



**Data Domain™**

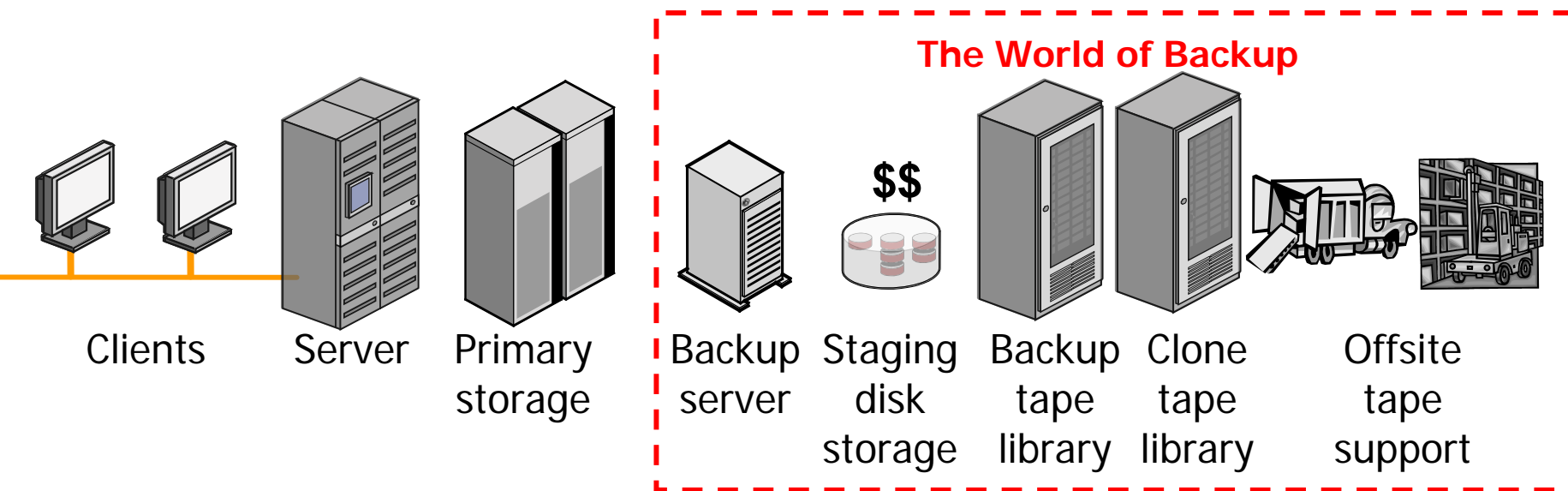
# **Emerging Technology: DD200 Restorer**

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# Recovery/Backup Challenges



- **Data growth rate is about 70%/year**

- <http://www.sims.berkeley.edu/research/projects/how-much-info-2003/>

- **Challenges**

- Recovery must be fast and correct (backup is for recovery)
  - Backup must be high throughput (backup window time limit)
  - Few CPU cycles are available for compression
  - Backward compatible with old data and software

# Introducing the Data Domain DD200 Restorer

Features	Benefits
Disk Based File Server	Reliable, Simple, Fast
20X Compression	Cost of Tape Automation
Data Invulnerability Architecture	Proactive Recovery Testing
Interface Standard Backup SW	Easy To Integrate

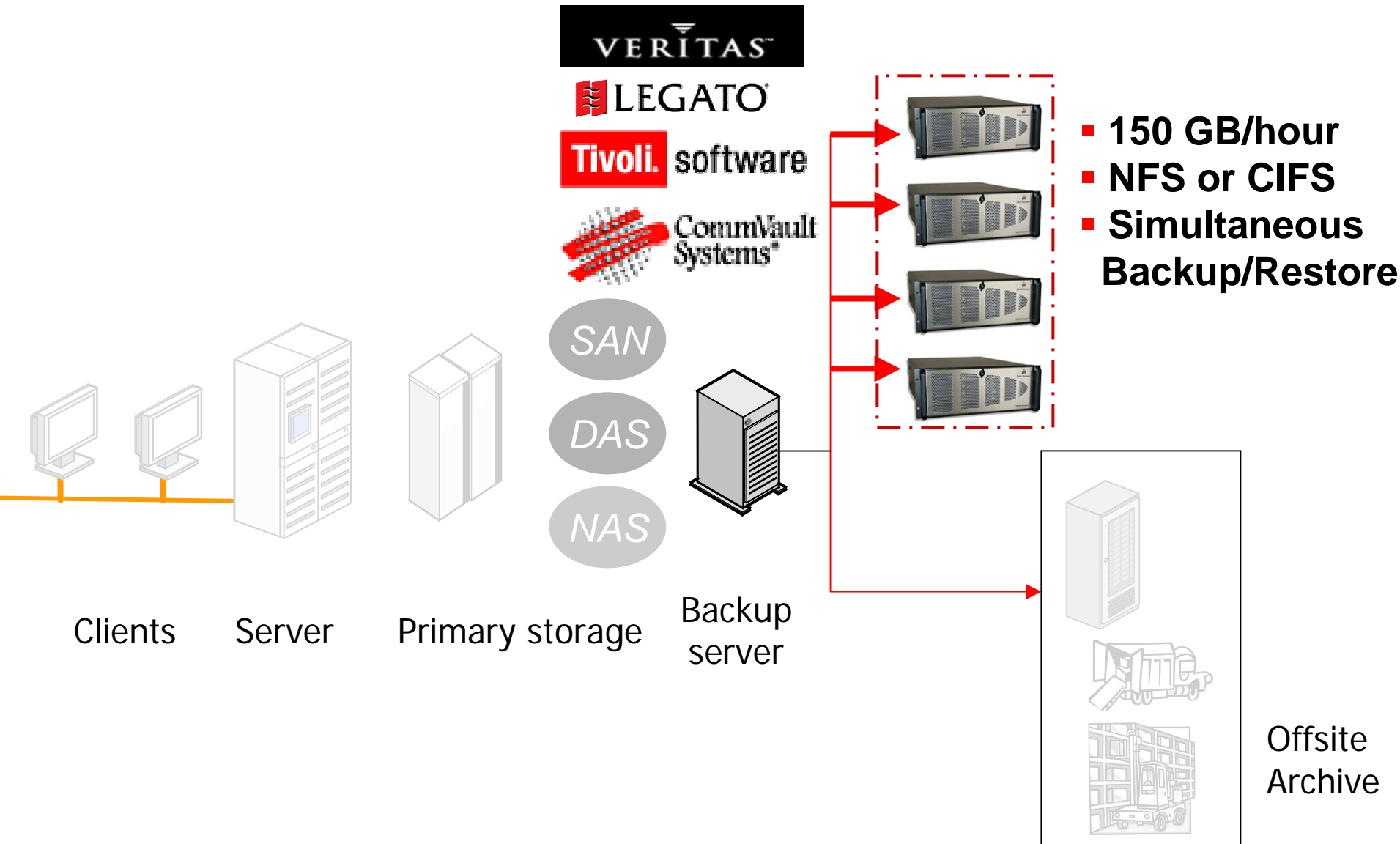


# What's In A DD200 Restorer System

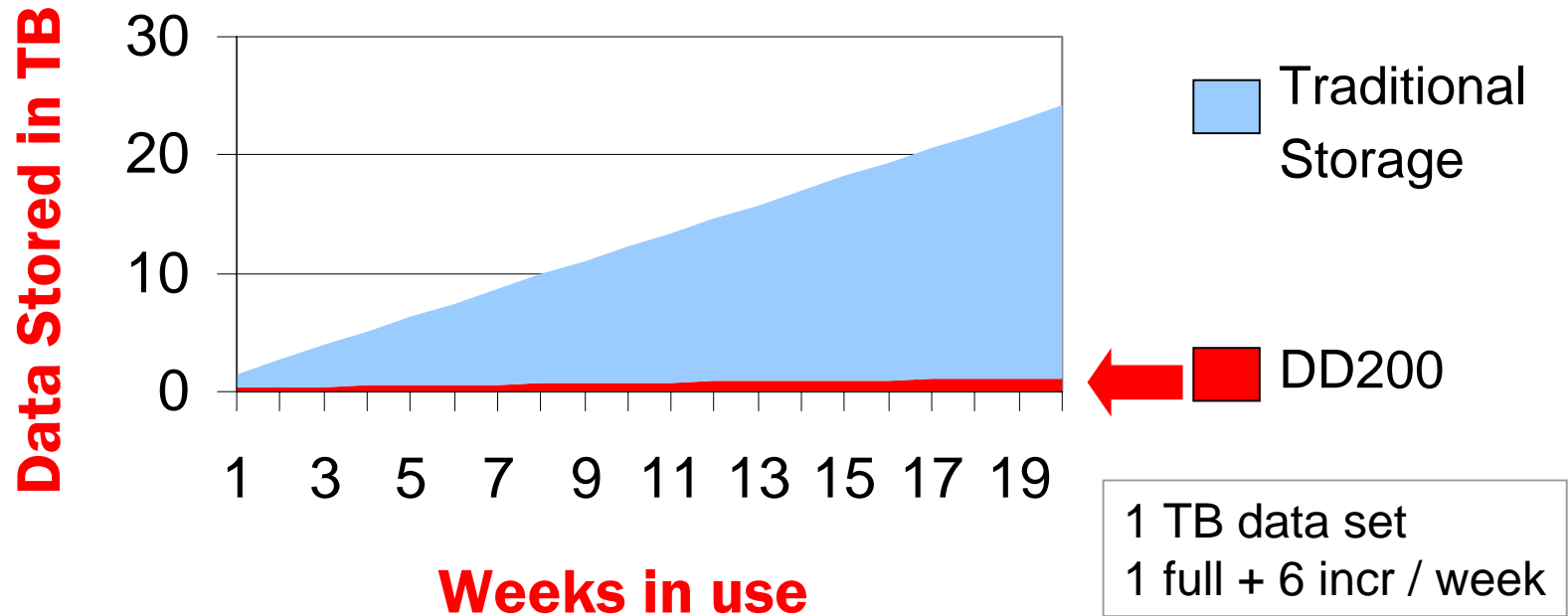
- **A file system designed for backup data**
  - NFS/CIFS/NDMP interfaces
  - High-throughput
  - Proactive data verification
  - A combined global and local compression
- **DD200 System Enclosure**
  - 4U, 16 bay, mirrored ATA disks (two spares)
  - Gigabit Ethernet (triple optional)
  - NVRAM for fast commit persistence
  - N+1 power supply
- **Target 1-2 TB Primary Data to be protected**
  - Up to 5 months retention
  - Up to 23 TB virtual capacity
  - \$2.50/GB at 20x Compression



# DD200 Plugs Into Existing Backup Infrastructure

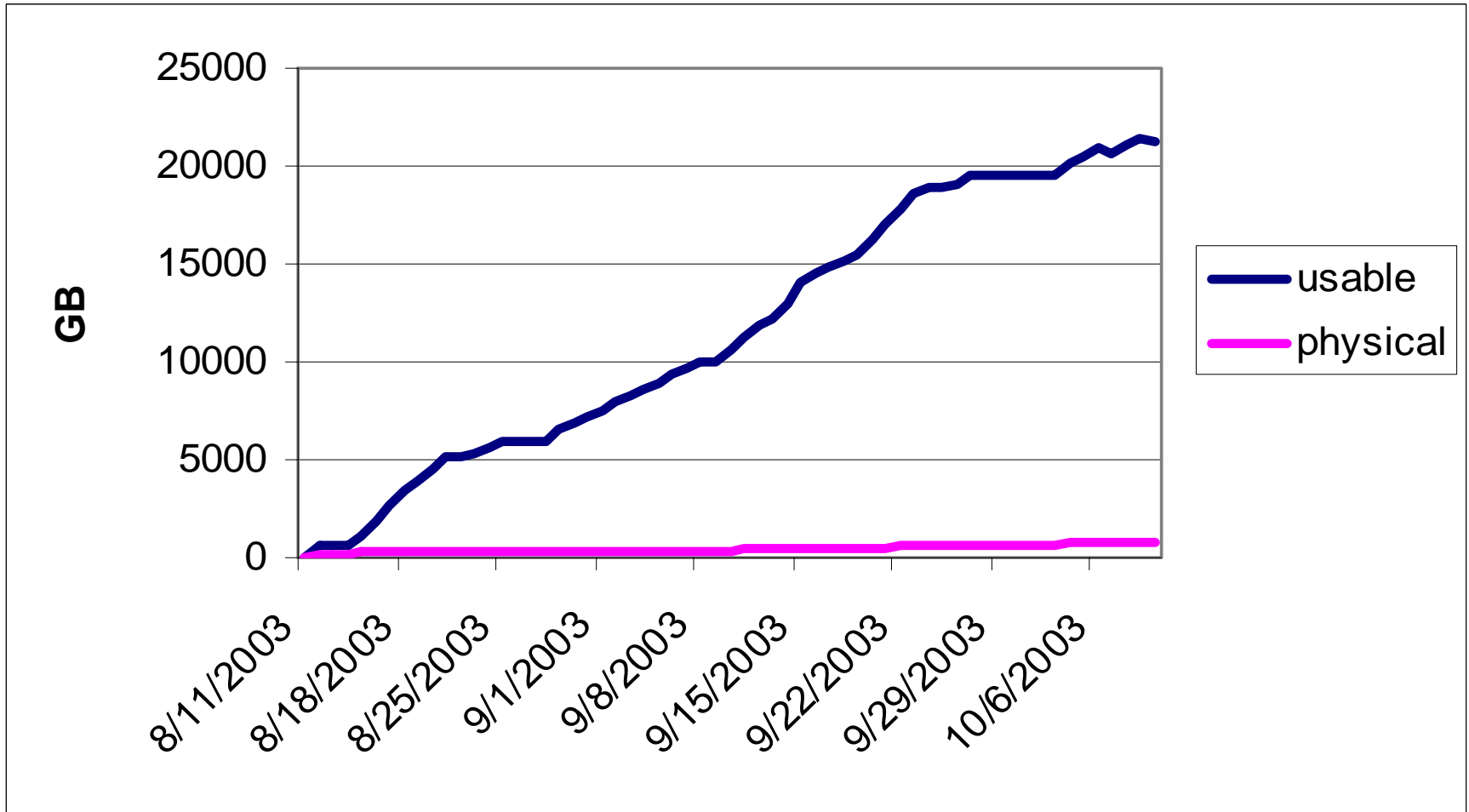


# DD200 Restorer Field-Test Results



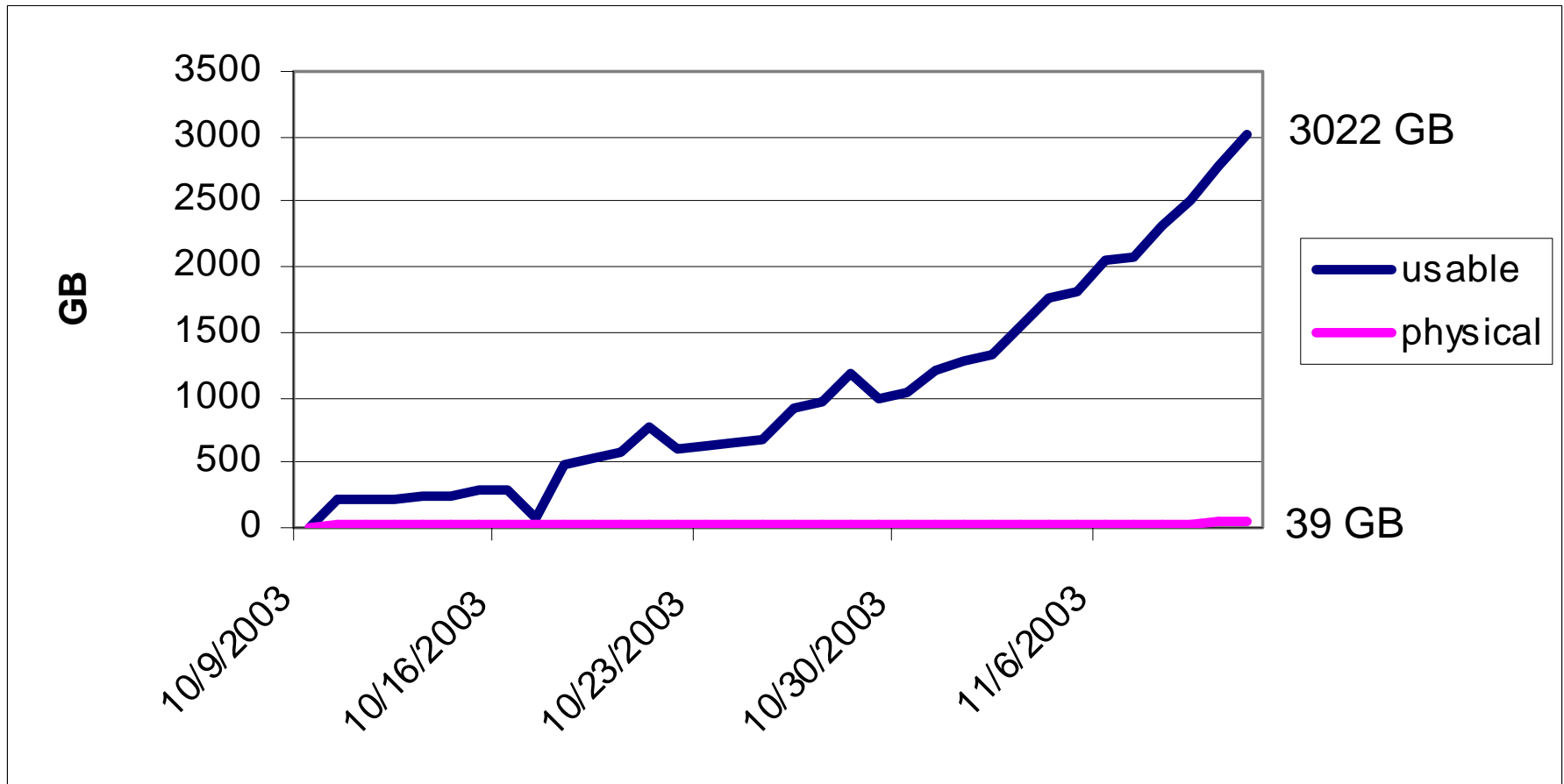
- First full backup: 3-4x compression
- File-level incrementals: 6-7x
- **Subsequent full backups: 50-60x**
- Aggregate with Weekly Fulls, Daily Incrementals (4 months): **20x**

# Customer Compression Results: Software Company



- 25x Compression
- Peoplesoft and Oracle Data + Applications
- Fulls + Incrementals

# Customer Compression Results: Petrochemical Company



- 77x Compression
- Exchange, Home Directories, Windows Apps & DB's
- Fulls Only



# What We Have Learned

## ■ What matters to customers

- Minimal aggregate storage space needed for your retention period
- End-to-end verification
- Performance
  - Meet recovery speed objectives
  - Meet backup speed objectives
  - Meet the speed for cloning tapes?
- No performance impact to existing clients and application servers
- No need to change backup software

## ■ What turns customers off

- High cost
- Requiring use of new backup software
- Low throughput
- Changing remote cloning tapes completely

# Summary

## ■ Data Domain's DD200

- A file server with standard interfaces (NFS/CIFS/NDMP)
- Proactive data verification
- High-throughput built-in compression

## ■ Our experience with this approach

- Achieve 150GB/hour for both recovery and backup
- 20X compression for daily incremental and weekly full backup procedure for four months (data from standard backup software)
- Proactive verification and invulnerable features

## ■ White paper can be obtained at

[www.datadomain.com](http://www.datadomain.com)

