



# ▶ CLIENT VIRTUALIZATION SOLUTIONS

DESKTOP VIRTUALIZATION, APPLICATION  
VIRTUALIZATION, & DESKTOP STREAMING

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## ▶ Agenda

Introduction

Overview

Considerations

Case Studies

The CDW Experience

Summary

*\*Please rate & return your evaluation to be entered for the door prize\**

## ► Our Driving Objective

*"CDW's Solution Specialists & Architects help our clients reduce the cost and complexity of their computing infrastructure so financial resources and personnel are freed up for more strategic initiatives. We accomplish this by consistently leveraging virtualization and optimization technology and techniques."*

### Virtualization



### Optimization



## ▶ IT must adapt to changing conditions

### *Doing More with Less*

- » Budgets are shrinking or frozen
- » Personnel resources are constrained
- » Systems Management and Power costs continue to rise

### *All while*

- » Keeping critical business processes up and running
- » Adding new systems - responding to business needs



# ▶ OVERVIEW

## ▶ Client Management Challenges



Physical Desktop & Laptop Security

PC Management is time consuming and inefficient

Operating Costs are high

Desktop Proliferation

Unnecessary power use and heat dissipation in office environments

Multiple OS images to manage

Multiple desktops and laptops have to be maintained in labs for proper testing

DR model is challenging for both Desktops and Laptops

Failures require techs to visit onsite which results in loss of productivity

## ▶ Client Virtualization Benefits

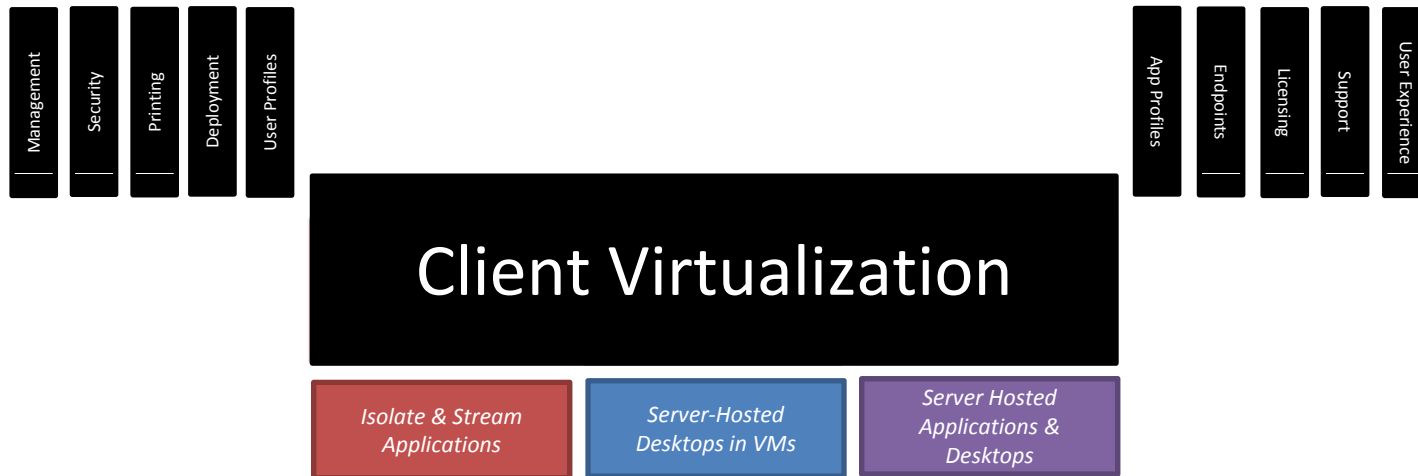


- Reduced Management, Maintenance & Support Costs
  - Thin Clients have no moving parts
  - Desktops provisioned in minutes
  - Desktops updated in minutes
  - Virus outbreaks can be controlled
  - Issue pooled and non-pooled desktops from a single console
- Increased Security & Compliance
  - Controlled OS and Application Patch Updates
  - PC theft is a non-issue since all data is stored on the SAN
  - All data is stored and backed up on the SAN, including user profiles and other 'customizations'
  - Secure Remote Access



Virtualization Platform

# ► What is Client Virtualization (Cv)?



## ▶ Client Virtualization Types

### Desktop Virtualization or VDI

- » VMware View
- » Citrix XenDesktop

### Application Virtualization or Application Streaming/Isolation

- » Citrix XenApp (Hosted & Streaming)
- » Microsoft App-V
- » VMware ThinApp

### Desktop Streaming

- » Citrix Provisioning Server
- » Wyse Streaming Manager

*Use one or all of the above in your Client Virtualization Solution*



## ▶ CONSIDERATIONS

## Determine Application Architecture

- » Multi-win capable
- » User Profile dependencies
- » Graphics & rendering requirements
- » Multimedia requirements
- » Special devices – IP soft phones, USB devices, biometric scanners, etc.

## Determine Infrastructure Architecture

- » Multiple server hosts with shared storage will be necessary to achieve a highly available desktop infrastructure
- » CPU and RAM sizing with 40% growth or more should be estimated
- » Desktops should be stored on SAN or NAS
- » Desktop backups can also be accomplished inside the datacenter
  - » If designed properly, only a single desktop should be backed up

## Determine Remote Access Requirements

- » Understand access devices (PCs, Macs, Thin Clients, Notebooks)
- » Identify security requirements (encryption, 2-factor etc.)
- » Identify bandwidth limitations
- » Define access methodology (web, client etc.)

## Perform Proof of Concept / Pilot Deployment

- » Test, test and test again!

## End User Change Management

- » Replacing large desktop towers with tiny thin clients and letting end user's know that their desktop is running somewhere else can lead to a lot of lowered morale and confusion
- » To avoid the 'big brother' effect, replace aging monitors with large, widescreen displays and promote the 'upgrade' concept

## Understand Licensing Requirements

- » For Virtual Desktops, a monthly Microsoft VECD (Vista Enterprise Centralized Desktop) subscription is required (talk to your MS Licensing Specialist for options)
  - » VECD for Software Assurance (for Desktops covered under SA)
  - » VECD (for Desktops without SA, Thin Clients, Macs etc.)
- » For Hosted Applications via Terminal Services/Remote Desktop Services
  - » Windows Server License
  - » Windows Server CAL
  - » Terminal Services CAL
- » For Desktop Streaming
  - » Desktops must be covered by SA
  - » Desktops without SA will need Upgrade/SA to stream

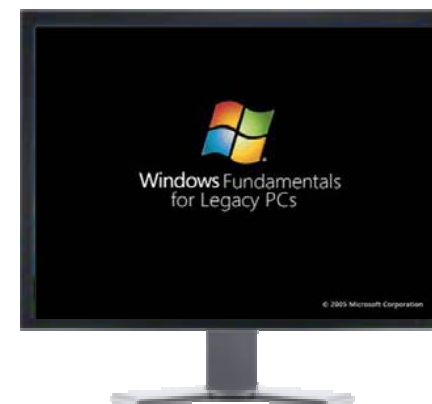
## Consider using Thin Clients

- » Small form factor
- » Low power consumption, no moving parts
- » Replace aging, power hungry PCs with these 'upgrades'



## Convert Existing PCs into Thin Clients

- » Reload Windows Fundamentals for Legacy PCs (similar to XPe)
  - Only available with Software Assurance
- » Extend life of existing PC hardware
- » This approach will not achieve power reduction



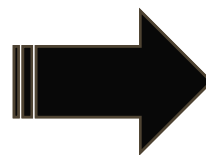
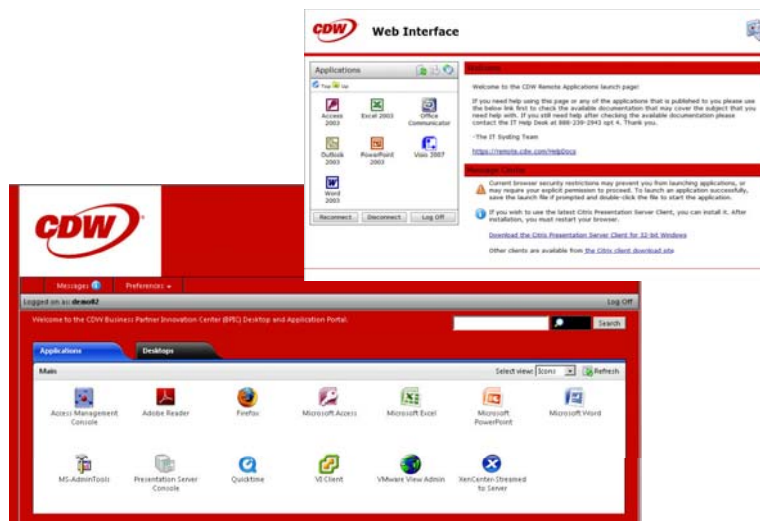


## ▶ CASE STUDIES

## ► We deliver critical applications virtually

CDW IT uses Citrix XenApp on (28) blades

- » Over 1,000 concurrent sessions on XenApp nationwide
- » Virtualization Solutions Practice uses XenApp to deliver demos to customers
- » Access critical Windows applications from almost any platform
  - Windows, Linux, Mac, ThinOS, iPhone etc.



## ▶ Large Insurance Organization

### Significant Cost Reduction with Citrix XenApp

#### » Customer Background

- Sneakernet software delivery - quoting software CDs sent by mail to partners
- Software Updates required reissuing new CDs to partners
- Support was complicated due to the variety of partner operating system platforms

#### » Solution

- Implemented Citrix Secure Gateway & XenApp, Web Interface
- Main applications included individual and group insurance quoting software
- Cost Savings estimated at 350k/year in WAN link reduction
- Allowed flexibility to bring new partners online in minutes:
  - Add user to Active Directory
  - Email URL to partner
  - Partner downloads ICA Client from Web Interface and they are ready to use the quoting software
  - Software updates made on XenApp are delivered instantaneously to all users

## ► Large Healthcare Services Provider

### Cost Reduction through the implementation of VMware View

#### » Customer Background

- 1,650 Desktops in 26 Call Centers
- Each Call Center with dedicated server hardware

#### » Solution

- 1,650 Virtual Desktops with VMware View for Call Center workers
- 26 Call Centers consolidated to 2 world-class call centers
- 1:300 Ratio of desktop technician to call center worker
- Ability to deploy 100 desktops in 60 minutes
- Major reduction in help desk tickets
- No local deskside support required; provisioning and re-provisioning can be done remotely
- DR test proved that a new image could be deployed to 1,000 users in 10 hours

## ▶ County Government

### Major Cost Reduction through the implementation of WYSE Thin Clients

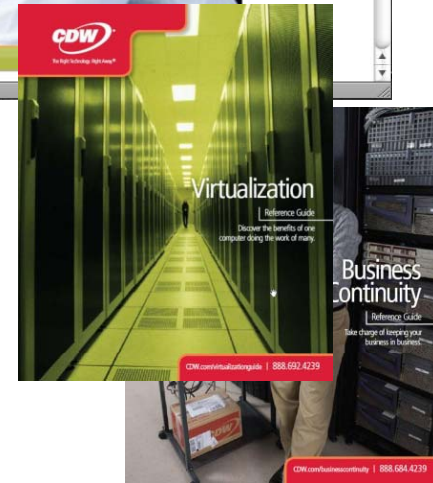
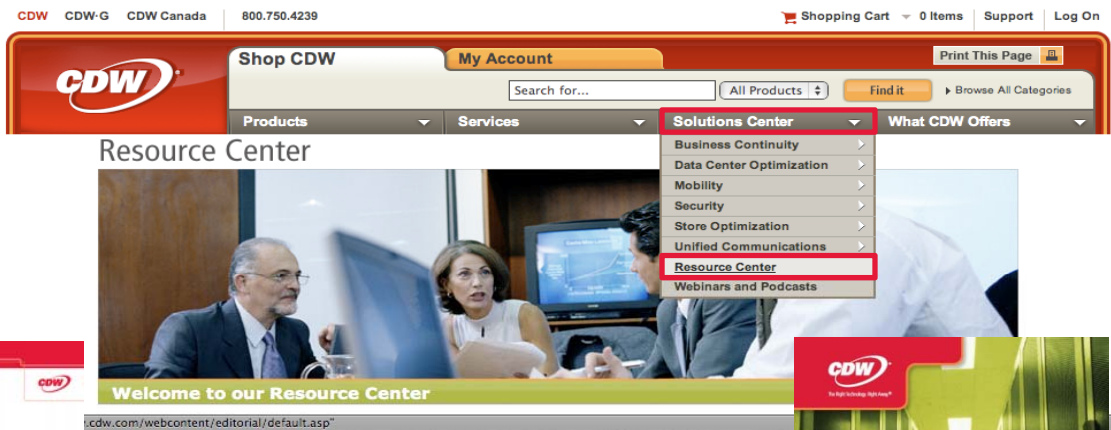
#### » Customer Background

- 2,500 PCs, 123 locations across 55 square miles
- 5 desktop support technicians
- Car fleet for travel
- Most locations internet connected (VPN/ICA access to XenApp Infrastructure)
- Management costs extremely high due to distributed computing model

#### » Solution

- 1,000 WYSE Thin Clients
- Citrix XenApp Hosted Applications
- Lowered power consumption costs by \$60,000 annually
- Lowered management costs by \$420,000 annually
- Ability to support any user from any location

# Whitepapers, Solution Briefs & Reference Guides



For more information,  
go to [cdw.com/virtualization](http://cdw.com/virtualization)