

# The Evolution of Desktop Virtualization



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**Integrated Archive Systems**  
**2009**

# Who is Integrated Archive Systems?

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## **Data Management Solutions Specialists!**

Our solutions meet the following data management challenges:

- Data Storage
- Data Protection
- Data (Disaster) Recovery
- Data Archival
- Data Virtualization and Cloud Computing Platforms
- Data Security
- Data Access: Networking
- Data Access: Servers/Blades
- Data Monitoring (Management/Automation)
- Microsoft Application Challenges

# Who is Integrated Archive Systems?

- Founded in 1994, 16<sup>th</sup> year of business
- IAS is a “Woman Owned Business Enterprise”  
Women's Business Enterprise National Council 
- West Coast Centric - but support customers with national and global presence
- IAS is focused on Data Center Efficiencies that Lower Costs by leveraging:
  - Virtualization, Cloud
  - Emerging Compute, Storage and Management Trends
  - Green and Sustainability

# Why Partner with Integrated Archive Systems? Technical Competency

## Engineering Team:

- Technical Architects
- Professional Services
- Project Management
- Technology Specialists

## Specialties Focus:

- Complete Solutions
  - ROI and Justification
- Operational Readiness
- Design and Delivery
- Holistic Integration
- Strategic Planning
- Efficiencies and Optimization
- Technology Advisor
- Assessments
- Health Checks
- Best Practices

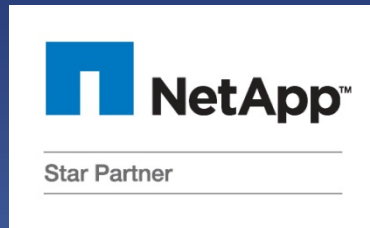
## Services Focus:

- Storage Practice
- Data Protection
- Virtualization
- Networking
- Cloud Platforms
- Management Platforms
- Microsoft Applications
- Security/Compliance
- Green IT

# Who is Integrated Archive Systems? State, County, City, Municipal Customers

- City of Cupertino
- City of San Jose
- City of Concord
- East Bay Municipal Utility District (EBMUD)
- Santa Clara Superior Court
- City of Sunnyvale
- San Mateo City College
- Contra Costa County
- Santa Clara Valley Water
- San Jose Police Department
- Riverside County Department of Social Services
- Imperial County
- Alameda County Sheriff's Office
- California State Bar Association
- State of California Office of Emergency Services
- CA Office of Systems Integration
- CA Secretary of State

# Who is Integrated Archive Systems? Technology Solution Partner Snapshot



# The Evolution of Desktop Virtualization

# Evolution of Desktop Virtualization

- **Remote Desktop Services**

- aka Terminal Services
- allows a user to access applications and data on a remote computer over a network.
- Applications are run on the remote computer.
- Microsoft Terminal Services, Citrix Presentation Server/XenApp

- **Application Streaming**

- applications, while still stored on a centralized server, are streamed to the client on-demand and then executed on the client machine.

- **Application Virtualization**

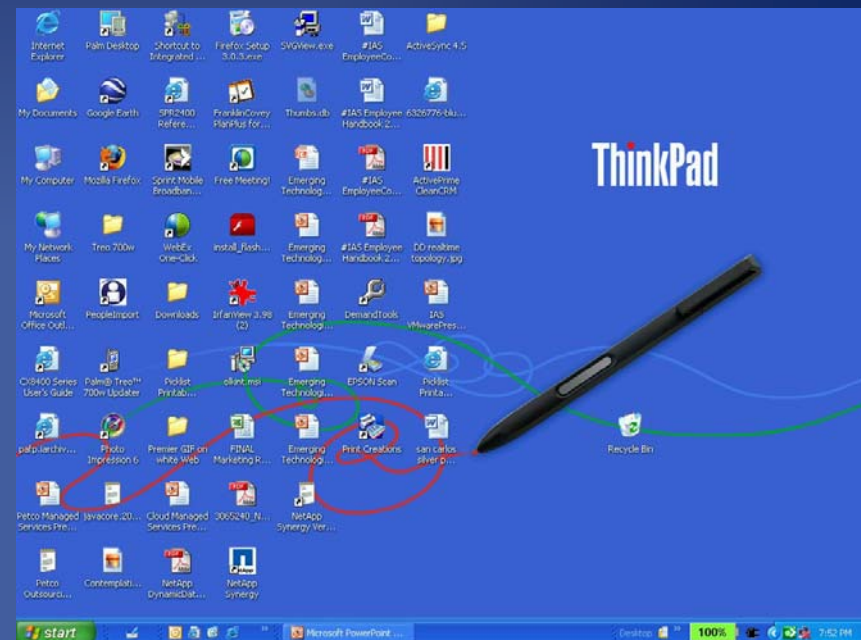
- Application resources are stored on a centralized server, executed on a centralized server and are shared and allocated as needed

- **Virtualized Desktop**

- Your entire desktop image including OS, data and applications are accessed remotely from a centralized data center
- Compute Resources within the centralized data center are shared and allocated as needed.
- Leverages Application Streaming and/or Application Virtualization for sharing of application resources in the most efficient matter based on the client end point

# What is the ultimate virtual desktop?

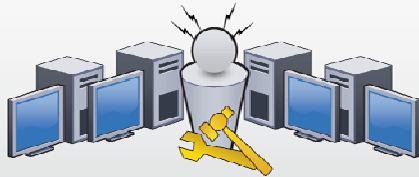
- My Profile
- My Icons
- My Applications
- All Mobile
  - Thin Client
  - Zero Client
  - Mobile Device
- Anywhere/Anytime access
- Always protected
- Always Secure



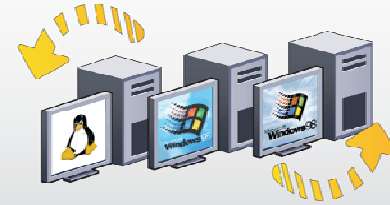
# Why Desktop Virtualization?

# Challenges with Traditional Desktop Deployment

**Cost \$\$\$:** One-off fixes



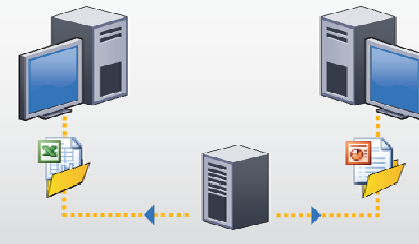
**Speed:** Slow desktop refresh and patching



**Risk:** Data security and compliance



**Performance:** Bloated Desktop

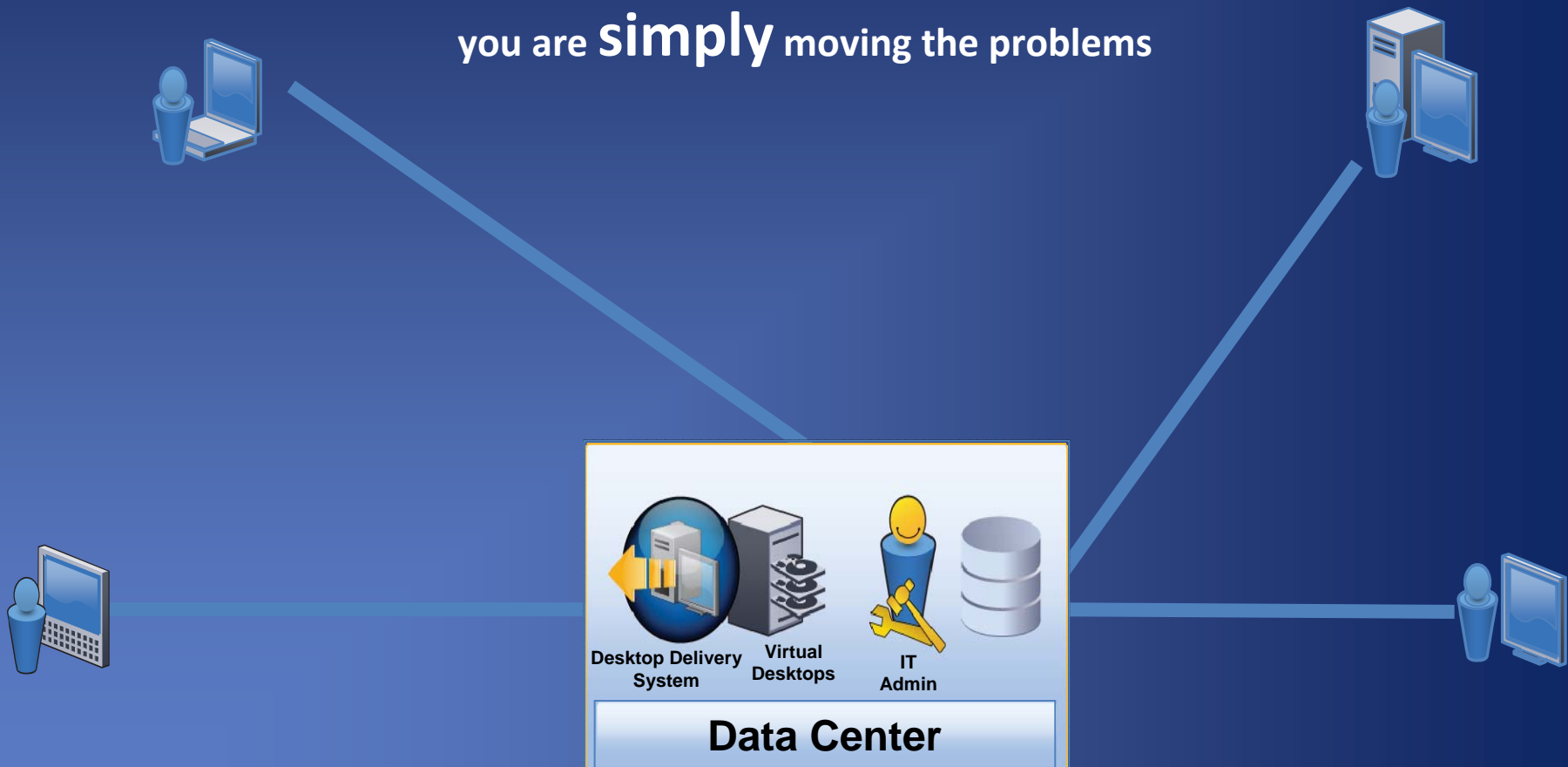


# Benefits of Centralized Desktop Delivery

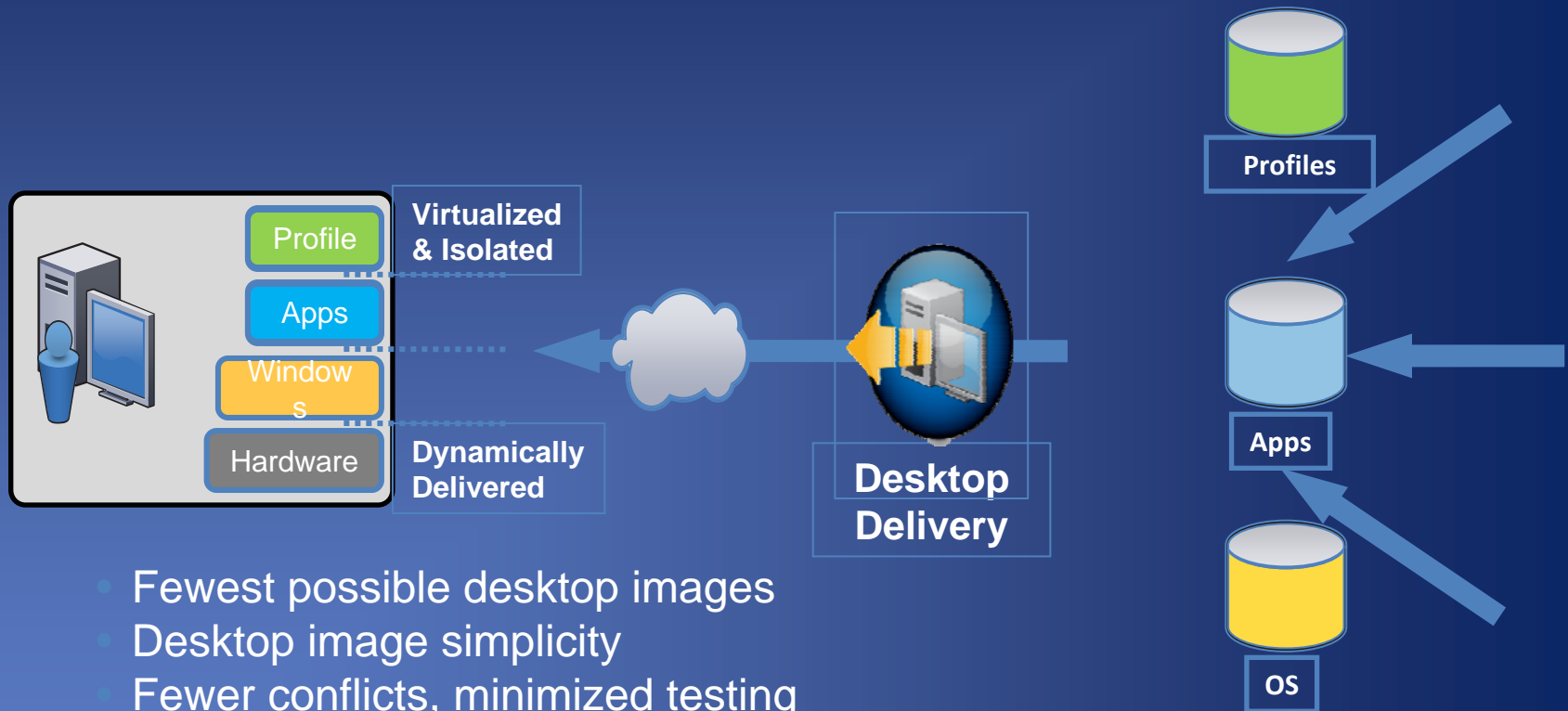


# Centralization *alone* is not the answer

you are **simply** moving the problems



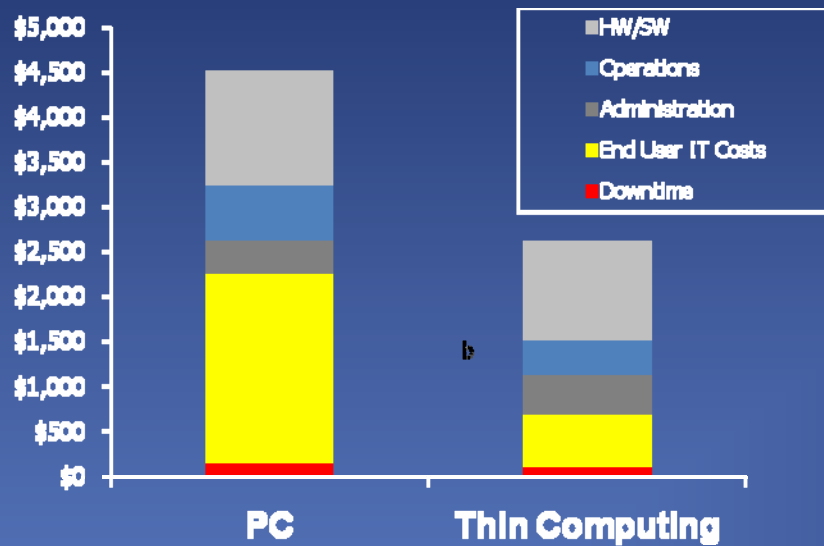
# Desktop Delivery Vision



- Fewest possible desktop images
- Desktop image simplicity
- Fewer conflicts, minimized testing
- Low-touch, self-serve re-imaging

# Virtual Desktops Address the Challenges Head On

## Cost Benefits



**40%**

Reduction  
HW and SW  
costs

**29%**

Reduction  
IT operations  
costs

**88%**

Reduction  
worker  
downtime

**78%**

Increase  
IT staff  
productivity

## Business Benefits

Security / Privacy

Compliance

Manageability

Reliability

Rapid Deployment

Power/Noise/Cooling

Source: Gartner Inc

IAS, Proprietary and Confidential, 2009

# Transitioning to the Datacenter

- Flexible provisioning of hardware resources
- Flexible access (anywhere, anytime)
- Centralized management and provisioning of OS
- Completely isolated environment



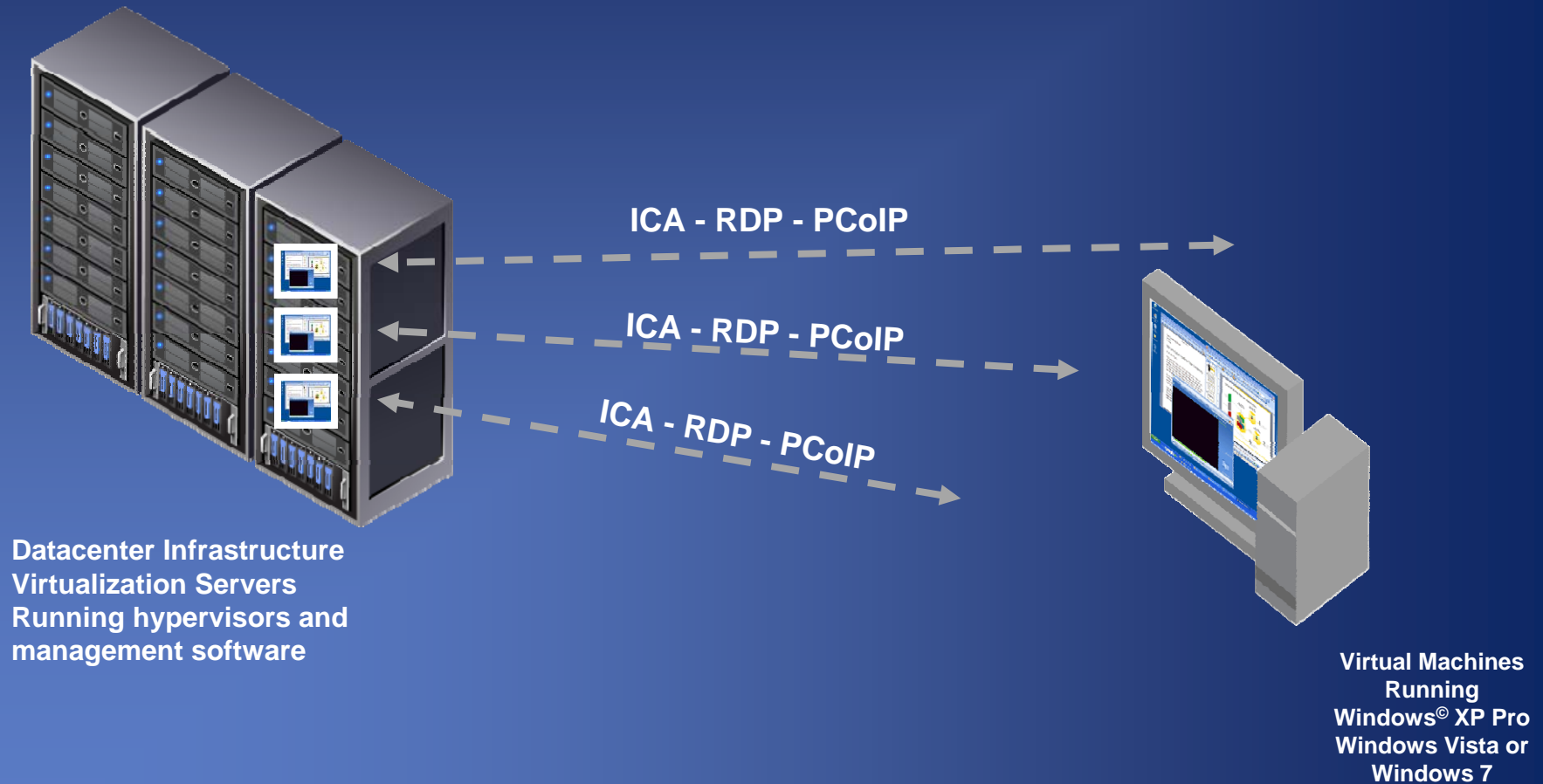
Datacenter Infrastructure  
Virtualization Servers  
Running Hypervisors and  
Management Software

ICA - RDP - PCoIP

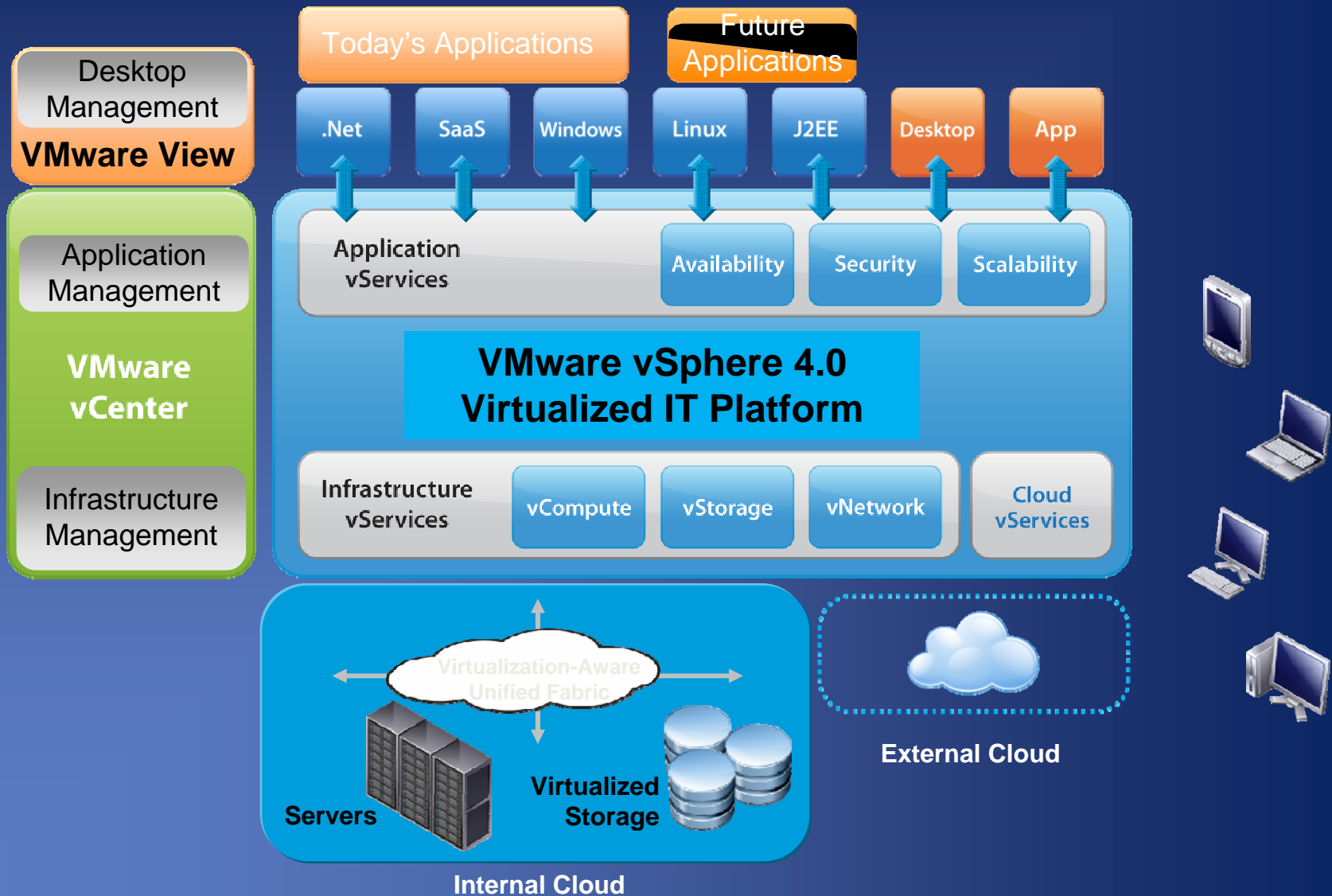


Virtual Provisioning  
Physical PC  
Windows® XP Pro  
Windows Vista or Windows7

# Virtual Desktop Scalability



# VMware Virtual Infrastructure - vSphere 4.0



# VMware View 3 Architecture

Integrated solution including:

- VMware VI3 Enterprise
- Virtual Desktop Manager 2.1



Extended Win32 Client



Direct from Thin Clients



Browser on Linux, Mac



CLIENTS

RDP/HTTPS



VMware INFRASTRUCTURE 3



VMware VIRTUAL DESKTOP MANAGER

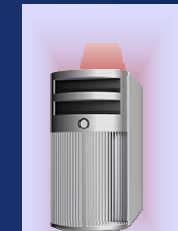
CENTRALIZED VIRTUAL DESKTOPS



Microsoft Active Directory



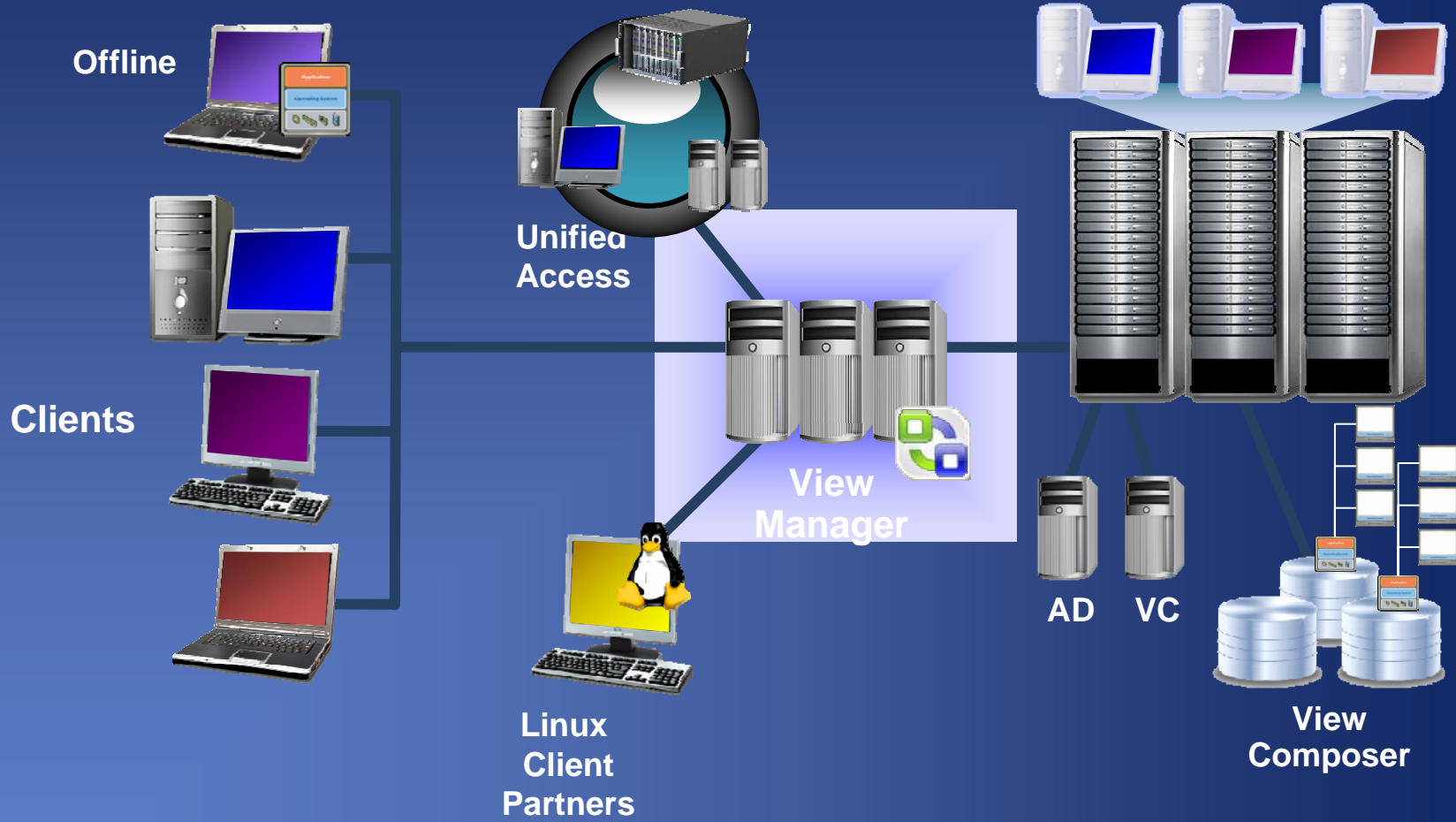
VMware VCENTER



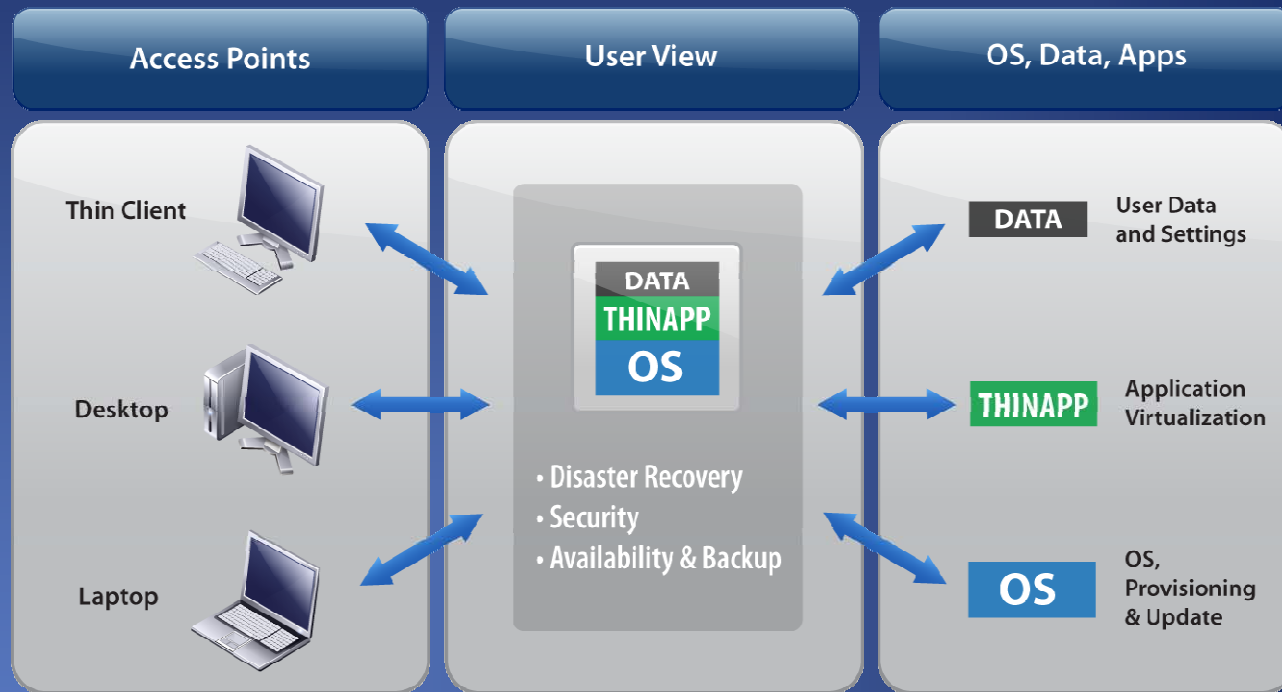
DMZ Deployment Option




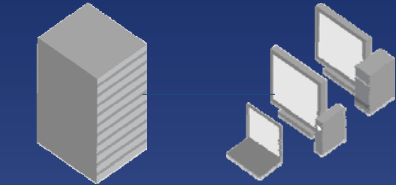


# VMware View 3 – Full Picture



# Application Virtualization



# Virtual Desktop Computing Model Comparison

	Thin Client	Virtual Client	Zero Client	PC
	 <p>Storage Management Shared Execution</p> <p>Display Light Management</p>	 <p>Storage Management Isolated Execution</p> <p>Display Light Management</p>	 <p>Storage Management</p> <p>Execution</p>	 <p>Management Storage Execution</p>
<b>Datacenter / control point</b>	Cloud, Microsoft Terminal Services, Citrix XenApp, VMware	Cloud, Microsoft Hyper-V, Citrix XenDesktop, VMware View	Citrix Provisioning Server, VMware	PC
<b>Execution</b>	Centralized	Centralized	Distributed	Distributed
<b>Benefits</b>	User density and TCO	App compatibility and OS flexibility	Experience of PC, control of Thin Computing	De-facto Standard
<b>Ideal user type</b>	Task	Task, Knowledge	Task, Knowledge	Task, Knowledge
<b>Client / Green Network</b>	Light / Best	Light / Better	Heavy / Best	Heavy / Poor
<b>User Experience</b>	LAN, WAN, Wi-Fi	LAN, WAN, Wi-Fi	LAN, WAN	LAN, WAN, Wi-Fi
<b>Mobility</b>	Good	Better	Best	Fi
<b>Security / Control</b>	Good	Better	Future	Best
	Better	Better	Best	Poor

# Impact of Storage on VDI

- **Performance**
  - Optimized for read and write activity
  - Performance acceleration capability (Solid State/Flash Technology)
  - Automated striping of data across multiple disk spindles for performance
- **Data Protection**
  - Built in Snapshot capabilities for PIT recovery
  - Replication capabilities for offsite DR
- **High Availability**
  - Clustering
  - Hardware redundancy / resiliency
  - FRU capability
- **Capacity Optimization**
  - Deduplication
  - Thin Provisioning
  - Cloning
- **Management and Automation**
  - Integration with virtualization technology layer
  - Integration with Management frameworks for automated provisioning



# Why Integrated Archive Systems for Virtualization?



# Why Integrated Archive Systems for Virtualization?

- VMware Authorized Consulting Partner (VAC) focused on holistic datacenter infrastructure and data management
- Dedicated VMware practice that is focused on assisting our clients in building scalable resilient datacenter cloud computing infrastructure
- End to End datacenter virtualization competencies
- Proven track record with large, medium and small scale deployments

# Questions?

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