Desktop Virtualization and Cloud Computing Systems Security
Audit Committee Item 5
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Virtual Desktop Infrastructure

- 9 Components
- How It Works
Virtual Desktop Infrastructure

VDI COMPONENTS

- Thin-Client, Browser Based, Smart Device Access
- Hypervisor
- Virtual Desktop Server
- Connection Broker
- Virtual Desktop Storage
- Remote Access Gateway
- Network
- Virtual Desktop Image
- Virtualized Applications
Virtual Desktop Infrastructure

*Thin-Client, Browser Based & Smart Device Access*

- Thin Client – a small office device that takes the place of a PC or laptop. Small enough to be mounted to the back of the monitor.

- Browser Based Access – Java-based client that can be ran from a PC or laptop (regardless of Operating System) in order to access the VDI solution.

- Smart Device Access – Software that enables a user to access the VDI solution from a smartphone, tablet, netbook, or similar personal computing device.
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**Hypervisor**

- Server Software that Allows Virtualization
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Virtual Desktop Server
20 to 100 Virtual Desktops per Server
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Connection Broker

- Negotiates (Brokers) Virtual Desktop Services between VDI Servers and Clients
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Virtual Desktop Storage

- Storage for the Desktop Software Components (Desktop Image)
- Not to be confused with Data Storage
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Remote Access Gateway & Network Infrastructure

- Physical and Logical Network Services including:
  - LAN
  - WAN
  - Firewalls
  - Gateways
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Virtual Desktop Image

- The Base Virtual Desktop Configuration
- Also known as the “Golden Image”
- Usually includes the standard applications like:
  - Microsoft Office Suite
  - Microsoft Internet Explorer
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**Virtualized Applications**

- Applications that are Streamed, Hosted, or Extended to the Virtual Desktop

  - **Streamed Examples**
    - Adobe Acrobat Pro and MS Project

  - **Hosted Examples**
    - MS Visio and MS OCS

  - **Extended Examples**
    - OpenText Right FAX, McAfee USB Manager, and Roxio Image Creator
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How It Works - Overview

- Client requests a Desktop from the Broker
- Broker Negotiates Virtual Connections
- Broker Delivers Virtual Desktop Image to the client
- Virtual Applications are streamed to the Desktop or hosted by the Virtual Server. The Virtual Desktop can be extended to the locally installed applications
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*How It Works – Detailed*

- Client requests a Desktop from the Broker
- If the Client is connecting via the Internet, it will need to pass through our firewalls & VDI Gateways
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*How It Works – Detailed*

- Broker Negotiates Virtual Connections Between Virtual Desktops and Virtual Servers
- The VDI Servers send the Virtual Desktop Images from the VDI Storage to the Clients via the Broker.
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*How It Works – Detailed*

- The VDI Servers talk with State Fund’s Applications, Services, and Server on behalf of the clients via the virtual desktops.

**Streamed, Hosted, Or Extended Apps**

State Fund’s Apps, Servers & Services