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

Virtual Machine, application, anywhere
Applications
Virtualization (App-V)
Operating System
RemoteApp

Windows everywhere
Microsoft VDI
Client Hyper-V
MED-V
Why Microsoft VDI?

- Deliver great user experience
- Enable users to access corporate apps and data from any device/any location
- Reduce time to deploy applications and updates
- Balance user requirements with corporate compliance
- Protect against loss and leaks of sensitive corporate data
- Centrally administer and manage desktops
- Save resources with the flexible storage options right to your environment
- Reduce time to deploy applications and updates
VDI Software Components

**OS** on an access device

**Applications** that execute on the virtual desktops

**Windows** running in the VM

Any **partner technology**

**VDI server** and management

**Access Devices**

**Applications**

**Windows Client VMs**

**Partner Technology**

**Application Virtualization**

**Connection Broker**

**Hypervisor**

**Management**
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

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

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

**Mid-Range Thin Client**
- Run limited applications
- Tend to work on specific tasks
- Want a local browser
- Easily replaced device

**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
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
However, there were some challenges

<table>
<thead>
<tr>
<th>Security</th>
<th>Patching</th>
<th>Total Cost of Ownership</th>
<th>Low Cost Devices Support</th>
</tr>
</thead>
<tbody>
<tr>
<td>Windows security approach is more proactive than the Linux embedded community*</td>
<td>Little difference between frequencies - clients apply patches every 15 months on average*</td>
<td>Lower TCO</td>
<td>Adding flexibility in form factors with Windows 10</td>
</tr>
</tbody>
</table>

* Based on an independent comparison study on thin client market by crimson marketing in Aug 2013
Introducing Windows 10 IoT
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
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
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
How do our Customers use it
Customer Reference Title

Actionable Description

Challenge
Fill in text here

Tactics
Fill in text here

Results
Fill in text here

View the story here

Customer Logo

Quote Goes Here

Name
Title
Windows 7 and MDOP Saves Customers Money Today

Deploy Windows 7 and MDOP for Real Cost Savings

| Service Desk | $22-62 |
| Desktop Management | $25-98 |
| Deployment & Provisioning | $12-61 |
| Power Savings | $3-45 |

**Total Direct IT Costs Savings**

$43-268

Microsoft Desktop Optimization Pack for Software Assurance

Application Management Best Practices w/ APP-V

Up to $82

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

- **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%

- **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%

- **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

National Instruments

- 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

BAA

- 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 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.

“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

Estimated IT Cost Savings ($ per PC per year)

<table>
<thead>
<tr>
<th>Description</th>
<th>Cost</th>
</tr>
</thead>
<tbody>
<tr>
<td>Deployment</td>
<td>$28</td>
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<tr>
<td>Desktop Management</td>
<td>$25</td>
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<tr>
<td>Service Desk</td>
<td>$36</td>
</tr>
<tr>
<td>Power Savings</td>
<td>$45</td>
</tr>
<tr>
<td>Branch office network bandwidth costs</td>
<td>$14</td>
</tr>
<tr>
<td><strong>Total Estimated IT Cost Savings per PC</strong></td>
<td><strong>$148</strong></td>
</tr>
</tbody>
</table>
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
Windows 7 TCO: 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

**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.

**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 $33) per PC per year (equaling £43,500 (USD $60,465) per year in total).

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

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<tr>
<td>Deployment</td>
<td>£37 (USD $61)</td>
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<tr>
<td>Desktop Management</td>
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<td>Power Savings</td>
<td>£20 (USD $33)</td>
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<tr>
<td><strong>Total Estimated IT Cost Savings per PC</strong></td>
<td><strong>£116 (USD $191)</strong></td>
</tr>
</tbody>
</table>
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.

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.

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

"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

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<td>Desktop Engineering</td>
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<tr>
<td><strong>Total Estimated IT Cost Savings per PC</strong></td>
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Windows 7 TCO: BAA

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

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

"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

Estimated IT Cost Savings ($ per PC per year)

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<td>£20 (USD $33)</td>
</tr>
<tr>
<td><strong>Total Estimated IT Cost Savings/PC</strong></td>
<td><strong>£163 (USD $268)</strong></td>
</tr>
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</table>
Windows 7 TCO: 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.

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.

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.

"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

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