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# NetApp Storage Solution for Citrix XenDesktop



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# Agenda

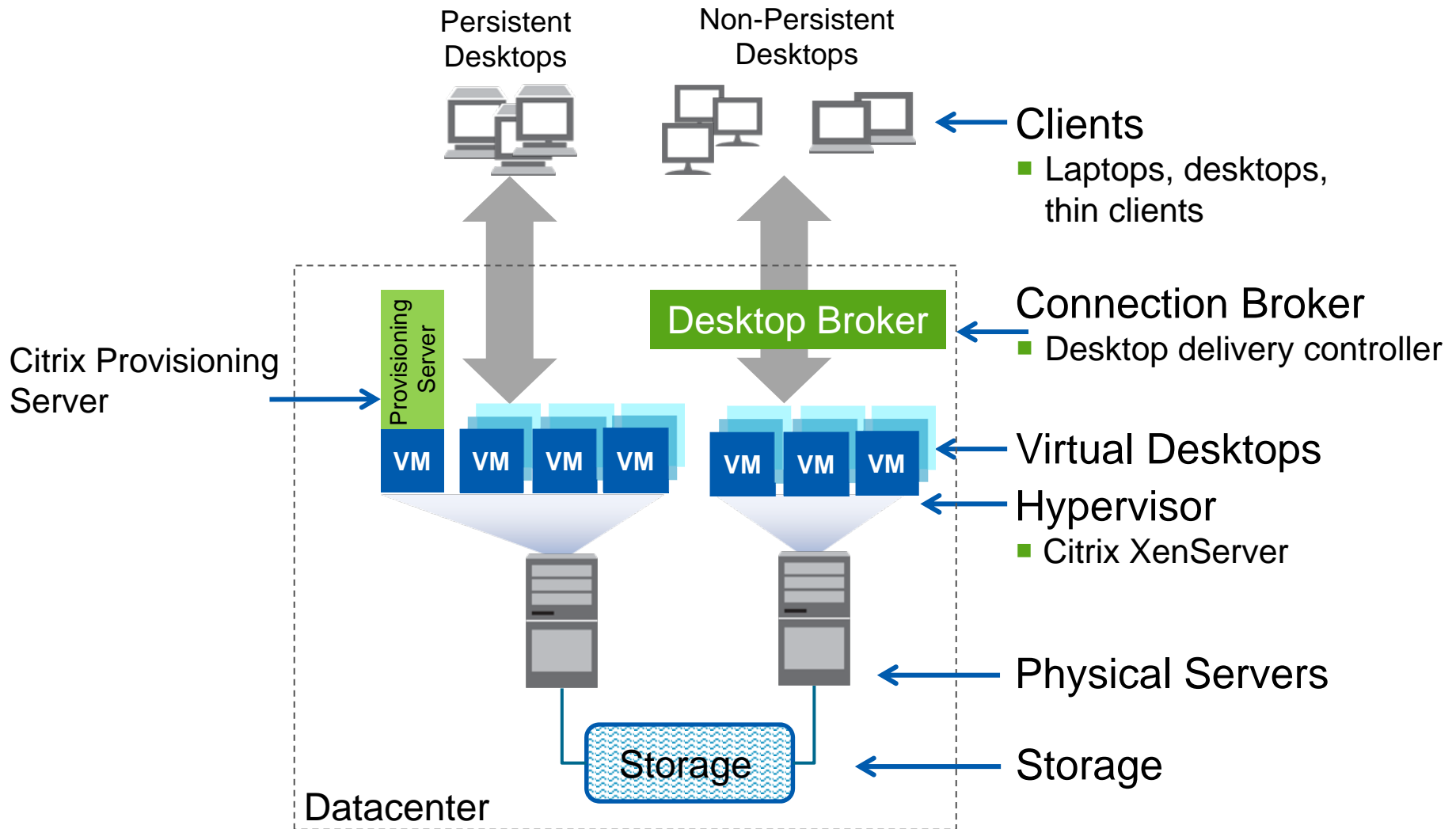
- Virtual Desktop Solution Overview
- Citrix XenDesktop
- The Storage Challenges
- NetApp solution and Benefits



# Promise of Virtual Desktops

- Simplify desktop management
  - Reduce the intensive technical support
  - Reduce the number of PC images
- Lower costs
  - Address staffing costs and data recovery costs
- Reduce data loss
  - Backup is a challenge if it gets done at all
- Improve security and compliance
  - Control data portability
  - Centralize the continuous security upgrades and patches

# Basics of XenDesktop Architecture

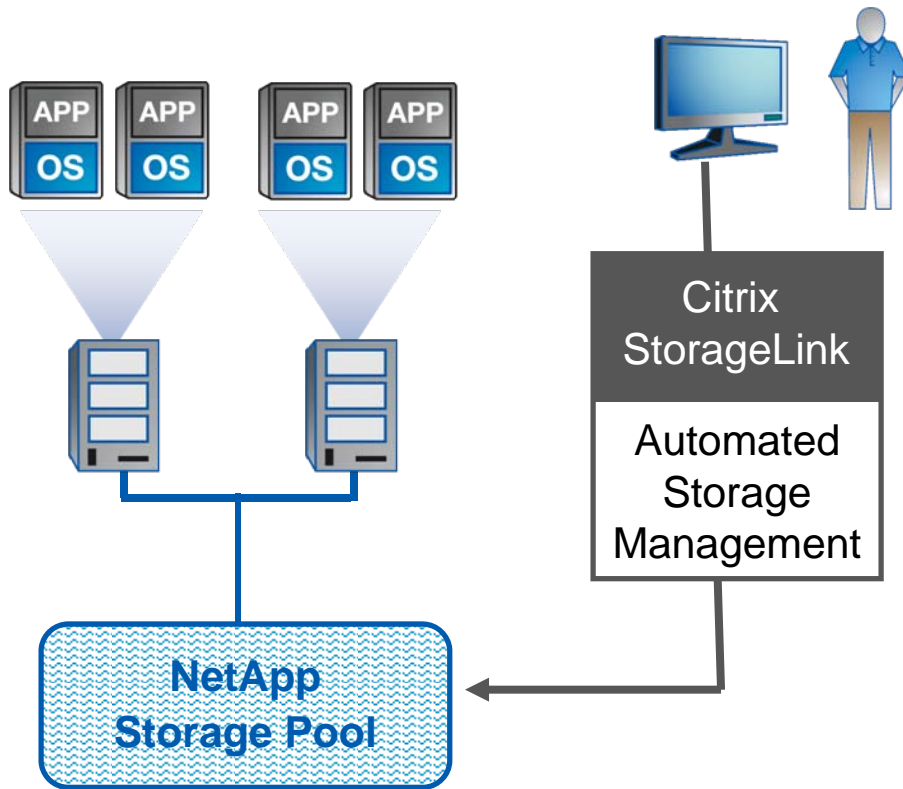




# The Storage Challenges

- Storage costs increase
  - If 500 servers take a lot of space, how about 10,000 desktops
- High availability is critical
  - Any failure can bring 1000's of users down
  - Performance bottlenecks -1000's of systems boot at same time
- Lengthy mass deployment timeframes
  - Need to provision VMs and storage for hundreds of desktops at a time
- Storage is central to security and control of user data
  - Require regular backups, data retention and immutable storage

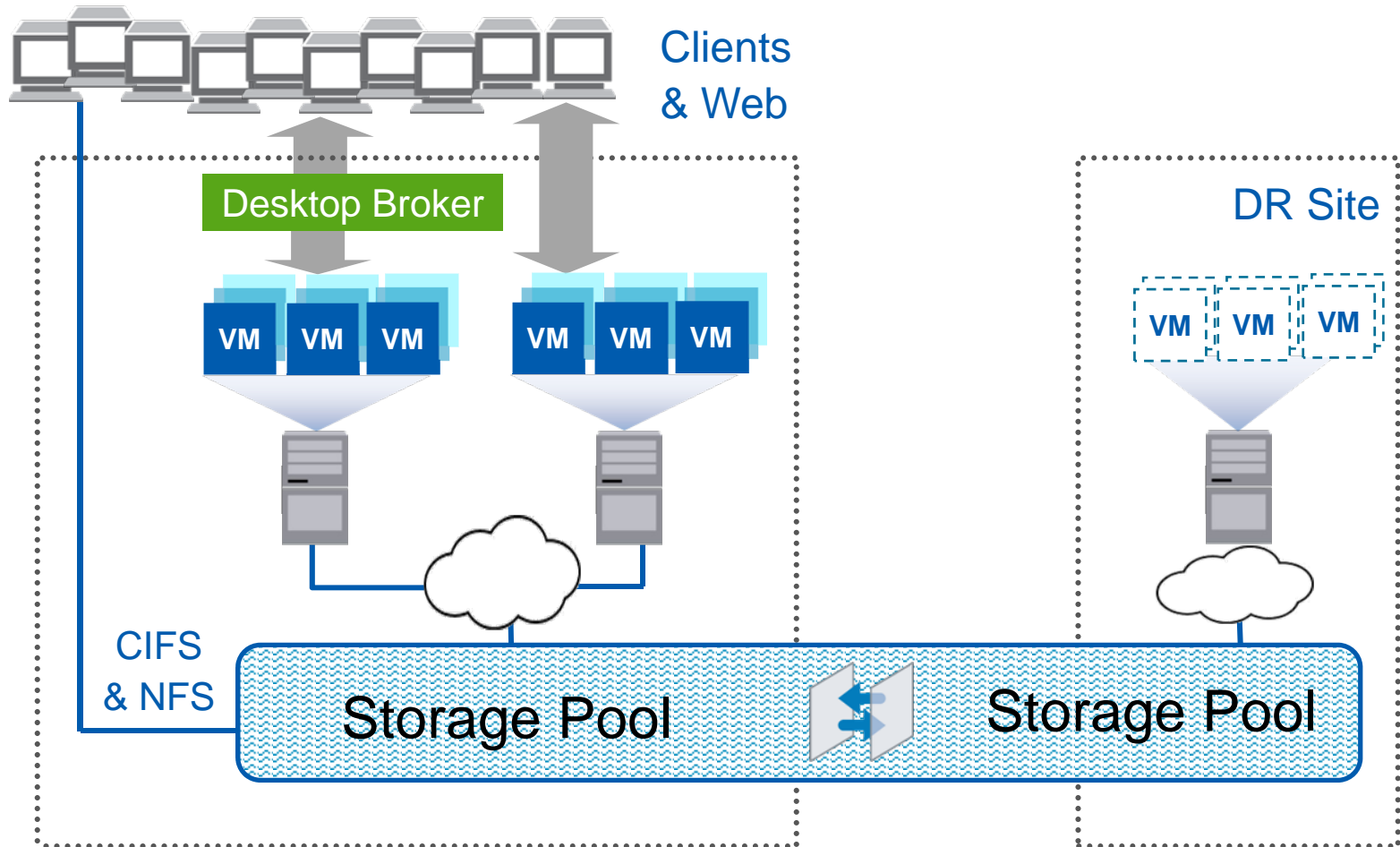
# NetApp Integration with Citrix Essentials



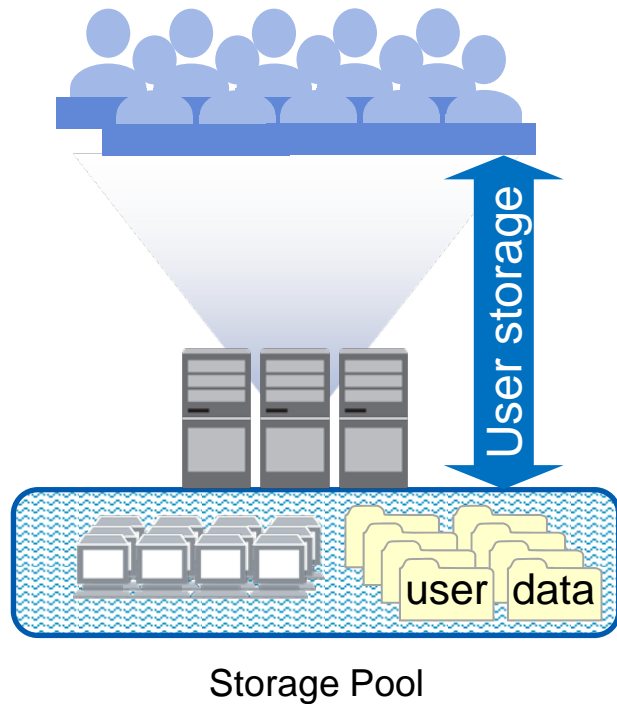
- Manage server and storage together
  - Single pane-of-glass management
  - XenServer or Hyper-V
- Empower server admins to:
  - Provision storage
  - Perform backups
  - Recovery data
  - Deduplicate data
  - Clone virtual machines

# The Evolution of the Desktop

A common storage pool for virtual desktop and end-user storage



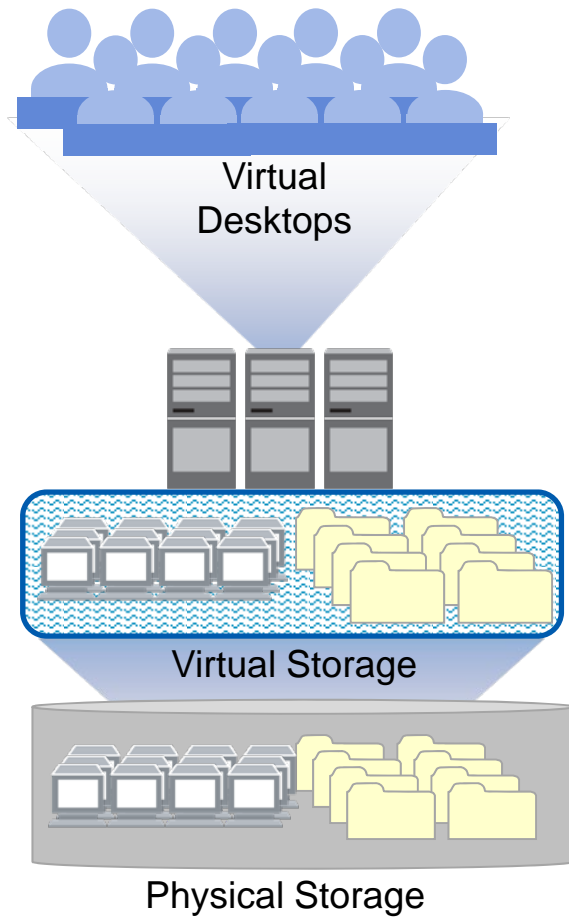
# Agile Infrastructure for Virtual Desktops



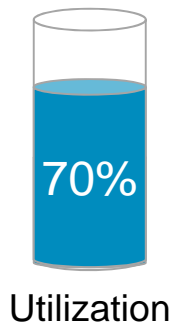
- Unified storage for virtual desktops
  - SAN for desktops, NAS for user data
  - Persistent and non-persistent desktops
- Provision 1000's of VMs in minutes
  - Instantaneous clones
- Scale capacity in real-time
  - Support 1000's of desktops per system
- Quickly add new capabilities
  - Boot acceleration, backup, DR, compliant storage, archival

*Meet any virtual desktop requirement with a single system*

# Cost Effective Desktop Storage

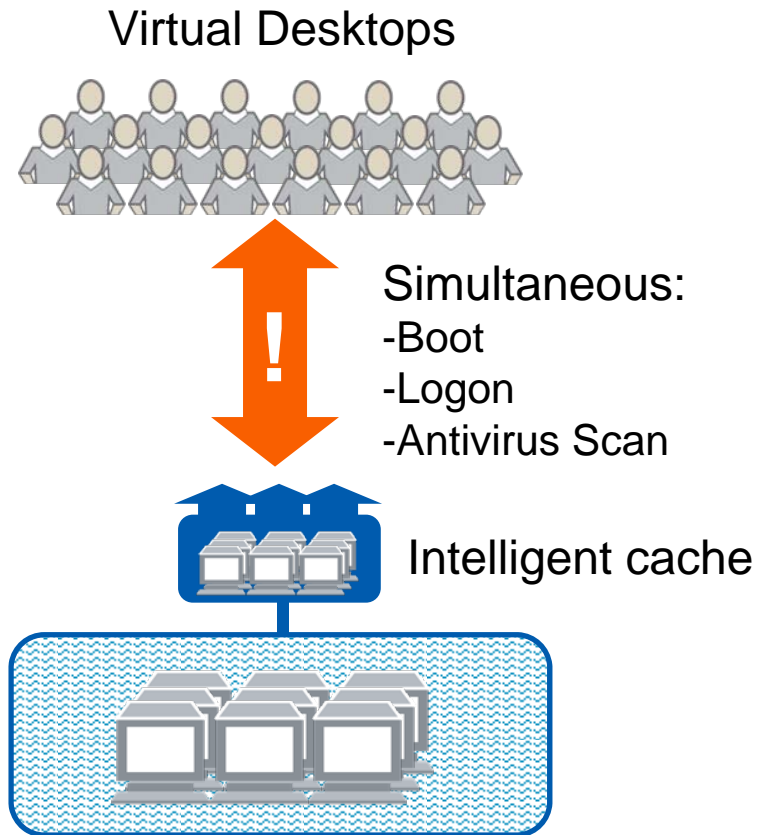


- Deduplicate virtual desktops
- Dedupe end-user storage by 20%-40%
- Thin provisioning increases utilization to over 70%
- Better-than-RAID10 protection at less than  $\frac{1}{2}$  the cost with RAID-DP



*Use 50% less storage  
with NetApp*

# Better Performance for Desktops



- PAM: Read optimized cache
- Addresses virtual desktop workloads
- Works even faster with dedupe

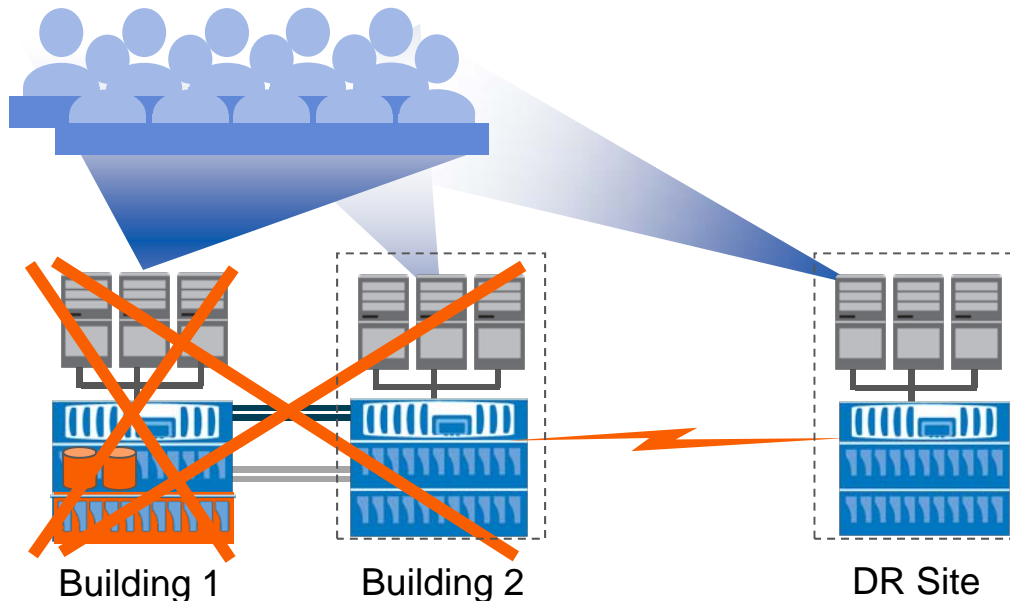
## Benefits

- Decrease boot time by 47%
  - Boot 1000 desktops in 10 minutes
- Reduce storage workload by 50%
  - Deploy more virtual desktops per system
- Increase performance by 71%
  - Get equivalent performance of a higher-end system



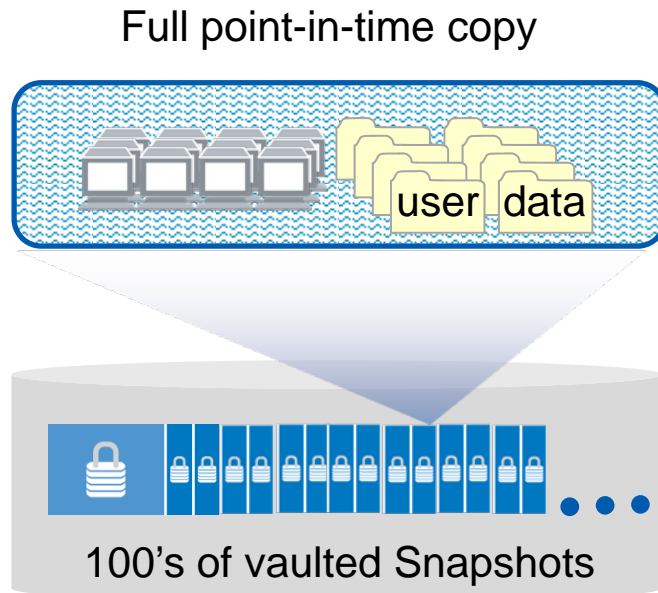
# Business Continuity for Desktops

- 99.999% system availability
- Transparent recovery from component failure
- Automatic failover for system and site failure
- Recover in minutes from larger regional disasters



*Get storage for HA and DR for less than the cost of a single traditional storage system*

# Ensure Compliance of Desktop Data



- Centralized desktop backups
  - Hourly, with no load on servers
  - Always full backups – space efficient
- Retain daily user history on disk
  - Store cost-effectively for months or years
  - Secure history in tamper-proof storage
- Protect access to desktop and end-user storage
  - Real-time encryption of data



# NetApp Storage

## *Essential for Virtual Desktop Solutions*



- Use 50% less storage. Guaranteed
- Provision 1000's of desktops in minutes
- One-click storage management
- Ensure compliance of desktop data



# NetApp and Citrix

Strategic partnership of Citrix and NetApp delivers a unique integration of Desktop, Server, Application and Storage Virtualization



- The First “One Click” Storage Integration for Citrix XenServer
  - Co-developed XenServer integrated adaptor
- Proven storage and virtualization solutions provide
  - Immediate payback
  - Lower TCO
  - Reduced IT management



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