



# Windows 10 IoT for Thin Clients



# Agenda



Today's changes and Microsoft VDI solution



Thin clients terminology and value proposition



How Microsoft Enables Thin Client Ecosystem



Top Capabilities with Windows 10 IoT



Windows 10 IoT and Azure in Thin Client Scenarios



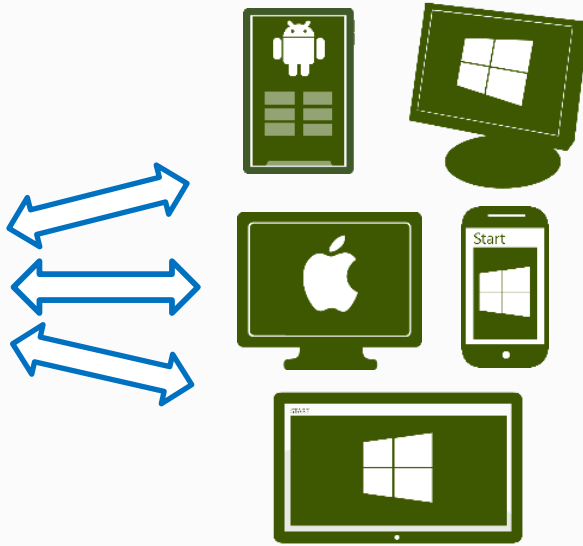
What Can You Do with Thin Client Devices?

# Today's challenges



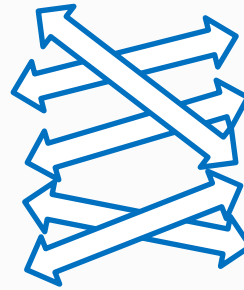
## Users

Users expect to be able to **work in any location** and have access to all their work resources.



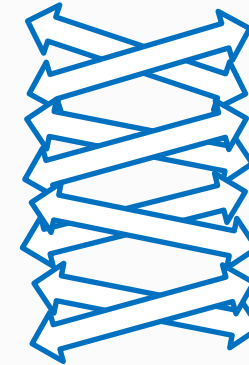
## Devices

The **explosion of devices** is eroding the standards-based approach to corporate IT.



## Apps

Deploying and managing applications **across platforms** is difficult.

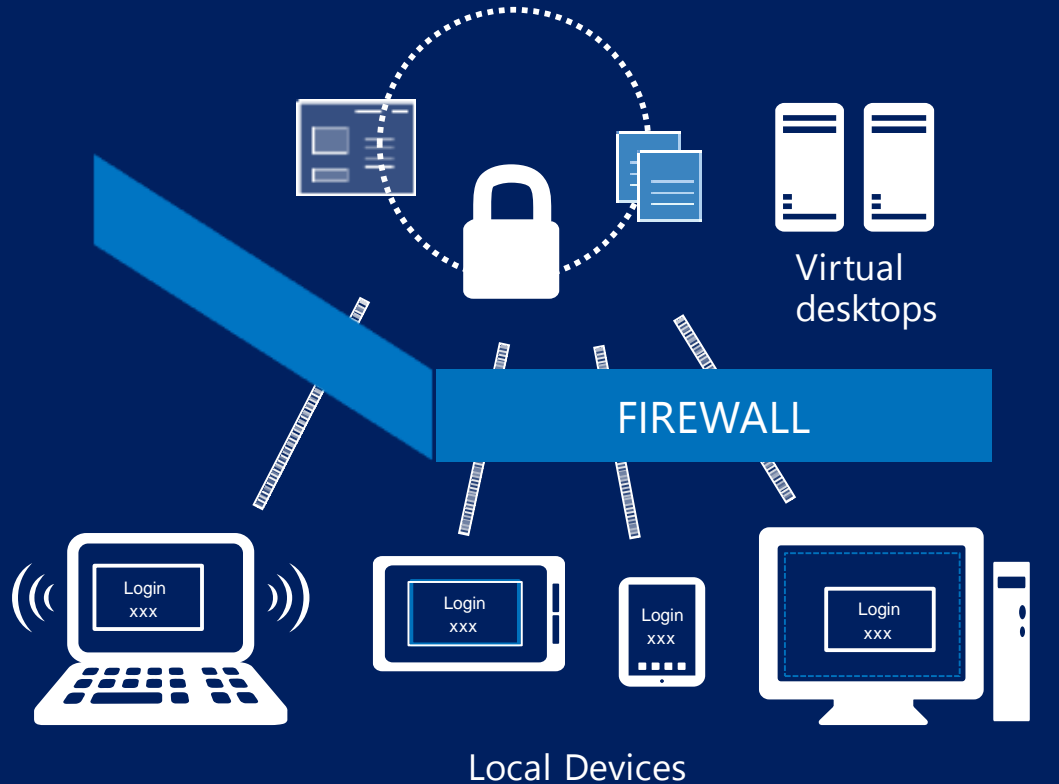


## Data

Users need to be productive while **maintaining compliance and reducing risk**.

# It all requires flexibility in delivering the solutions

## Remote Desktop Solutions Hosted Virtual Desktops (VDI)



### Flexible access to Applications from any device

Secure access to applications from any connected device  
Pursue "Bring Your Own Device" programs

### Secure corporate data

Centralize corporate data and control user access

### Avoid business disruptions

Instant provisioning of corporate resources

### Centralized management

Fast desktop delivery with centralized management

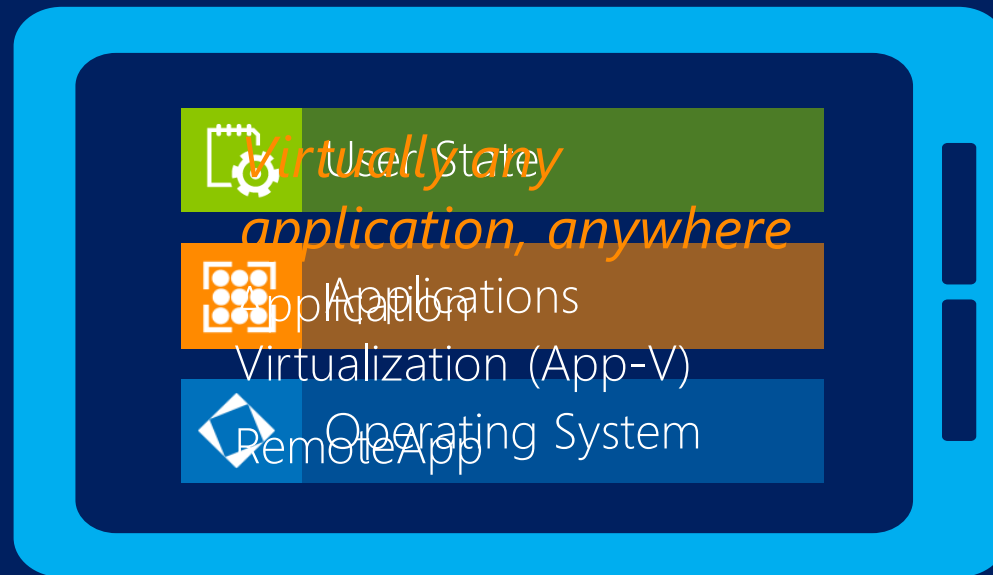
# Microsoft has a Desktop Virtualization Solution

Deliver virtualization to the user through a more comprehensive platform!

Centralized and Unified Management

*Change the device,  
keep your experience*

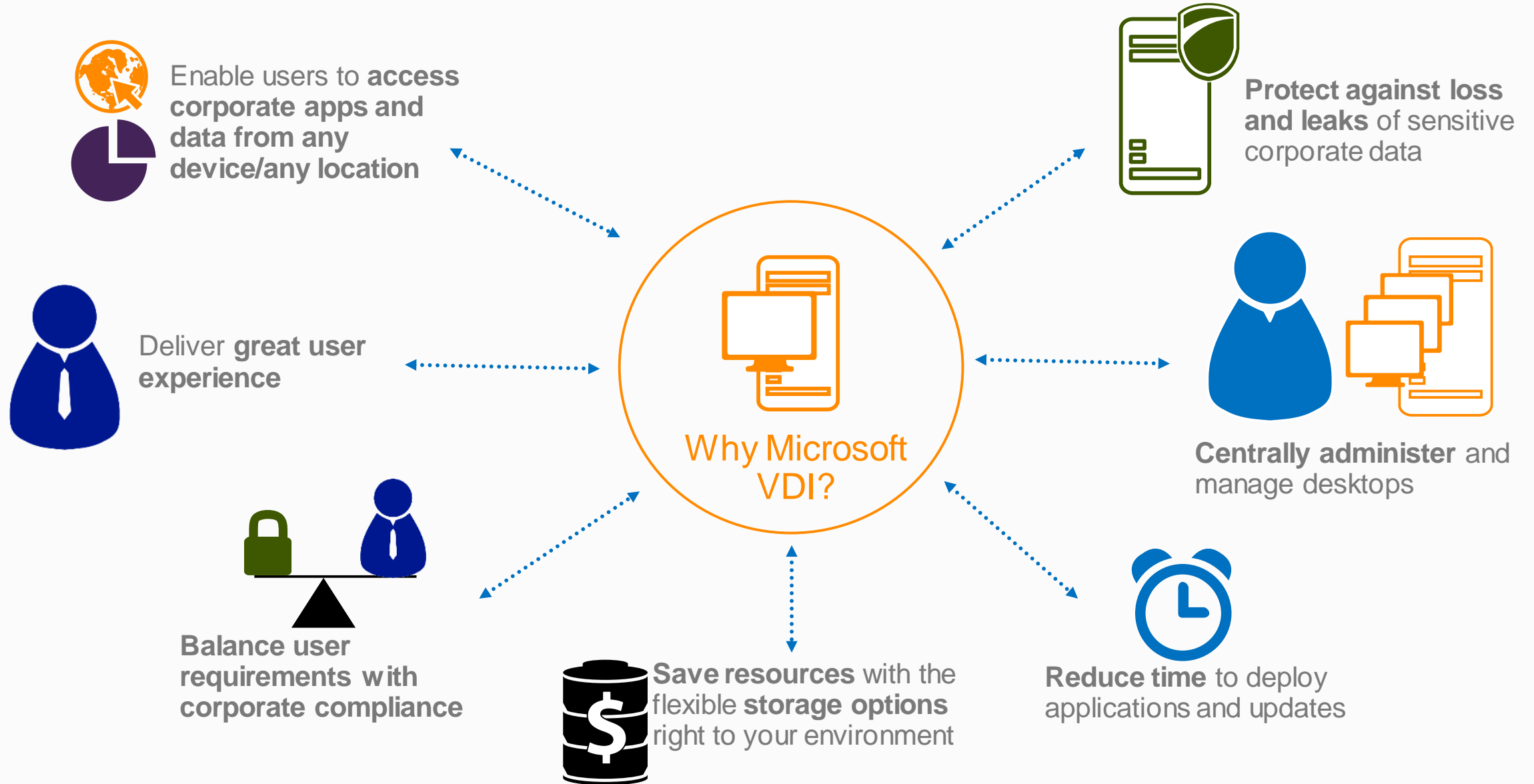
User Experience  
Virtualization (UE-V)  
Folder Redirection







*Windows  
everywhere*

Microsoft VDI  
Client Hyper-V  
MED-V

# Why Microsoft VDI?



# VDI Software Components

<b>OS</b> on an access device	<b>Access Devices</b> 
<b>Applications</b> that execute on the virtual desktops	<b>Applications</b>  Skype for Business Internet Explorer Microsoft Office
<b>Windows</b> running in the VM	<b>Windows Client VMs</b> 
Any <b>partner technology</b>	<b>Partner Technology</b> Citrix XenDesktop Quest Workspace VMWare
VDI <b>server</b> and management	<b>Application Virtualization</b> <b>Connection Broker</b> <b>Hypervisor</b> <b>Management</b> 

# Thin Clients: An access point for your VDI solution





# Thin clients: Terminology

Many Users

Accessing Information from Central Location

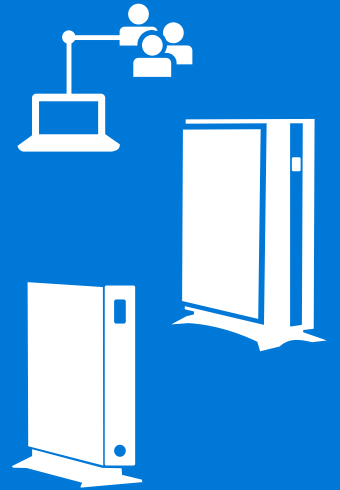
Lower Computing Requirements

Designed to always be connected to a server-based desktop

Has a low profile and footprint:

- Smaller CPU, RAM than a typical PC
- Very little (if any) local storage for data and applications
- Uses less energy than a PC

Typically runs a light-weight embedded operating system



# Thin Clients Choices

## Traditional Thin Client

- Need familiar user-interface
- Expect a local browser/media tools
- Want personalization
- Require high security

Knowledge  
Workers



## Mid-Range Thin Client

- Run limited applications
- Tend to work on specific tasks
- Want a local browser
- Easily replaced device

Deskless  
Workers



## Ultra Thin Client

- No need for a personalized experience
- No local storage
- Typically needs to run a single application
- Direct connect to either browser or cloud app or RDS client

Task  
Workers



# Thin Client Value Proposition

Reduced Cost

Ease of  
Maintenance

Ease of Use

Security

# Powering Thin Clients with Windows



# Windows strengths to address Thin Client needs

Familiar and  
trusted  
platform

Reliable &  
Predicable  
Servicing

Advanced  
lockdown and  
UI control

Proactive  
Security  
Management



**Windows Embedded Standard 7**

# However, there were some challenges

## Security

Windows security approach is more proactive than the Linux embedded community\*

## Patching

Little difference between frequencies - clients apply patches every 15 months on average\*

## Total Cost of Ownership

### Lower TCO

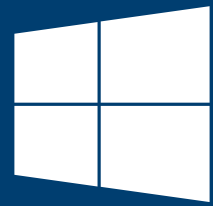


## Low Cost Devices Support

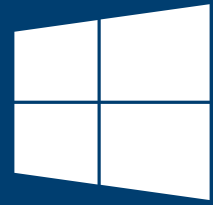
Adding flexibility in form factors with Windows 10

\* Based on an independent comparison study on thin client market by crimson marketing in Aug 2013

Introducing



Windows 10  
IoT



# Windows 10

Transforming our

Product

Business model

IoT  
Ecosystem



# Key Thin Client Scenarios with Windows 10 IoT

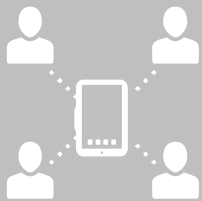
Customized  
Device  
Experience



Streamlined  
Management



Security in  
Multi-User  
Scenarios



Protect against  
modern  
security  
threats



Expanded  
Peripheral  
Support



Flexibility and  
low-cost  
solutions

# Key Thin Client Scenarios with Windows 10



## Customized Device Experience

Easily customize device experience to meet your needs  
Same tools for OEMs and Enterprise customers  
Better Win32 compatibility with Windows desktop  
Excellent Thin Client experience with RemoteFX

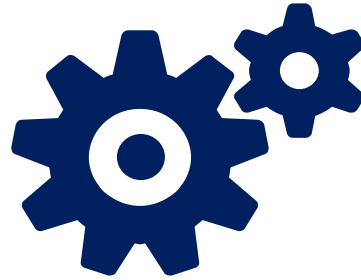
# Key Thin Client Scenarios with Windows 10 IoT



## **Protect against modern security threats**

Advanced malware resistance  
Enterprise Data Protection  
Next Generation Credentials

# Key Thin Client Scenarios with Windows 10 IoT



## **Streamlined Management**

One consistent and familiar management approach  
1st and 3rd party solutions  
Advanced MDM support

# Key Thin Client Scenarios with Windows 10 IoT



## Expanded Peripheral Support

Consistent communicating with peripherals for Line of Business scenarios  
New retail peripheral support for modern universal applications  
USB Redirect for local USB connected devices

# Key Thin Client Scenarios with Windows 10 IoT



## Security in Multi-User Scenarios

Create read-only devices for a predictable device experience  
Advanced Lock Down capabilities  
Granular control over UI

# Key Thin Client Scenarios with Windows 10 IoT



## Flexibility and Cost Savings

- Scale devices from large to smaller OS footprint
- Flexibility around licensing to help reduce cost
- Reliable and Predictable Servicing
- Features such as Wimboot help reduce footprint size

# Enabling Thin Clients with Azure Remote Desktop





# Windows Thin Clients with Microsoft Azure RemoteApp



Remote applications delivered from Azure's reliable platform



Build secure and reliable access with Windows thin clients and other BYOD devices



Delivered via Microsoft Remote Desktop Protocol and RemoteFX



Dynamic scale and elasticity



Flexible hybrid or cloud deployment options

# Selecting the Right Edition for Your Device



# Windows 10 IoT Editions for your Thin Client device

## Windows 10 IoT Enterprise

Win32 and Universal App support including Citrix, VMWare support for thin client scenarios  
Advanced security threat protection  
Same deployment, manageability and servicing as desktops, Advanced device lockdown capabilities  
Excellent fit for both traditional and modern thin client devices

## Windows 10 IoT Core

Optimized version of Windows that enables building ultra thin clients as UWP platform ecosystem evolves

Single UWP app experience

Excellent fit for ultra-thin modern thin client and cloud devices





# Get started today!

- Build your traditional thin clients with Windows 10 IoT Enterprise
- Build ultra thin clients and low cost cloud devices with Windows 10 IoT Core
- Innovate through new devices and AzureRemote App solutions



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How do our Customers use it



# Customer Reference Title

Actionable Description

Customer  
Logo

## Challenge

Fill in text here

## Tactics

Fill in text here

## Results

Fill in text here

[View the story here](#)

*Quote Goes Here*

*Name  
Title*

# Windows 7 and MDOP Saves Customers Money Today

## Deploy Windows 7 and MDOP for Real Cost Savings

 Windows 7		Annual Cost Savings /PC
Service Desk		\$22-62
Desktop Management		\$25-98
Deployment & Provisioning		\$12-61
Power Savings		\$3-45
<b>3 Total Direct IT Costs Savings</b>		<b>\$43-268</b>
Microsoft® Desktop Optimization Pack for Software Assurance		
<b>Application Management Best Practices w/ APP-V</b>		<b>Up to \$82</b>



Up to **20% savings**  
of Direct IT Costs

**Impressive IT cost savings**  
with MDOP

(Up to \$350/PC total direct-cost savings potential  
with end user productivity gains of additional \$125 annual savings)



# Windows 7: Real Customers, Real Savings



**BAKER TILLY**

- **Total direct IT savings of \$191 per PC per year**
- 18% reduction of PC management costs
- Reduced Labor needed to build or re-image PCs by 2 hours per PC, or 50%



**City of Miami**  
www.miamigov.com

- **Total direct IT savings of \$148 per PC per year**
- \$45 annual savings in power cost per PC (over 50% power consumption reduction)
- Image management and deployment time reduced by 50%

**Getronics**

a KPN company

- **Total direct IT savings of \$111 per PC per year**
- 29% reduction in IT time spent on OS deployment
- Estimated 25% fewer helpdesk calls (savings \$45/pc/ year)

# Windows 7: Real Customers, Real Savings

## City of Stockholm



- **Total direct IT savings of \$43 per PC per year**
- Reduced Labor needed to build or re-image PCs by 2 hours per PC, or 50%
- \$22 per PC in help desk savings (11% less calls) per year
- Saved \$3 per PC on power each year

- **Total direct IT savings of \$81 per PC per year**
- Deployment costs reduced by \$59 per PC
- Annual help desk costs reduced by \$13 per PC
- Reduced power consumption by 2%
- Estimates VPN savings to be \$7 per year per PC

- **Total direct IT savings of \$268 per PC per year**
- Automated scripting and other tools will enable the IT staff to reduce deployment costs by an estimate \$36/PC annually.
- Expects to save an average of \$102/PC/yr at help desk.
- Expects to reduce PC management costs by \$44/PC annually (with Win7, DEM and DaRT)

# Windows 7 TCO: City of Miami



City of Miami  
www.miamigov.com

“Now, when every budget dollar counts, we can deliver higher levels of service at lower costs. Doing more with less is a compelling way to assure citizens that tax revenue is being spent wisely.”

-Peter W. Korinis, Chief Information Officer, City of Miami

## SITUATION

City of Miami Needed To:

- Maintain IT services with budget that was reduced by 18%.
- Improve PC user productivity and satisfaction whenever they work.
- Minimize the likelihood of loss of service due to security breaches.

## SOLUTION

- BitLocker, BitLocker To Go, and AppLocker used to standardize environment, protect data, manage applications, avoid malware
- Faster access to data in remote offices through BranchCache™
- Centralized power management support via Group Policy
- Reduced helpdesk costs with Windows Troubleshooting/ Problem Steps Recorder that they called “nuggets of gold”

## IMPACT

- Image management and deployment time reduced by 50%
- Reduced onsite support visits by 90% and freed up scarce staff for process improvements.
- Streamlined deployment enabled to speed up deployment by 18 months.
- Users expected to save 18 hrs/year by accessing data faster from anywhere
- Avoiding annual WAN bandwidth increases by \$36,000/year.

### Estimated IT Cost Savings (\$ per PC per year)

Deployment	\$28
Desktop Management	\$25
Service Desk	\$36
Power Savings	\$45
Branch office network bandwidth costs	\$14
Total Estimated IT Cost Savings per PC	\$148

# Windows 7 TCO: Getronics



"If you do only one thing, deploy Windows 7. It will save you a significant amount of money and pay for itself."

-Lee Nicholls, Global Solutions Director, Getronics

## SITUATION

Getronics was looking to:

- Reduce costs by making PCs easier to deploy and manage
- Better protect sensitive data
- Make their highly mobile users more efficient when working remote and from home

## SOLUTION

- Speeding up OS and application deployment with SCCM 2007 R2, MDT 2010, App-V, and built-in W7 deployment tools
- Faster data access via VPN Reconnect, and BranchCache™.
- Data protection and application management with BitLocker To Go and AppLocker.
- Reduced support costs with Windows Troubleshooting Platform and Problem Steps Recorder

## IMPACT

- User productivity benefits of 20 hours per PC user per year
- PC migration time reduced by 30 minutes per machine
- 25% fewer OS- and application-related calls to the help desk
- 10% reduction of PC-related power costs
- Application deployment time of 7 days instead of 10

### Estimated IT Cost Savings (\$ per PC per year)

Deployment	€19 (USD \$27)
Application Management	€2 (USD \$3)
Service Desk	€32 (USD \$46)
Security Tasks	€2 (USD \$3)
Server hardware; software maintenance for branch servers	€9 (USD \$13)
Power Savings	€13 (USD \$19)
<b>Total Estimated IT Cost Savings per PC</b>	<b>€77 (USD \$111)</b>

# Windows 7 TCO: Baker Tilly



BAKER TILLY

"The real story is that Windows 7 delivers great potential to free up our IT resources so that their efforts can be invested in improved processes. We've already gained tremendous value by deploying Windows 7 and expect to gain even more."

-Simon Harding-Rolls, IT Director, Baker Tilly

## SITUATION

- Baker Tilly Needed To:
- Optimize billable time for its professional services workforce
- Support revenue generation and business goals by delivering high-quality IT services
- Ensure mobile users are able to work more securely from anywhere

## 3 SOLUTION

- Expediting desktop management tasks with Windows PowerShell 2.0 and Group Policy.
- Reducing support costs with Problem Steps Recorder and Windows Troubleshooting Platform.
- Providing more transparent security with BitLocker, BitLocker to Go and Network Access Protection.
- Reducing PC power costs through Group Policy.

### Estimated IT Cost Savings (\$ per PC per year)

Deployment	£37 (USD \$61)
Desktop Management	£59 (USD \$97)
Power Savings	£20 (USD \$33)
<b>Total Estimated IT Cost Savings per PC</b>	<b>£116 (USD \$191)</b>

## IMPACT

- Reduced labor needed to build or re-image PCs by 2 hours per PC, or 50%.
- Reduced downtime is expected to increase billable time worth £425 (USD\$591) per PC per year.
- Service Desk staff spends 17% less time resolving issues.
- Power consumption reduced by 50%, or £20 (USD \$28) per PC per year (equaling £43,500 (USD \$60,465) per year in total).

# Windows 7 TCO: National Instruments



"We expect that Windows 7 will give our customers the same benefits of improved performance, more efficient test and measurement operations, and controllable IT costs that it provided us."

- Jay Garing, Global IT Manager, National instruments

## SITUATION

- National Instruments Needed To:
- Maximize performance of test and measurement products to solidify leadership role in their industry.
- Enable support staff to complete desktop engineering tasks more quickly and easy.

## 3 SOLUTION

- Help company engineers work more productive.
- Single image supported by Multi-Language UI.
- Faster PC refreshes due to data hard linking technology.
- Problem Steps Recorder and Unified Tracing helped reduce help desk analysis and resolution time.
- DirectAccess and BranchCache enabled remote updates and saved engineers 50 minutes per week in accessing data.

Estimated IT Cost Savings (\$ per PC per year)	
Desktop Engineering	\$60
Help Desk Services	\$13
Network Connectivity	\$7
Power Savings	\$1
Total Estimated IT Cost Savings per PC	\$81

## IMPACT

- Desktop engineering cost savings of \$60 per PC
- Help desk cost savings of \$13 per PC
- Engineer productivity improvements of 19 hours per user
- A 17-percent reduction in PC hardware refresh costs.
- 3,700% increase in lead generation activities at the time.
- 93% less time updating language-specific images



# Windows 7 TCO: BAA



"Our Windows 7 deployment will provide us with technologies and tools that help our PC users to be more productive and our IT operations to become more secure, agile, and efficient..."

-Philip Langsdale, Chief Information Officer, BAA Limited

## SITUATION

- BAA Needed To:
- Modernize and operate its airports as more efficient and independent businesses
- Provide rapid remote connectivity services that promote user productivity
- Reduce the time IT spends in routine application and desktop management tasks

## 3 SOLUTION

- Microsoft® Windows® 7 will improve user network access, security, and deployment capabilities.
- Application Virtualization (an MDOP technology) will improve PC user productivity, reduce IT costs, and help make its IT operations more secure, responsive, and efficient.

## IMPACT

- Deployment cost savings estimated at £22 (USD\$36) per PC/year
- Application management cost savings estimated at £52 (USD\$85) per PC/year
- Desktop management cost savings of about £27 (USD\$44) per PC/year
- Help desk costs savings estimated at £62 (USD\$102) per PC/year
- PC power savings estimated at £49 (USD\$81) per PC/year

Estimated IT Cost Savings (\$ per PC per year)	
Deployment	£22 (USD \$37)
Desktop Management	£27 (USD \$44)
Help Desk	£62 (USD \$102)
Application Management	£52 (USD \$85)
Power Savings	£20 (USD \$33)
Total Estimated IT Cost Savings/PC	£163 (USD \$268)

# Windows 7 TCO: City of Stockholm

"The transformation of our PC desktop infrastructure into a Windows 7-based environment has yielded significant benefits in terms of agility, improved desktop reliability and stability, and readily controllable IT costs.."

- Anette Holm, CIO, City of Stockholm

## SITUATION

- City of Stockholm Needed To:
- Establish more standardized and centralized IT capabilities, to be shared by all of the city's business units and administrative entities and to be available 24 x 7.
- Enable people visiting city offices to engage city services as quickly and easily as if they were home.

## 3 SOLUTION

- AppLocker provided ability to manage portfolio of supported applications, delivering a standardized and flexible desktop.
- Group Policy and Action Center reduced help desk calls.
- Applications dynamically delivered and streamed to desktops via System Center Configuration Manager and Application Virtualization.

Estimated IT Cost Savings (\$ per PC per year)	
Deployment and Engineering	\$12
IT Service Desk	\$22
Tier II/III Support	\$6
PC Power Reduction	\$3
Total Estimated IT Cost Savings per PC	\$43

## IMPACT

- Direct IT cost savings of \$43 per PC per year, enabled by rapid deployment, improved troubleshooting, PC power savings, and desktop management capabilities.
- Avoided the cost of PC user training valued at \$26 per PC.
- Reduction of help desk calls by 11% annually.
- Deployed PCs 55% faster than Windows XP.