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# Virtualization Technologies

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Trevor Timmons - Colorado

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# Colorado Background

- Citrix Metaframe
- Predominantly Thin Clients (2 to 1 ratio)
- Desktop/Laptops
  - High-need Power Users
  - Special Situations (scanner workstations, etc.)
  - Development

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# As-Is

- Wintel Servers
  - Approximately 40 in place
- Office 2007
- Desktop OS: Windows XP

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# To-Be

- Six Blade Servers
- Cisco UCS
- Office 2010
- Desktop OS: Windows 7
- Citrix XenApp

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# Drivers

- Aging Infrastructure
- “Rich” Content
- Ubiquitous Streaming Content in Websites
- Right-sizing of Agency Data Center
- Centralized Administration

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# Security Issues with Virtualization

- Double-edged Sword
- VMs Individually Can Be Highly Secure
- New Attack Vectors

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# Advantages - Security

- Purpose-built VMs
- Isolation of VMs for Specific Needs
- Rapid Response/Provisioning Capability

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# Disadvantages - Security

- Maintenance/Patching of Images
- Hypervisor Management
- Console Access
- Guest-Host Network Fabric
- Network Segregation and Isolation



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# Resources

- NIST SP 800-125, *Guide to Security for Full Virtualization Technologies*, January 2011
- SANS.org: Security 577 – Virtualization Security Fundamentals
- VMware Security Training
- Microsoft Hyper-V Training



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# Thank You!

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- Trevor Timmons
- CIO, Colorado Secretary of State
- [trevor.timmons@sos.state.co.us](mailto:trevor.timmons@sos.state.co.us)