COMPUTERWORLD SNIA

SNW

Driving Innovation Through the Information Infrastructure

SPRING 2011

Storage Virtualization Protects 'Explosive' Data for Manufacturers

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Austin Powder Company

- Manufacture industrial explosives
  - Mining
  - Quarrying
  - Seismic
  - Construction
- Provide blasting services
- Founded in 1833
- 81 Locations in North America
- Austin International – 27 countries

Austin Powder IT

- 1 Primary data center
  - 3 Small remote data
- 67 Networked locations
- Support over 1200 employees
- 10 Full time IT staff
  - 3 iSeries Operations & Development
  - 2 Business Intelligence
  - 2 PC Helpdesk
  - 2 PC Operations
  - 1 Network Operations
- Historically value driven

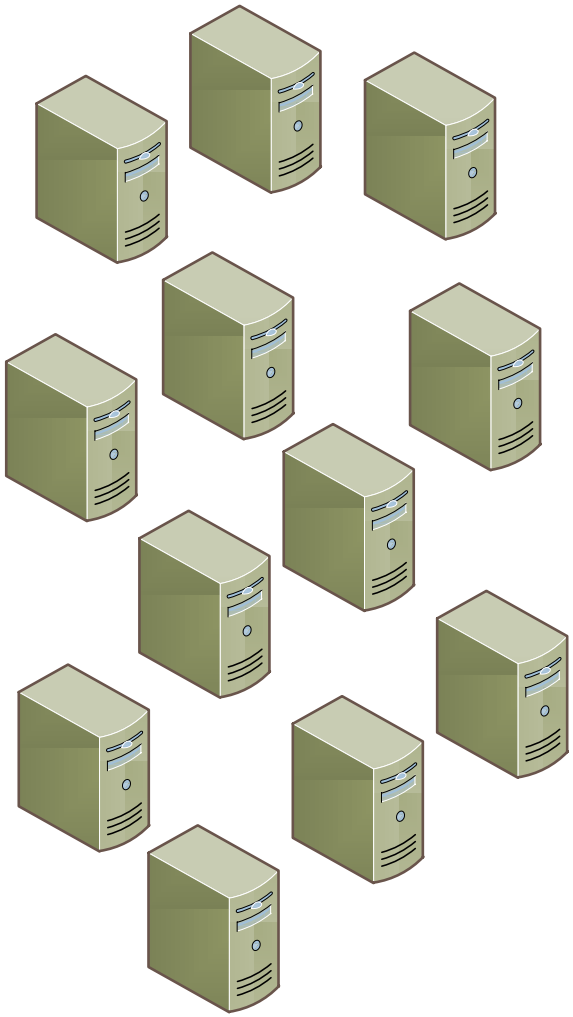
Technology Environment

- Hardware
  - Servers: HP Proliant DL 380, IBM iSeries
  - PC/Laptop: Lenovo
  - Network: Cisco
  - Storage: NexSAN, DAS
- Operating Systems
  - Servers: Windows 2003, 2008 R2
  - PC/Laptop: Windows XP
  - IBM: i5/OS
- Virtualization
  - Server: Hyper-V
  - Storage: FalconStor

Cool Austin Stuff

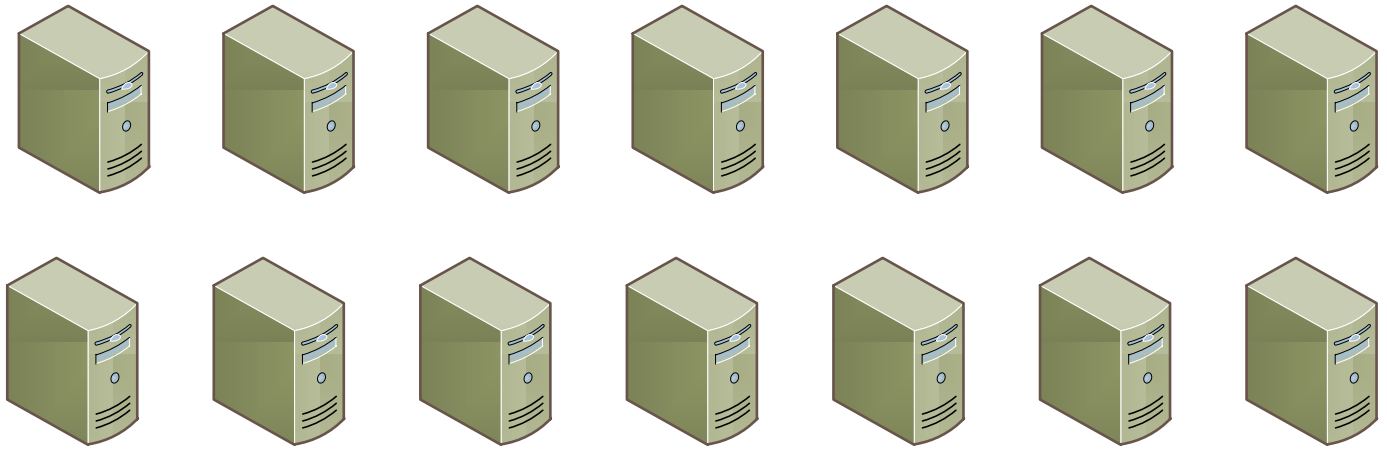
- High tech leader in the explosives industry
  - EBR
  - QED
  - Business Analytics
- Best explosives engineers in the world
- Work with law enforcement
- No, we don’t have a company store
- But…we do blow stuff up.

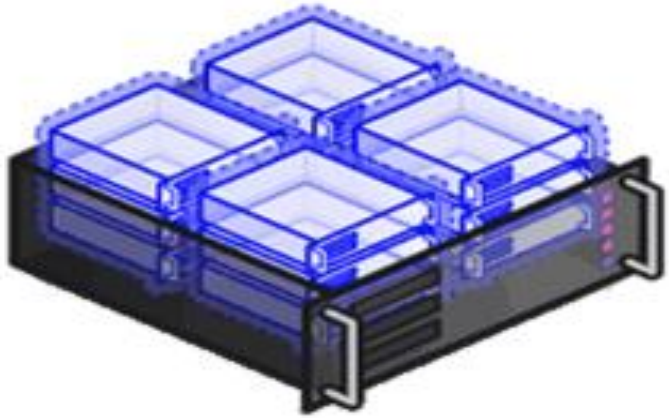
Austin's Infrastructure Pre-2008



- Slow server deployments
  - Manual builds
  - Dedicated hardware
- Enormous resource waste
  - Isolated islands of resources
- Difficult backups
  - Front door backups
- Rigid hardware lock-in
- Painful disaster recovery

Austin's Infrastructure 2008-2009

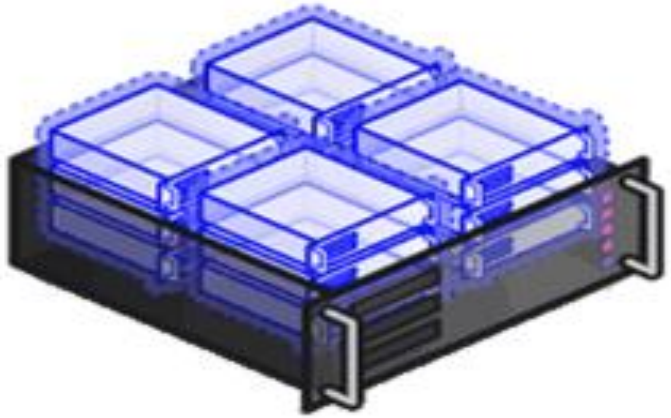




Virtual Server Host

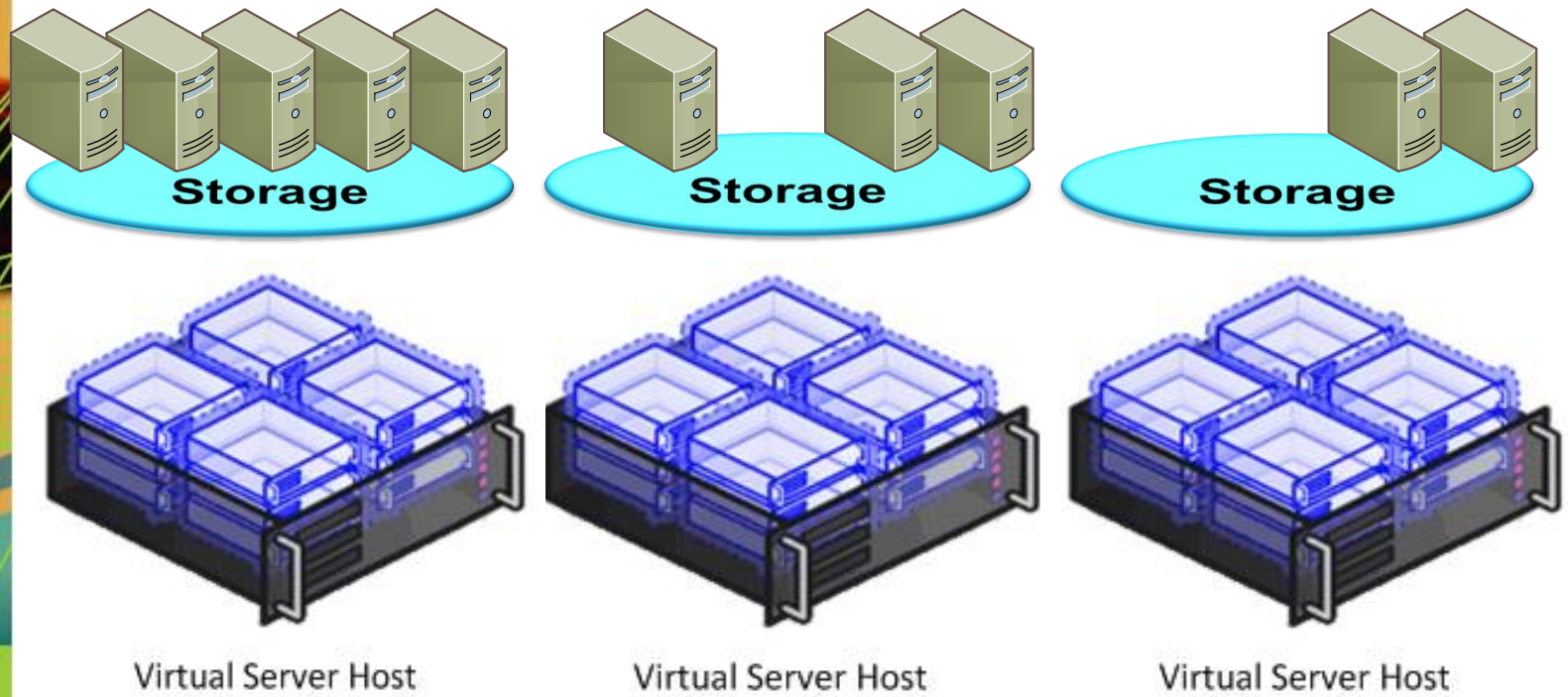
Austin's Infrastructure 2008-2009

- Reduced physical server count 70%
- Virtualized 90% of existing servers
- Achieved an 8:1 consolidation ratio
- Still using front door backups
- VM mobility crippled by DAS



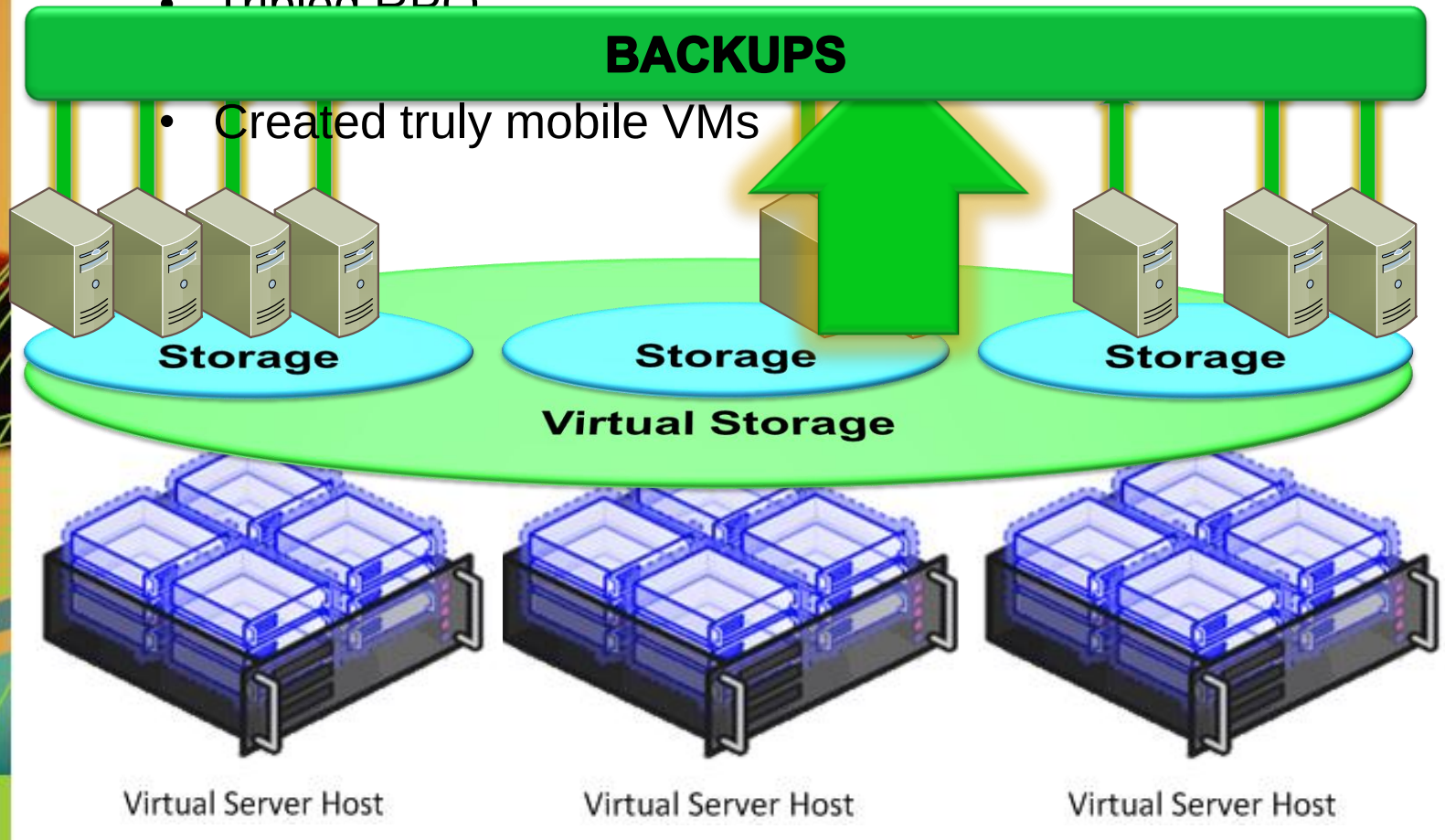
Virtual Server Host

Austin's Infrastructure 2009-2010



Austin's Infrastructure 2009-2010

- Nearly doubled consolidation ratios on same hardware
- Recent server upgrades make ratios of 50+ realistic
- Tripled RPO
- Created truly mobile VMs



A Week In The Life

Real World Examples & How To Solve Them

Before & After Virtualization

DISCLAIMER

All characters and events appearing in this work are fictitious. Any resemblance to real persons or events, living or dead, is purely coincidental.

The names have been changed to protect the innocent

Monday Mania

Joe Awesome, the accounting manager just informed you that he has purchased the SuperAmazing^{tm} software package!

It only cost 3x your yearly salary but he is sure it will save his department at least double that in just the first year!

Before he leaves he informs you that deployment starts tomorrow and they need a dedicated server.

No problem. Right?

Server Deployment

The Old Way

Research Hardware

Gather Quotes

Place Order

Wait For Shipping

Build Server

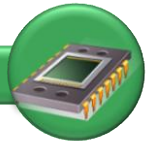
Configure & Deploy

Time: 1-2 Weeks

The New Way

Provision Storage

Provision Server



Configure & Deploy

Practice Putting

Time: About 1 Hour

Tuesday Tragedy

Johnny Wonderboy, your lead web developer stops by your office in a panic. He tells you that the entire company intranet is down and it must be some kind of server problem.

You quickly investigate and discover he attempted a major system upgrade directly to the live systems without any testing!

The server is broken beyond repair and needs to be rebuilt from backup.

Full Server Restores

The Old Way

Find Hardware

Locate & Load Tapes

Pre-Load System

Restore From Tape

Make It Work…

Deploy

Time: Hours or Days

The New Way

Shutdown VM

Revert Storage

Start VM

Feel The Love

Time: Minutes

Wednesday Wishes

Joan Perfect the application administrator of one of your most critical business systems wants to deploy a major system upgrade.

Unlike some other administrators she would like to thoroughly test this upgrade before applying it to the live production systems.

We must encourage this behavior!

Creating Test Environments

The Old Way

- Acquire Budget
- Duplicate Hardware
- Build Server
- Recreate Systems
- Design Separation
- Keep Updated

Time: 1-2 Weeks

The New Way

- Mount Snapshot
- Import VM
- Change vSwitch
- Empower Users!

Time: Minutes

Thursday Tribulations

Joseph Terrific, the plant manager at your largest manufacturing plant just realized that last Friday he deleted all of his critical files on the local file server.

He needs them back before Friday morning or heads will roll.

Instead of asking him why it took him almost a week to notice you jump into action!

Remote Data Recovery

The Old Way

Hope It Didn't Break

Locate & Load Tapes

Restore Locally

Copy To Remote

Verify With User

Escape Unscathed?

Success: 50%

The New Way

Mount Snapshot

Copy To Remote

Verify With User

Relax

Success: 99.9%

Friday Fright

You come in to work on a beautiful Friday morning. But as soon as you get to your desk you find three managers waiting for you…

They quickly inform you that the server room at your most critical remote manufacturing facility flooded and destroyed everything.

They need that server back up and running before the production lines can start!

Hundreds of people are out of work until you can get that server back up!

Remote Server Disaster Recovery

The Old Way

Find File Backups

Find Hardware

Rebuild From Scratch

Attempt To Restore

Ship Server

Don’t Get Fired!

Time: 1+ Weeks

The New Way

Start Local VMs

Repoint Network

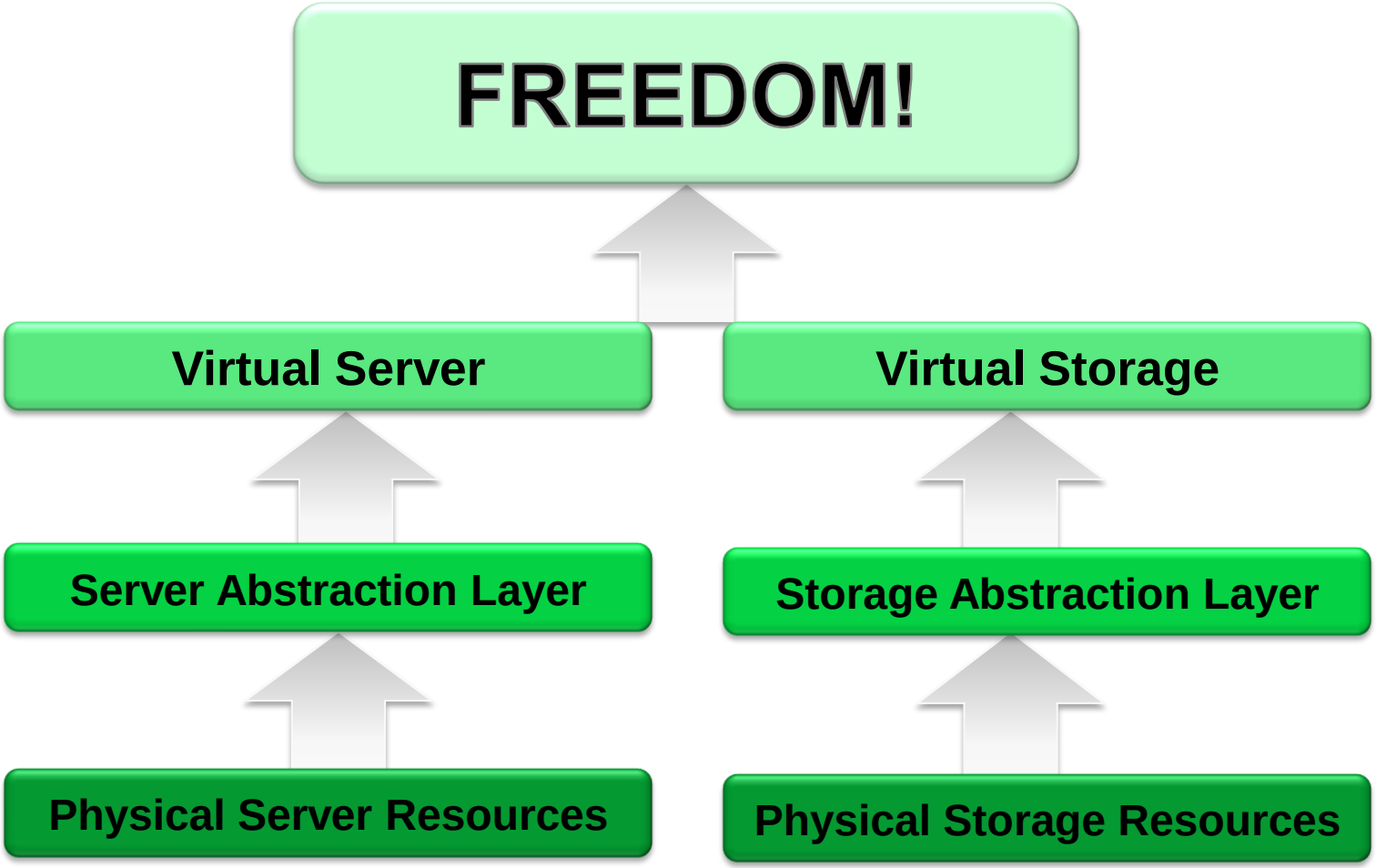
Impress Everyone

Get A Promotion

Time: About 1 Hour

What Is Virtualization?

Virtualization = Resource Abstraction



Key Benefits of Virtualization

- Reduce Cost
  - Flexible hardware decisions
  - Increase utilization & reduce waste
  - Reduce licensing
  - Reduce administrative overhead
  - Ease support of legacy applications
- Improve Services
  - Reduce server deployment time
  - Simplify backup & restore
  - Increase availability & scalability
  - Dramatically simplify disaster recovery

Questions