

SIMPLIFYING VIRTUALIZATION



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CONSOLIDATION WITH VIRTUALIZATION DELIVERS TANGIBLE BENEFITS

IN THE DATA CENTER



- 50 cents spent on power & cooling for every \$1 on servers¹
- Real estate costs \$1,000 per square foot; \$40,000 per rack¹
- Average server utilization <10%¹

WITH VIRTUALIZATION

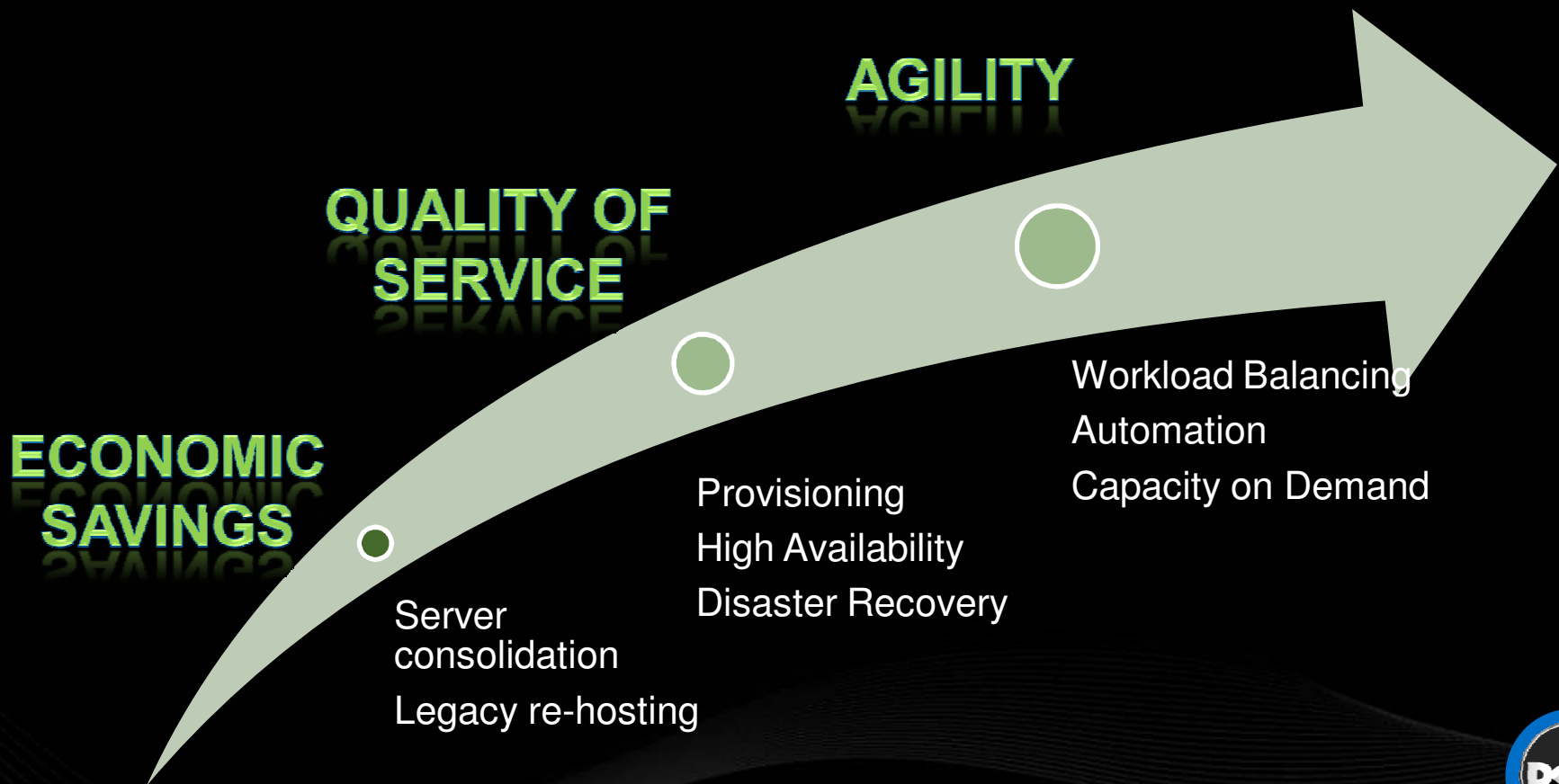
- Average number of virtual workloads consolidated on a single physical server is estimated at 10 in 2007 and 2008²
- Reduced overall hardware 22%¹
- Up to 23% annual cost savings¹

¹IDC, "Virtualization and Multicore Innovations Disrupt the Worldwide Server Market," Doc # 206035, March 2007

² Gartner, Dataquest Insight: Virtualization Impacts x86 Server Shipments, August 2007

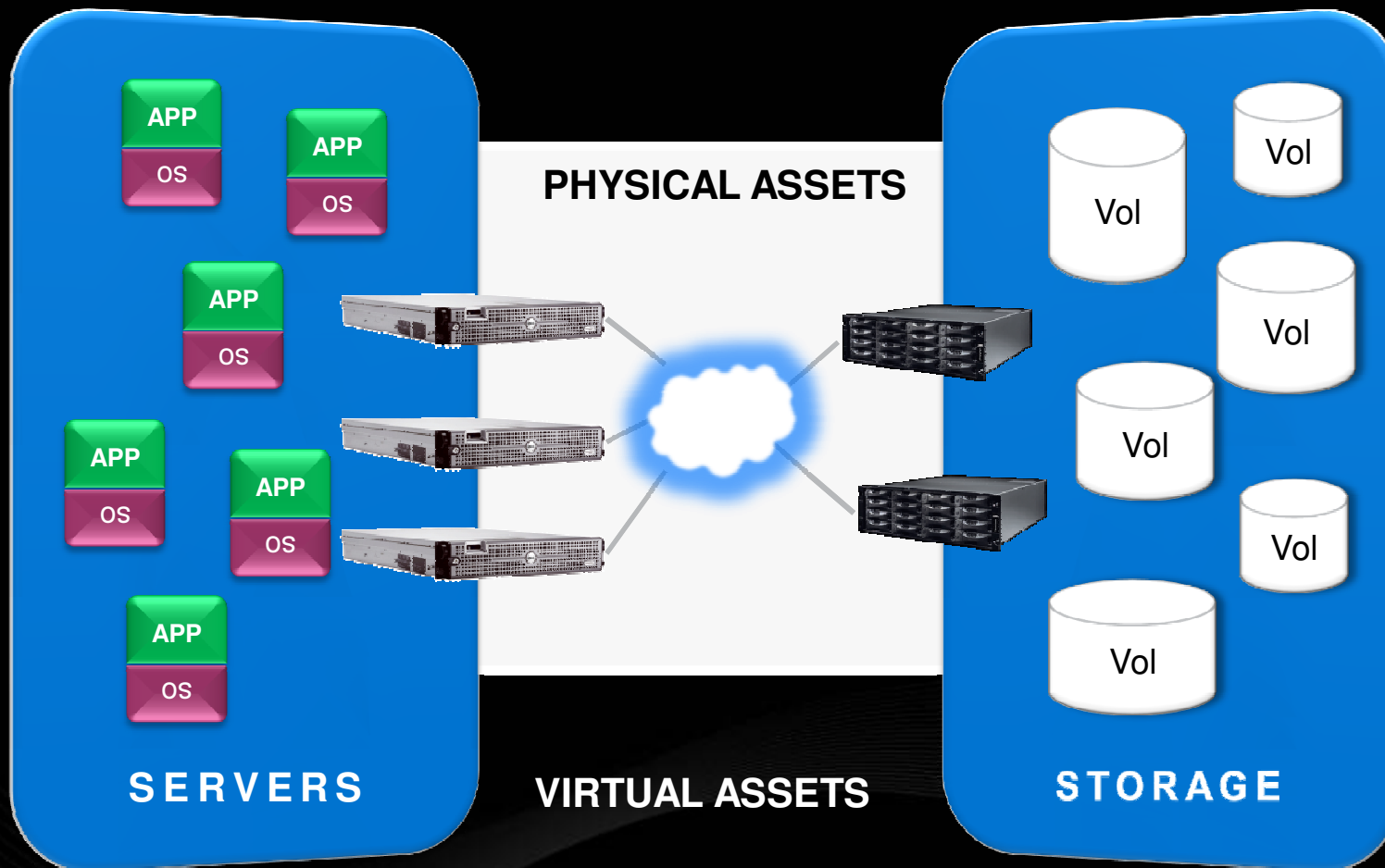


VIRTUALIZATION SIMPLIFIES IT BEYOND CONSOLIDATION



THE FUTURE IS VIRTUAL

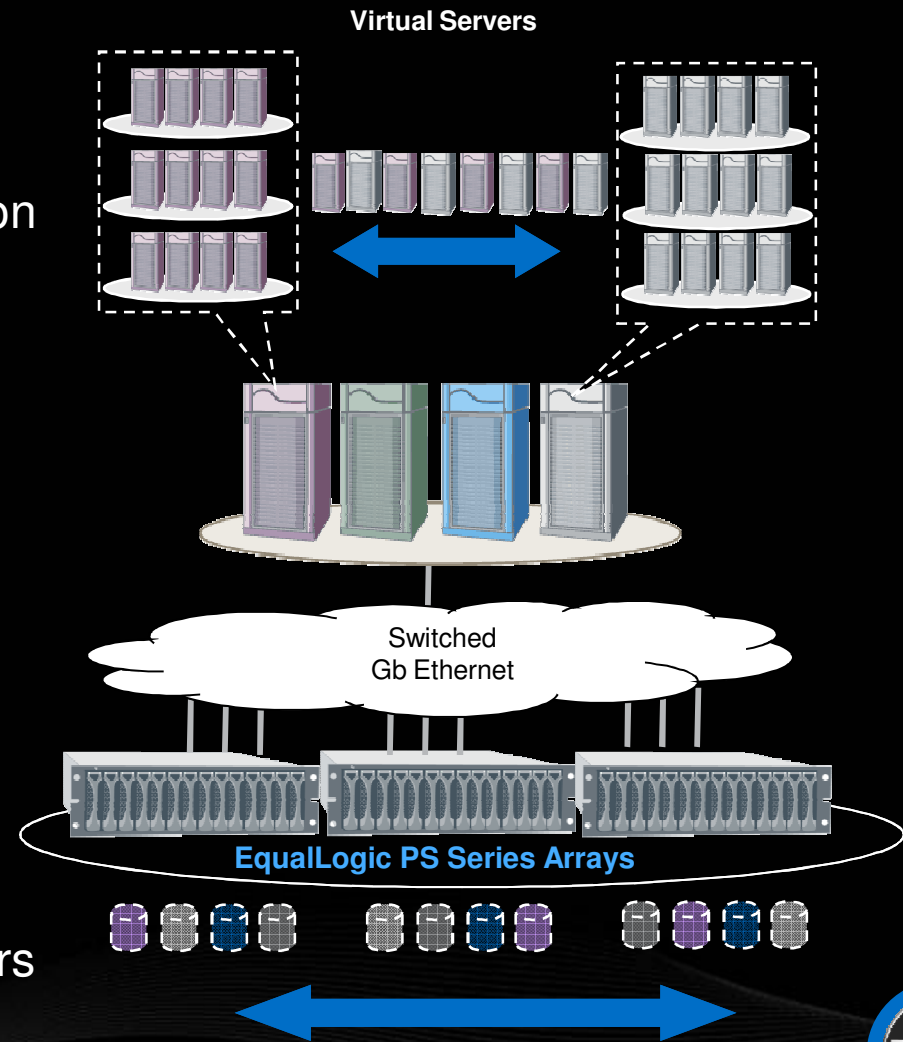
DELL EQUALLOGIC VIRTUALIZED iSCSI SANs



SERVER VIRTUALIZATION

KEY FEATURES ARE ENABLED BY NETWORK STORAGE (SAN)

- **Movement of Workloads**
 - Migration of running virtual desktop without interruption
- **Balancing Workloads**
 - Optimized resource usage given current workloads
- **High Availability**
 - Re-hosting and restart of virtual desktop in case of server failure
- **Server-less backup**
 - Independent of production servers



Customer Example: Boots & Coots

Original Environment:

- 4 physical servers (all with multiple roles)
- If they updated one application, they ran the risk of breaking another application on the same server
- Due to acquisition and internal growth, needed to grow to 30-40 servers

Current Environment:

- 3 ESX Servers
- 37 VM's – includes SQL, Exchange, Citrix, ERP
- 2 EqualLogic arrays at headquarters, and 1 array at DR location
- Riverbed systems to allow worldwide consolidation
- Utilize snapshots for quick recovery, tape for long term storage
- Fully redundant infrastructure locally and off-site for true business continuity strategy



Cost Justification

Hardware savings:

- 4 servers before versus 37 servers now
 - 37 new servers x ~\$3000 = \$111,000 (savings)
- Reallocated original servers to DR Site (no cost)
- Microsoft Datacenter – reduced licensing cost by as much as 65%

Green savings:

- Power - \$300-500 per server ~ \$13K/year
- Cooling – up to \$400 per server ~ \$10K/year
- Space reduction – 2 full racks down to 1 half rack

Management:

- Average cost per server for IT staff labor, software license updates, warranties, and service contracts is 3 to 4X initial cost over its lifetime (ex. \$3000 server = \$9000 over lifetime)
- Consolidating 37 servers to 3 = \$300,00 potential savings

