

TransITech 2012

Session #3: Stuck in Yesterday – Shedding the Burden of Legacy Technology

How Critical Infrastructure Choices Can Be Used to Shed the Burden of Legacy Technology

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Key Choices have cumulative benefits

Key Choices we have made

Virtualization for Servers

Virtualization for Storage

Virtualization for Applications

Software as a Service (SaaS)

Key Choices have cumulative benefits

Virtualization of servers and storage delivers some common benefits:

- Reduced cost of hardware maintenance
- Reduced cost of cooling
- Hot swap hardware repair to reduce O/T costs and reduce downtime
- Disaster Recovery to secondary site is simplified

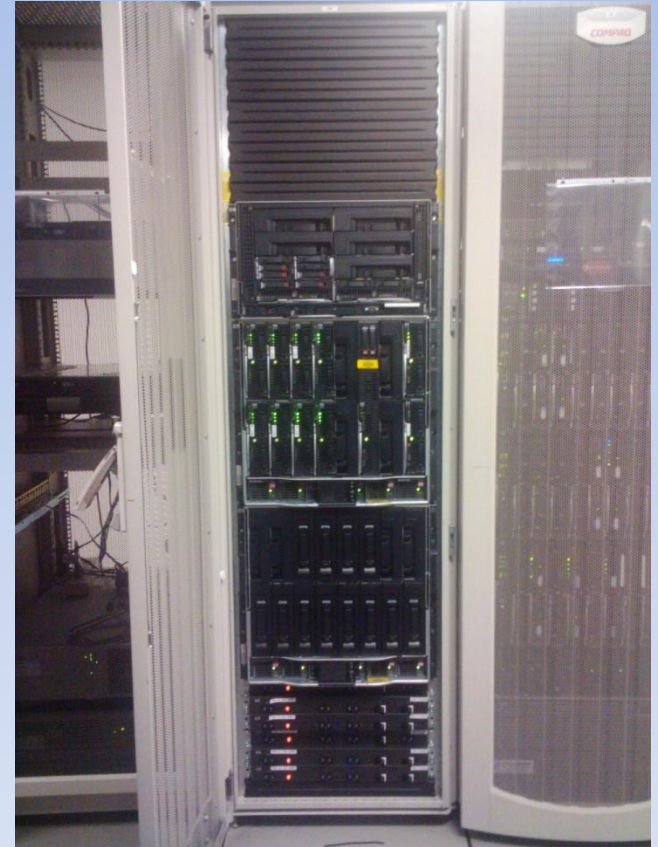
Benefits of Virtualization for Servers

- Higher utilization of hardware capacity:
 - CPU's, 4 to 1 reduction
 - Memory, about 20% savings
 - Storage, about 20% savings
- Load balancing across blades results in:
 - Higher uptime
 - Improved capacity and performance

Benefits of Virtualization for Servers

Example of HP C7000 Chassis

- 8 Blades, 64 cores
- About 300 VM's
- A little over 32 VM's per blade
- Buy minimal configuration
- Add Blades, memory as need
- Charge per project, upgrade, etc



Benefits of Virtualization for Storage

- Higher utilization of physical storage
 - One pool to serve multiple OS's
 - Can create any size LUN (ex 182.5 Gb)
 - Can extend LUN on the fly, no downtime
 - Overall 2x higher utilization of physical disk storage space

Benefits of Virtualization for Storage

Example of HP EVA 6400

- 57 TB in use
- Future growth to 110 TB
- Buy minimal configuration
- Add storage as needed
- Has Data Replication function
- Charge per project, upgrade, etc



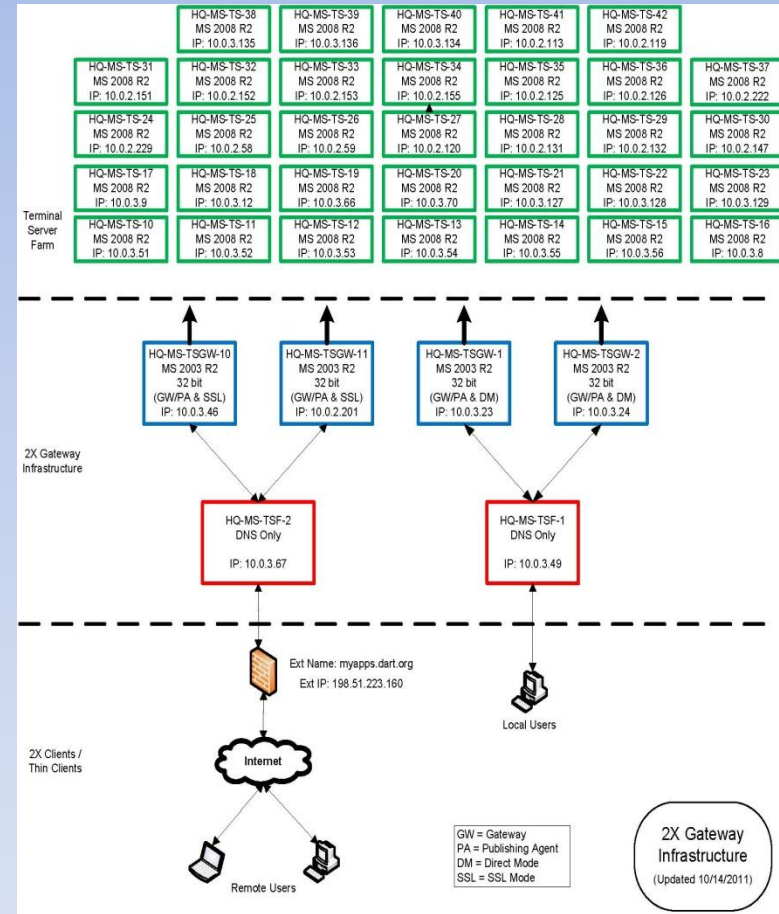
Benefits of Virtualization for Applications

- Leverage server and storage virtualization
- Extend the useful life of the current desktop 3x
- Deliver applications to multiple device types
 - Thin client devices
 - Mobile devices (tablets)
 - Home desktops
- Reduce technical support costs:
 - Distribute new apps and upgrades centrally
 - Less frequent desktop visits
 - Reduce the time of each desktop visit

Benefits of Virtualization for Applications

Example of Terminal Server Farm

- 33 TS now, growing to 53
- About 40 users per TS
- Conducted performance tests using load generator
- MS TS services, 2X gateway
- Buy minimal configuration
- Charge per project, upgrade, etc



Benefits of SaaS

- Deliver SaaS to mobile devices (tablets)
- Deliver SaaS to home desktops
- Leverage the Cloud
 - Ride the lowering cost curve
 - Right size for your environment
- DART is moving to delivering E-mail as a service

Current State Financial Summary for Delivery of Personal Productivity Software

- The current internal solution utilizes a blend of tools and multiple vendors including Novell, Microsoft, FileNet, AT&T.
- Results from a consulting study we commissioned
- The cost per user on a monthly basis is:
 - *Currently* **\$37.42**
 - *Five Year Average* **\$38.60**
- Annual average cost of delivery is \$926K
- Current Basic Infrastructure costs deemed lower than peers

Personal Productivity Software Messaging & Office Options

- Three of the solutions provide a cost savings over the current environment. Each of the cloud solutions is more cost effective as follows:

– <i>Current internally hosted 5 year average</i>		<i>\$38.60 /month/user</i>
– <i>Microsoft Office 365 with Web Office</i>	<i>-18%</i>	<i>\$31.76 /month/user</i>
– <i>Microsoft Office 365 with Office Pro</i>	<i>-14%</i>	<i>\$33.38 /month/user</i>
– <i>Google Apps* with supporting tools</i>	<i>-49%</i>	<i>\$19.86 /month/user</i>

Cost/month/user includes amortizing migration cost over five years

- * Google mail and apps delivers less functionality than the full M/S suite but mail is satisfactory for everyone, Google apps adequate for 80% and 20% “power users” will retain M/S Office Pro

Key Choices have cumulative benefits

Equipment replaced

About 11 racks so far
out of about 23

Hardware Maintenance \$

- FY11 - \$143K
- FY13 - \$ 77K

Software Maintenance \$

- FY11 - \$570K
- FY13 - \$500K



Key Choices have cumulative
benefits

Questions ?