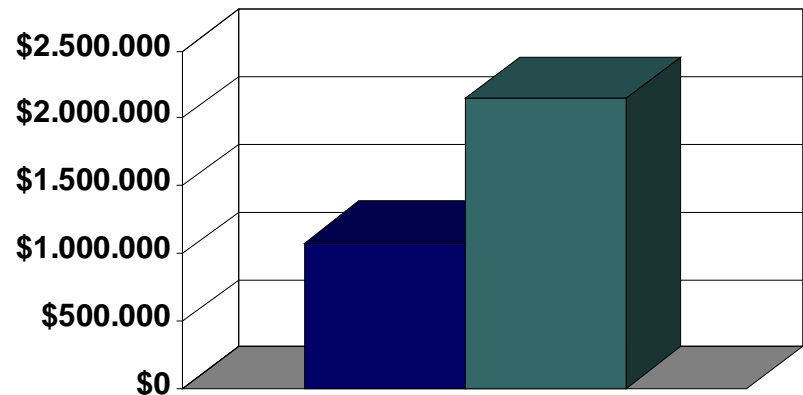
- In-depth interviews of 4 large NetApp Exchange customers

## Analyzed cost savings from:

- Eliminating file servers
- Cost avoidance as storage grows
- Simplifying backup and recovery
- Reduction in downtime
- Increased flexibility

**3 year savings of \$1.2 million**

## 3 year cost



**3 Year ROI of 103%**

**12 month payback**

Complete details in Forrester TEI Report  
[http://www.netapp.com/tech\\_library/ftp/analyst/ar1019.pdf](http://www.netapp.com/tech_library/ftp/analyst/ar1019.pdf)

- ▶ **Easy installation, migration, and management**
  - Appliance model, seamlessly integrates into existing environments
- ▶ **Scale seamlessly and non-disruptively**
  - Storage pool grows dynamically and without downtime
  - Global namespace reduces end user downtime
- ▶ **Simplified backup and restore**
  - Reduce tape management
  - Increase speed and accuracy of data recovery
- ▶ **Great performance, security, and reliability**
  - Operating system optimized for file serving
  - Robust solution, immune to Windows security vulnerabilities
- ▶ **Robust, cost effective disaster recovery**
  - Bandwidth efficient over WAN connections

**Reduced Overhead, Lower TCO**

# FlexFrame™ for mySAP Business Suite™

- die kostengünstige SAP Infrastrukturlösung



# Die Vorteile von FlexFrame im Überblick

● Zentrale Betriebssystemverwaltung  
(ein Update statt xUpdates für x Server)

● FlexFrame Event Services  
(unsparende Blade Server)

● Automatisch in der  
Migration

● Hohe Funktionalität bei minimalen  
Anforderungen



17.11.2004

Wien

**ORACLE**



NetworkAppliance®



**User Count:** **6272 Users**

**Average Response Time:** **1.073 seconds**

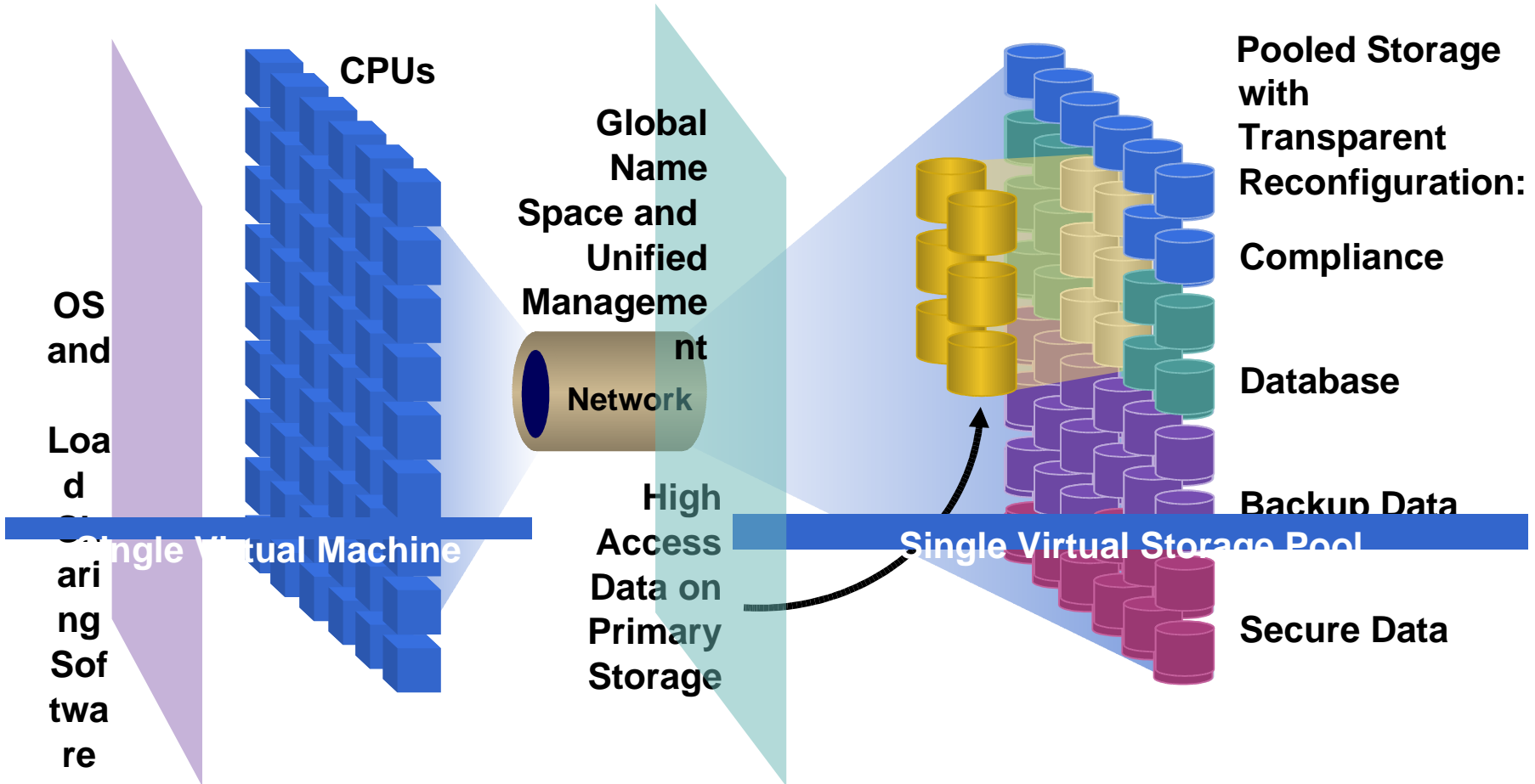
**90th Percentile Response Time:** **2.535 seconds**

Application Tier	Database Tier	Database Storage
16 x PRIMEPOWER 400N	1 x PRIMEPOWER 850	1 X NetApp F880
4 x SPARC64 IV CPU 400MHz / 600MHz (12/4 resp.) 8 MB Cache 8 GB Memory Solaris 8 OS	8 x SPARC64 IV CPU 810MHz 8 MB Cache 64 GB Memory Solaris 8 OS	
Disks: 2 x 36 GB FUJITSU- MAN3735MC-3703	Disks: 2 x 36 GB FUJITSU- MAN3367MC-3703	Disks: 42 x 36 GB X234_HJURD036F10 Ethernet & VI/IP Interface

**Complete details:**

<http://www.netapp.com/partners/docs/OASB-whitepaper.pdf>

# The Future: Storage for Grid Computing



- ▶ **Scalable everything: performance, availability, capacity, etc.**
- ▶ **Single view; single point of control**

# Österreichische Referenzkunden

DAIMLERCHRYSLER Battenfeld

Spritzgießtechnik



RENAULT

Tiroler Tageszeitung

ERICSSON

austriamicrosystems

kapsch >>>

MAGNA STEYR austro

CONTROL

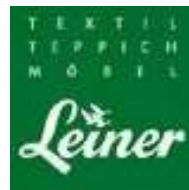
TU WIEN



ARZTE NÖ KAMMER



KNAPP LOGISTICS AUTOMATION



Österreichische Nationalbibliothek



FH JOANNEUM



PLAUT



SIEMENS



Raiffeisen



Es liegt nicht am Geld. Es liegt an der Bank.



Universität Linz



TUG

Technische Universität Graz Erzherzog-Johann-Universität



Capital Invest Kapitalanlagegesellschaft



Mobile

CONSTANTIA PRIVATBANK SAFTIENGESELLSCHAFT

EUNET

- ▶ **Bessere Auslastung bestehender Ressourcen bei gleichzeitigem Wachstum durch Innovationen von NetApp**

**= Senkung der TCO!**





**Storage Simplified**



# Backup Slides

# FlexFrame™ for mySAP Business Suite™

- die kostengünstige SAP Infrastrukturlösung

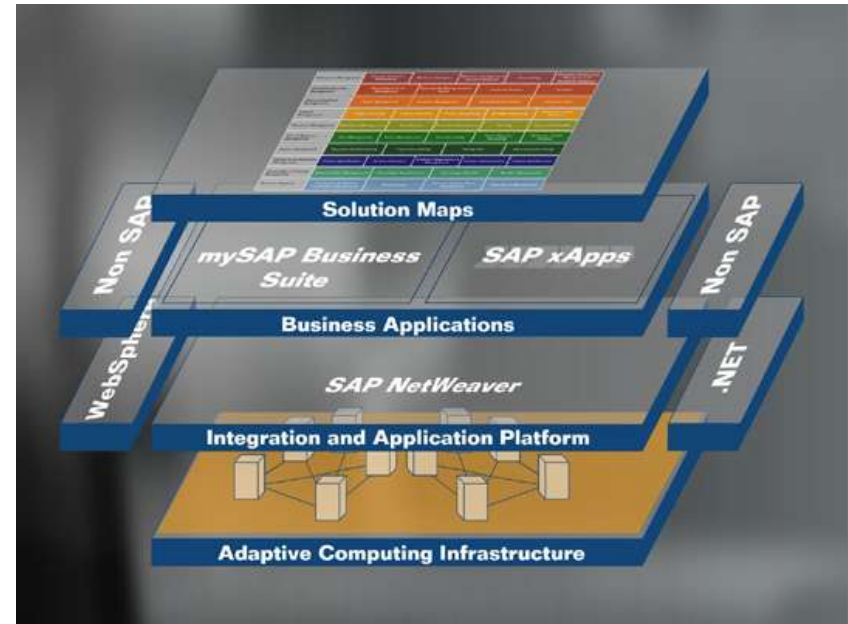


# Agenda

- ◆ Warum FlexFrame *for mySAP Business Suite™*?
- ◆ Was zeichnet FlexFrame *for mySAP Business Suite* aus?
  - Betriebssystem
    - └ SAP Services
    - └ Storage
    - └ Hochverfügbarkeit
- ◆ Zusammenfassung

# FlexFrame for mySAP Business Suite

- ◆ FlexFrame ist eine innovative Architektur um hochkomplexe, kostenintensive Infrastrukturen zu konsolidieren
- ◆ FlexFrame basiert auf SAP Adaptive Computing Infrastructure



# Die vier Hauptmerkmale von FlexFrame

Virtualisierung  
der  
SAP Services

Autonome  
Hoch-  
verfügbarkeits-  
Agenten

Network  
Appliance  
Storage

Gemeinsames  
Betriebs-  
system

# Das gemeinsame Betriebssystem

Virtualisierung  
der  
SAP Services

Autonome  
Hoch-  
verfügbarkeits-  
Agenten

Network  
Appliance  
Storage

**Gemeinsames  
Betriebs-  
system**

# Gemeinsames Betriebssystem



- ◆ **LINUX**
- ◆ **SOLARIS**

# Virtualisierung der SAP Services

Gemeinsames  
Betriebssystem

Autonome  
Hoch-  
verfügbarkeits-  
Agenten

Network  
Appliance  
Storage

**Virtualisierung  
der SAP  
Services**

# Virtualization of SAP Services

**Früher:** Ein dedizierter Server für ein SAP Modul /  
oder eine Abteilung

**Heute:** Jedes SAP Module läuft auf jedem Server  
innerhalb von Minuten



# Network Appliance Storage

Virtualisierung  
der  
SAP Services

Autonome  
Hoch-  
verfügbarkeits-  
Agenten

Gemeinsames  
Betriebssystem

**Network  
Appliance  
Storage**

# Network Appliance Storage

## ♦ Früher:

- ❑ Fest zugewiesene Speichereinheiten

## ♦ Heute:

- └ Flexibler Gebrauch von Storage Einheiten und lineare Skalierbarkeit



# Integrierte Hochverfügbarkeit

Gemeinsames  
Betriebssystem

Virtualisierung  
der  
SAP Services

Network  
Appliance  
Storage

**Autonome  
Hoch-  
verfügbarkeits-  
Agenten**





# Integrierte Hochverfügbarkeit

**Früher: Hohe Kosten für die Bereitstellung von Cluster-Konfigurationen**

**Heute: Jeder Server, ob neu oder bereits existent, ist nach dem booten automatisch hochverfügbar .**



# Die Vorteile von FlexFrame im Überblick

-  Zentrale Betriebssystemverwaltung  
(ein Update statt xUpdates für x Server)
-  Flexible Lastenverteilung der SAP Services  
(z.B. auf raumsparende Blade Server)
-  Jeder neue Server ist automatisch in der  
Hochverfügbarkeitskonfiguration
-  Hohe Funktionalität bei minimalen  
Administrationsaufwand  
mit NAS Storage

