

CLIENT VIRTUALIZATION

Lake Solutions

Hewlett-Packard

VMware

APRIL 2010



AGENDA

08.30 Registrierung

09.00 Begrüßung

09.10 Vorstellung realisierter Projekte

09.30 Wieso Client Virtualisierung?

09.45 VMware View 4

10.30 Pause

10.45 HP Thin Client, Server, Storage

11.15 Live-Demo

11.45 Zusammenfassung, Q&A

12.00 Stehlunch

Walter Keller Lake

Daniele Palazzo Lake

Gunnar Habitz HP

Fabian Waser VMware

Gunnar Habitz HP

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Gunnar Habitz HP

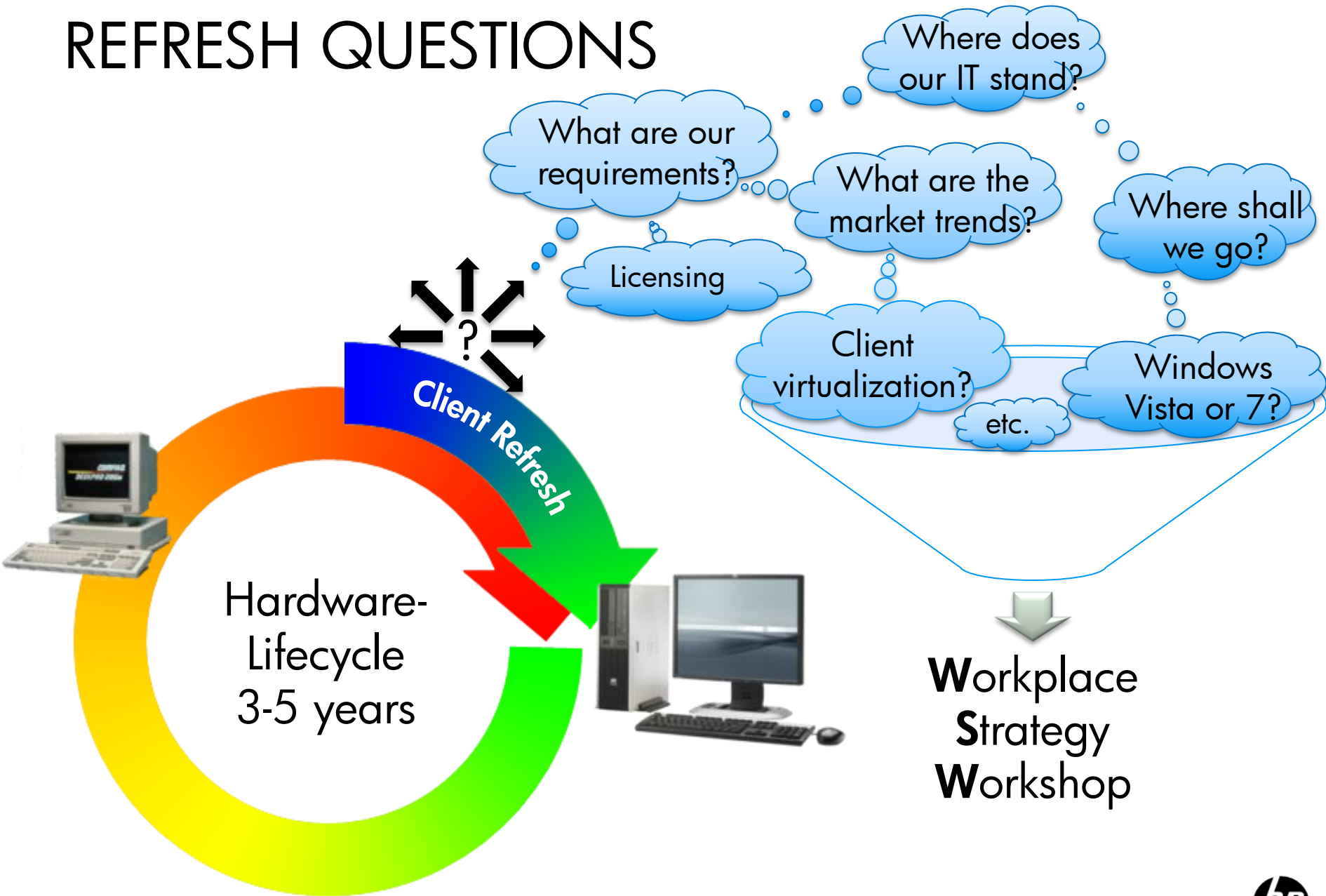


WIESO CLIENT- VIRTUALISIERUNG?

Gunnar Habitz



REFRESH QUESTIONS



ADDRESSING BUSINESS CHALLENGES

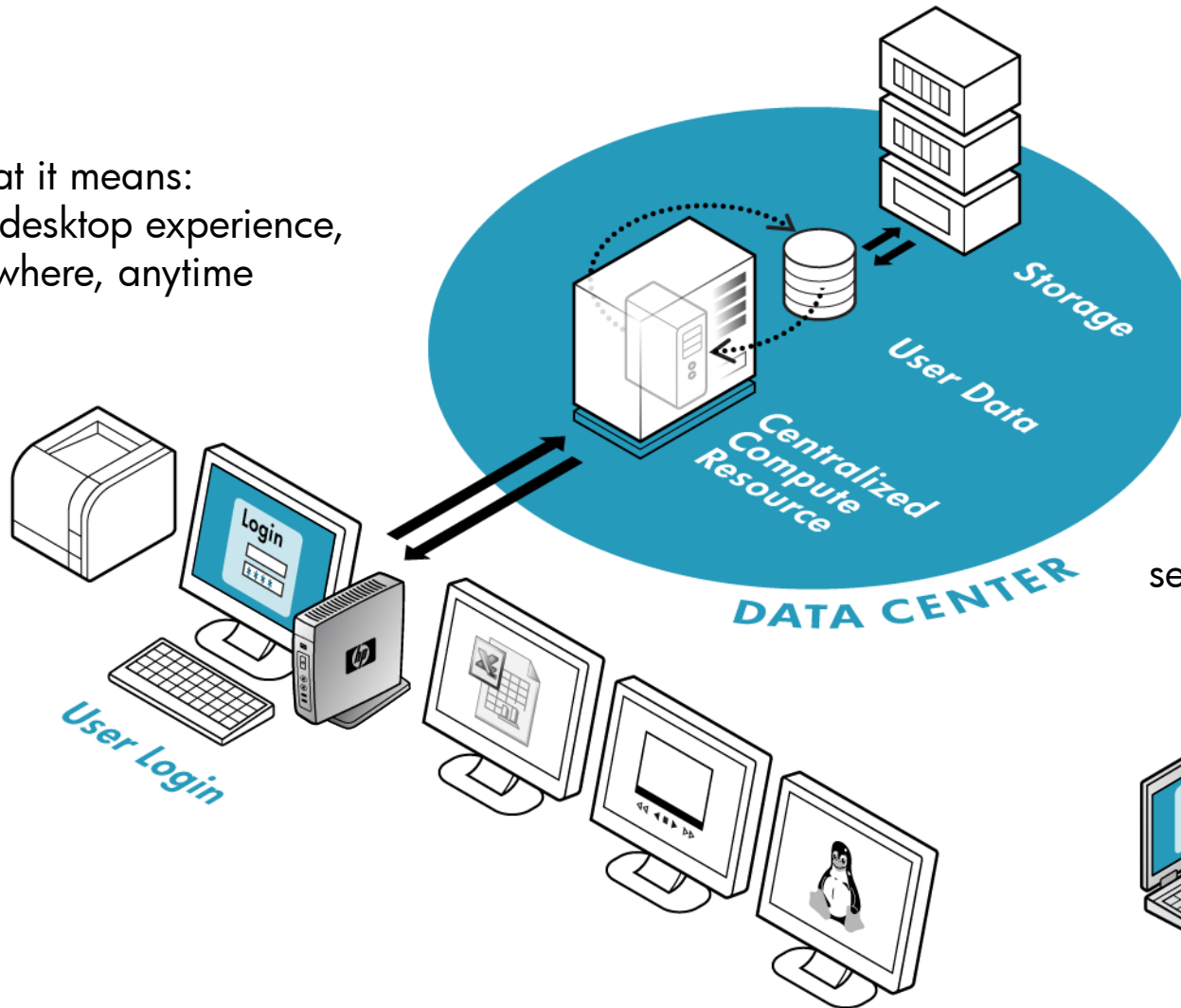


Traditional Client Computing Models are not optimized to address these challenges holistically



THE REMOTE DESKTOP EXPERIENCE

What it means:
The desktop experience,
anywhere, anytime

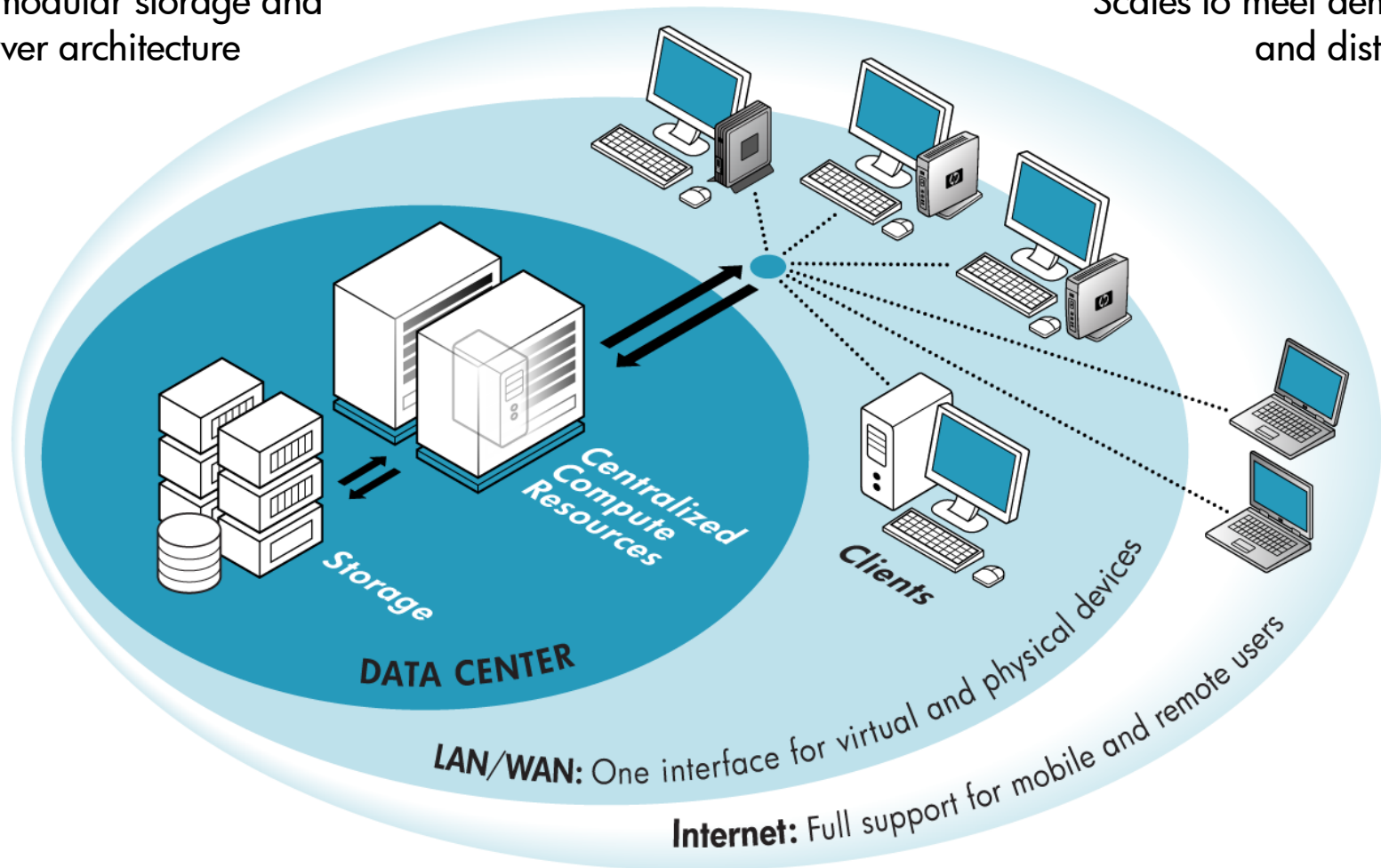


How it works:
Individual login
serves an individual
desktop

THE CENTRALIZED IT EXPERIENCE

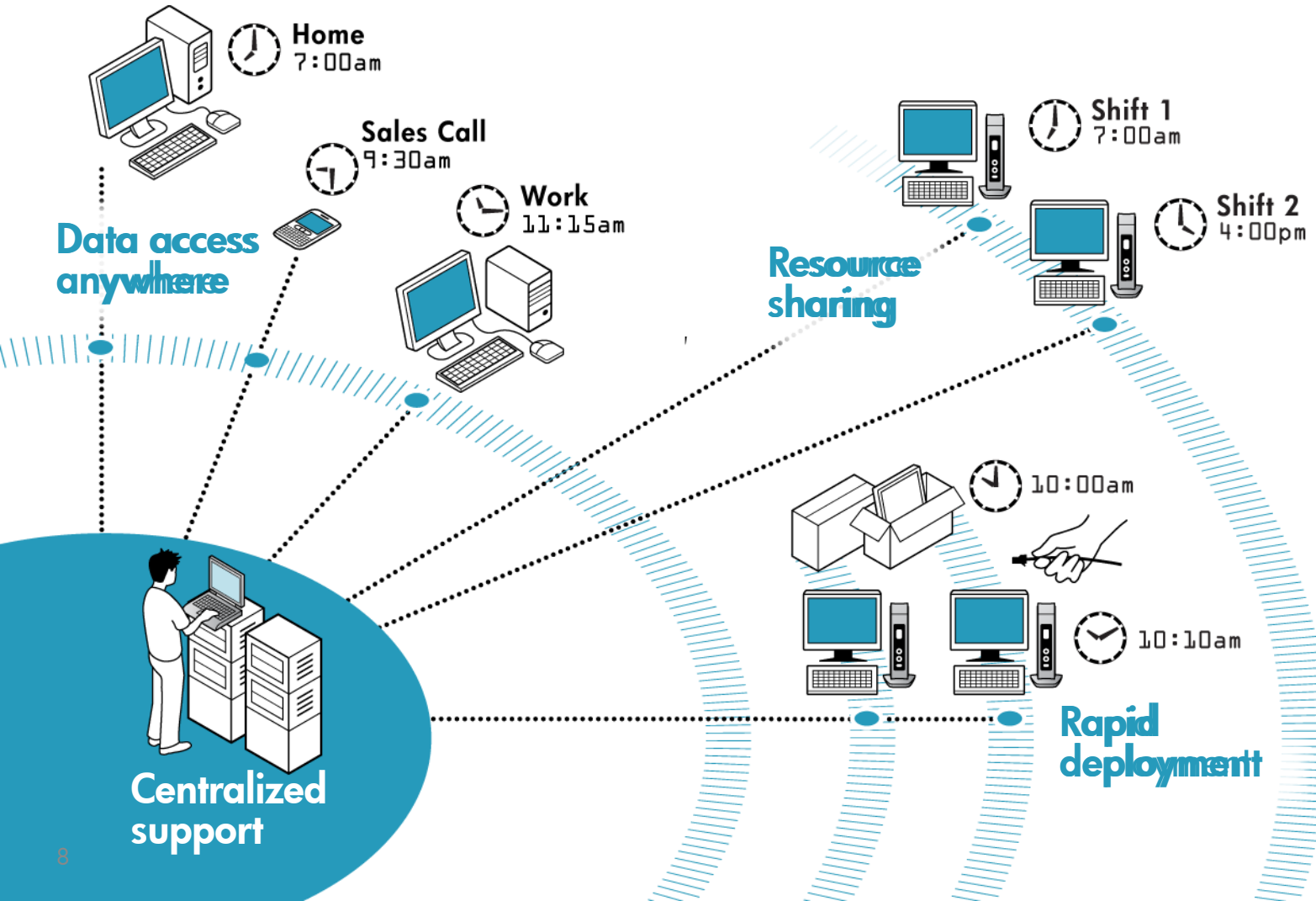
A modular storage and server architecture

Scales to meet demand and distance



ADVANTAGE FOR OPERATIONS

How can IT stay on pace with the business?



ADVANTAGE FOR FINANCE

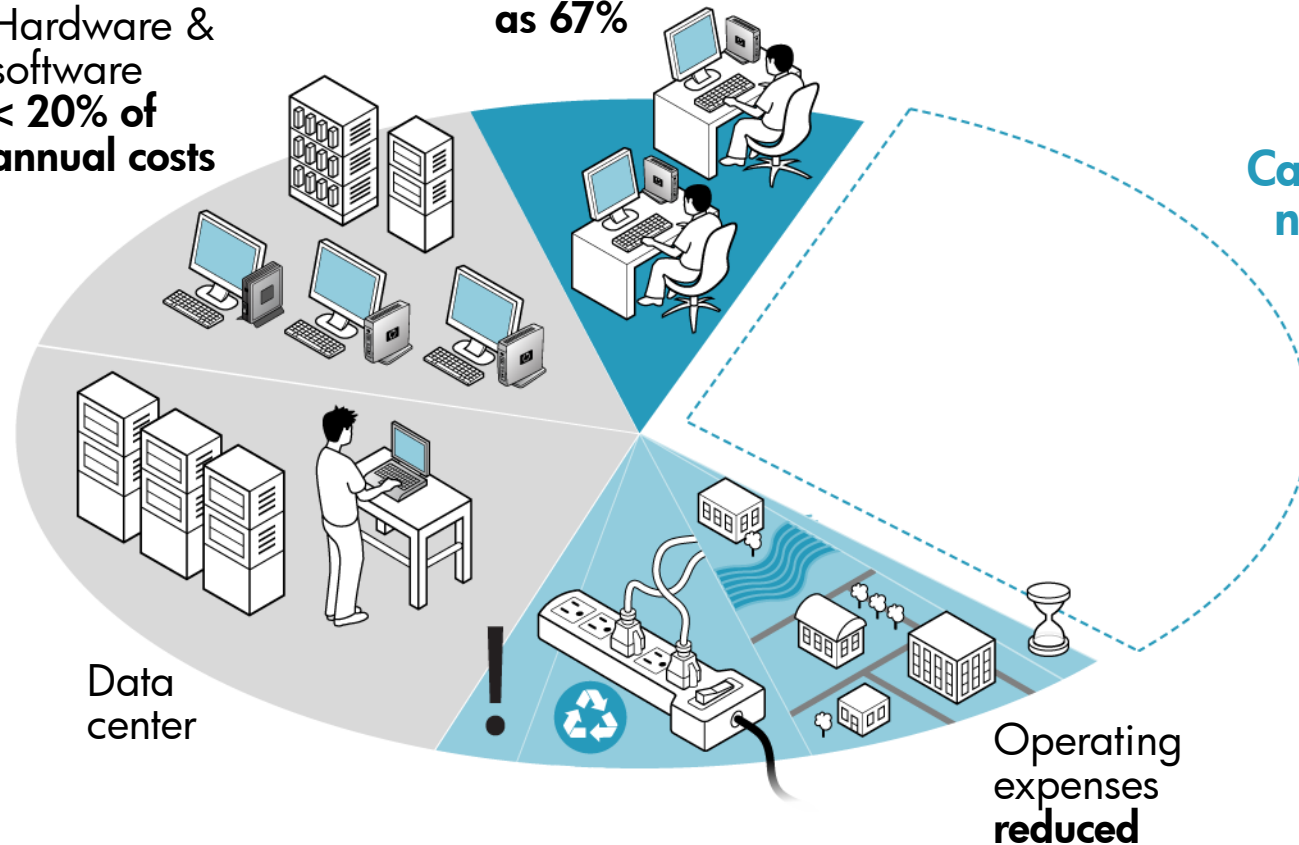
Virtualized Clients

Hardware & software
< 20% of
annual costs

Deskside support
reduced as much
as 67%

Where is the return on
the investment?

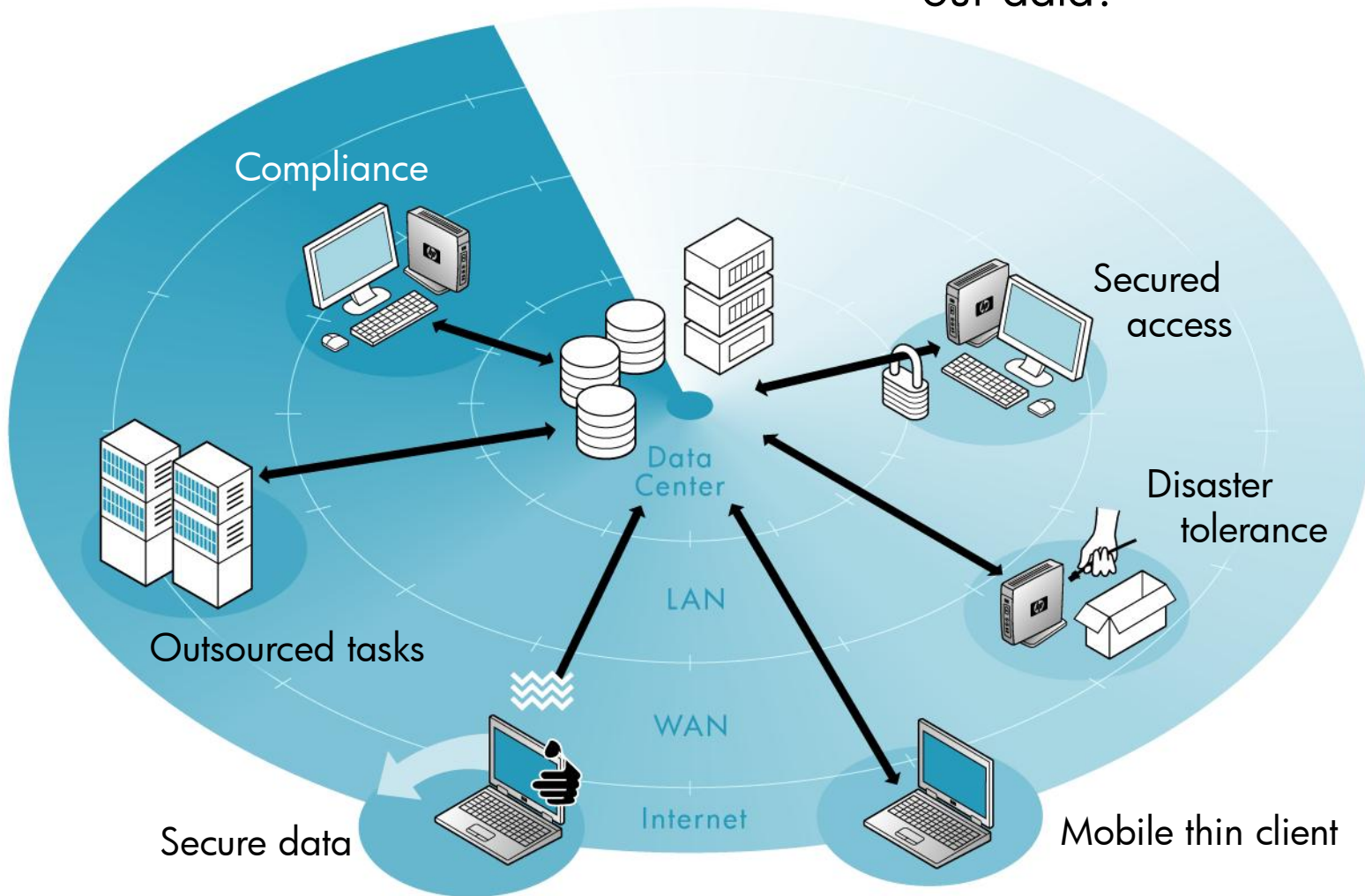
Capacity for
new ventures
expanded



ADVANTAGE FOR SECURITY

Virtualized Clients

How do we protect our data?



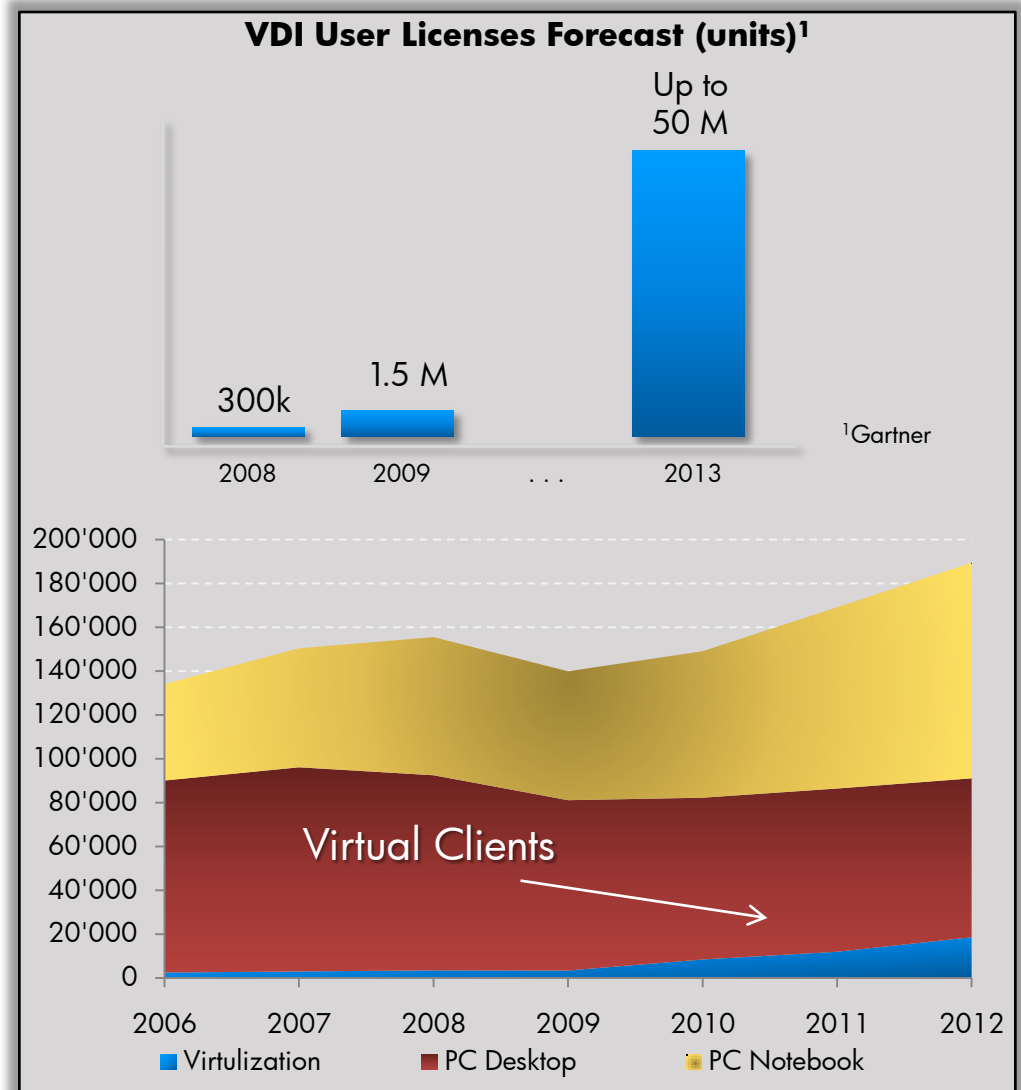
VIRTUALIZATION MARKET TRENDS

Technology

- Next-gen hypervisors
- Offline VDI enablement
- Graphics-based protocol enhancements
- Maturing management applications for client virtualization
- Better performance, more users per core on server

Industry

- Analysts expect growth in VDI
- Many companies have indicated aggressive deployment plans
- Emergence of a thin compute devices



SOFTWARE

VMware View 4

Fabian Waser



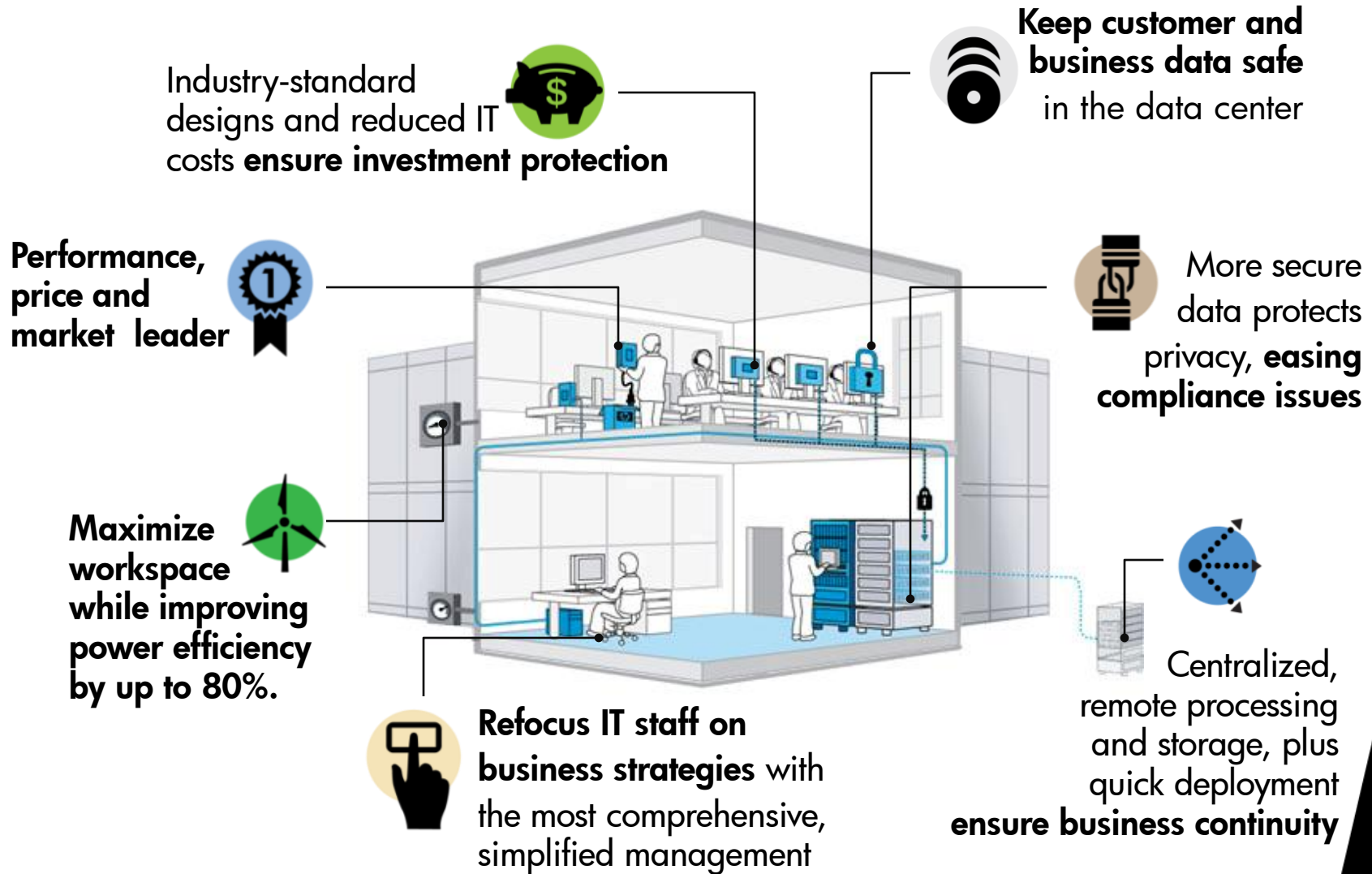
HARDWARE

HP Thin Clients

Gunnar Habitz



HP THIN CLIENTS EXTEND THE BENEFITS OF CLIENT VIRTUALIZATION



HP COMPLETE THIN CLIENT PORTFOLIO


























Price and performance

Flexibility and functionality



HP THIN CLIENT & ENVIRONMENT

100% ENERGY STAR® Qualified
and EPEAT® Registered

Thin Clients							Specialty Thin Clients	
<p>HP t5325</p>  <p>HP ThinPro</p>	<p>HP t5145</p>  <p>HP Thin- Connect</p>	<p>HP t5540</p>  <p>MS Windows CE</p>	<p>HP t5545</p>  <p>HP ThinPro</p>	<p>HP t5630w</p>  <p>MS WES 2009</p>	<p>HP t5740</p>  <p>MS WES 2009</p>	<p>HP t5745</p>  <p>HP ThinPro</p>	<p>HP gt7720</p>  <p>MS WES 2009</p>	<p>HP gt7725</p>  <p>HP ThinPro GT</p>
								
								

HP THIN CLIENT MOUNTING

HP Quick Release

- VESA compatible
- Quick and secured mounting to monitor, wall and below the desk
- „Sure-Lock“ mechanism prevents from theft



Integrated Work Center

- Elegance & free space at the desk
- Better ergonomics (height adjustments, swivel)
- Easy cabling with integrated port cover
- Compatible with many LCD monitors from HP (17", 19", 22")



HP t5325 Thin Client

- **Boot in seconds**, click and connect
- **Go green** – Lightweight design and < 8 W power consumption
- **Lowest cost VDI connectivity** appliance
- **Quick and easy** wizards for setup and deployments
- **Web Browser**
- Expanded multimedia and USB support



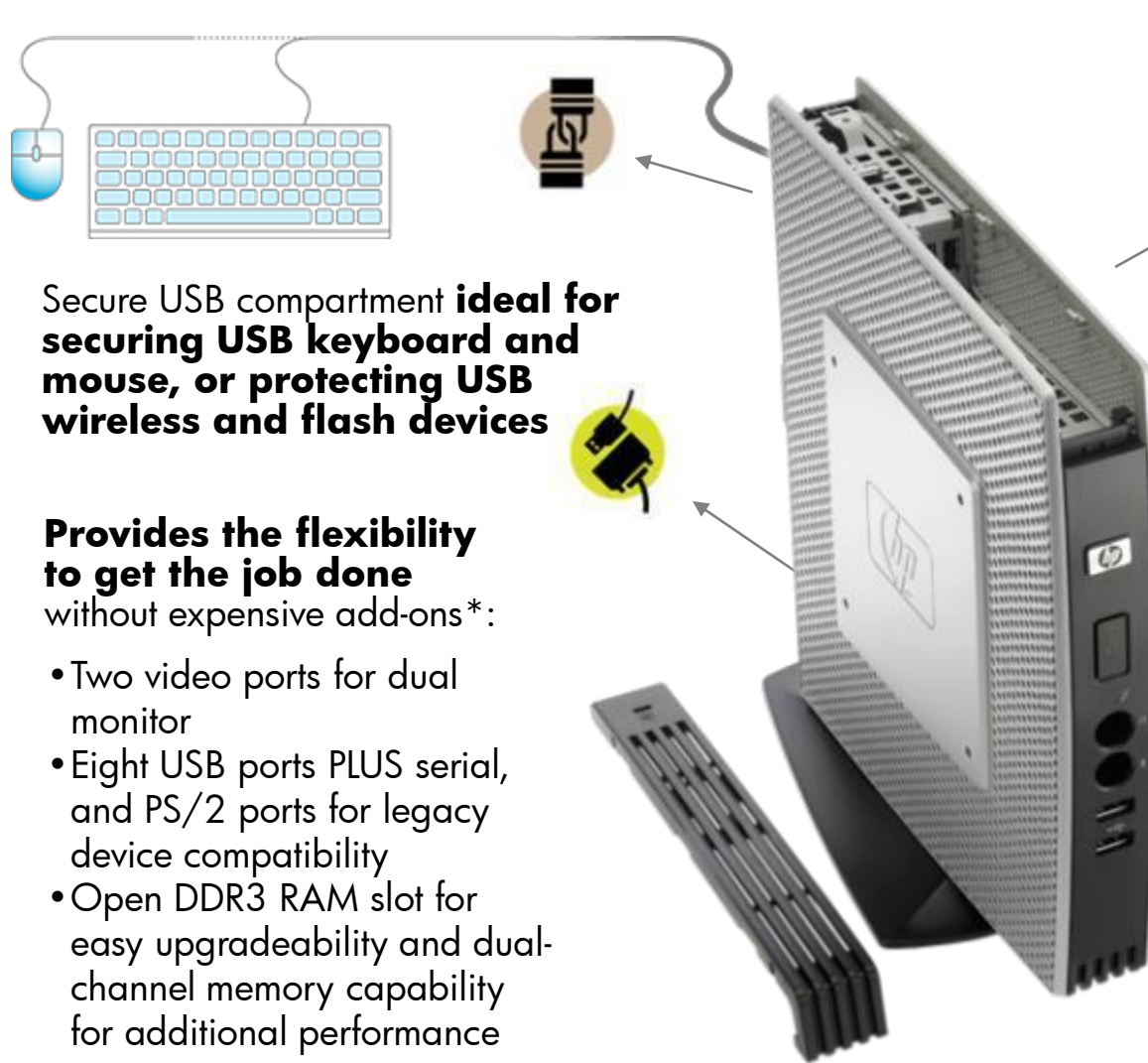
HP t5740/45 Thin Client



- **Intel** chipset & **Atom** CPU
- **Energy Star**® qualified
- Familiar **PC experience** with broad peripheral support and expanded **multimedia functionality**
- Windows Embedded Standard 2009 (t5740) or HP ThinPro Linux (t5745)
- Flexible mounting options
- Optional expandable storage and WLAN
- Choice of management tools (new HP Device Manager 4.2 in May 2010)



HP FLEXIBLE SERIES THIN CLIENTS



Secure USB compartment **ideal for securing USB keyboard and mouse, or protecting USB wireless and flash devices**

Provides the flexibility to get the job done without expensive add-ons*:

- Two video ports for dual monitor
- Eight USB ports PLUS serial, and PS/2 ports for legacy device compatibility
- Open DDR3 RAM slot for easy upgradeability and dual-channel memory capability for additional performance



PCIe x4 / PCI Expansion Module option lets you **add-in cards that you need***



Built-in power cord retention slot **prevents accidental power disconnection***



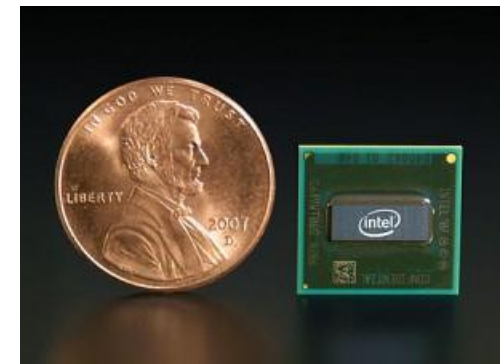
All HP thin clients come with complete remote management solutions, including HP Device Manager, so you can **control your thin clients from anywhere you have network access**

*These features are found exclusively on HP t5740 and HP t5745 models



INTEL ATOM N280 & GL40 CHIPSET

- Intel Atom N280* processor
 - Hyper-threaded for more computational capabilities
 - Faster: 1.66 GHz
 - L2 Cache: 512 KB
 - FSB: 667 MHz
 - Very low power demands: Max 2.5 W
- Intel GL40 chipset (normally used in notebooks)
 - DDR3 memory
 - DX10** capabilities for the future (Windows 7)
 - Built-in DisplayPort, SATA II, PCIe / PCI support
- Low power usage
 - Idle < 12.5 W (HP t5730: 17.5 W, HP gt7720: 46 W)
 - Off <= 0.6 W



* Intel's numbering is not a measurement of higher performance.

** DirectX® 10 requires Windows Vista. Windows 7 will support older DirectX 9 adapters using a WDDM v1.0 (Vista) driver. DirectX 10 requires a WDDM v1.1 (Windows 7) compliant driver.

HARDWARE

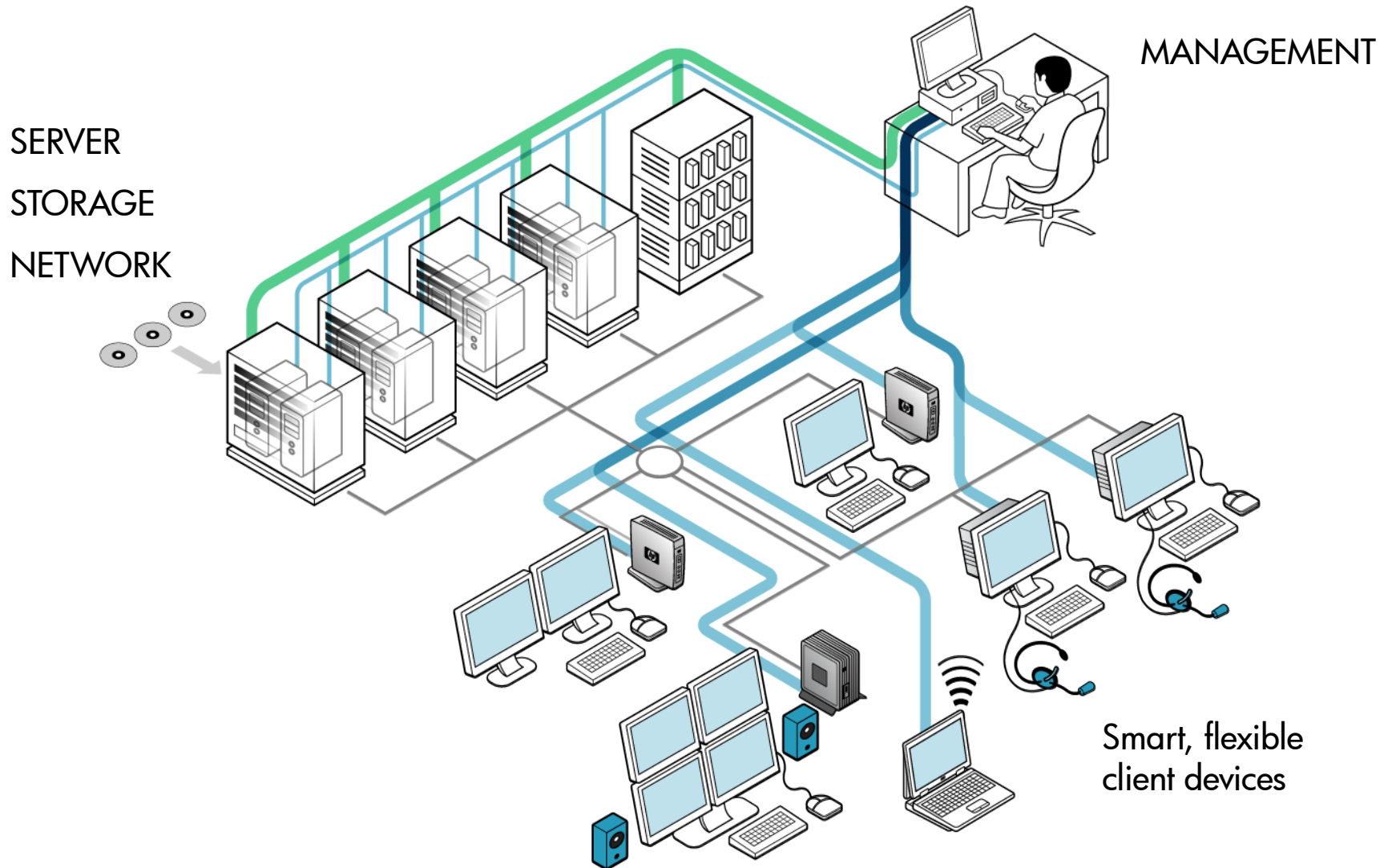
HP ProLiant Server

Serge Guex

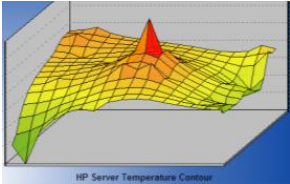


HP is your single-source client virtualization partner

HP integrates your virtual and physical worlds



HP Is Changing Computing



Energy efficiency

Accurate monitoring and intelligent



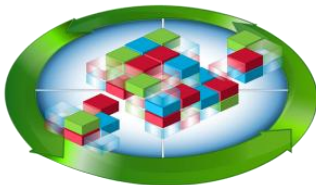
Ease of management

Integration, standardization, useful tools



Investment protection

Common modular platforms, standards based, quality design



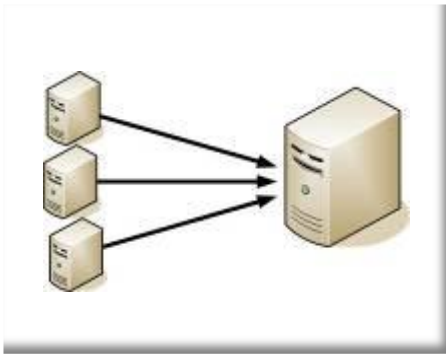
Powerful virtualization

Unified management and virtual I/O

Achieve 20:1 consolidation

Energy efficiency

Optimized for virtualization and consolidation



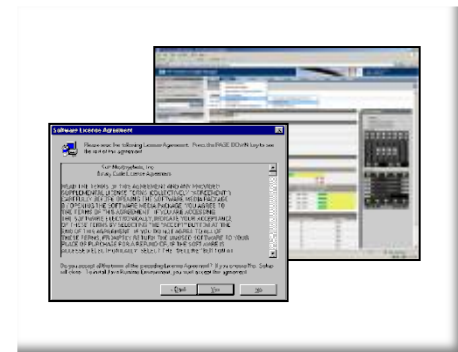
CONSOLIDATE

G4 → G6/7 20:1;
more than 95%
fewer physical
servers



DELIVERS

same compute with
97% less power



REDUCE

energy & software
license costs

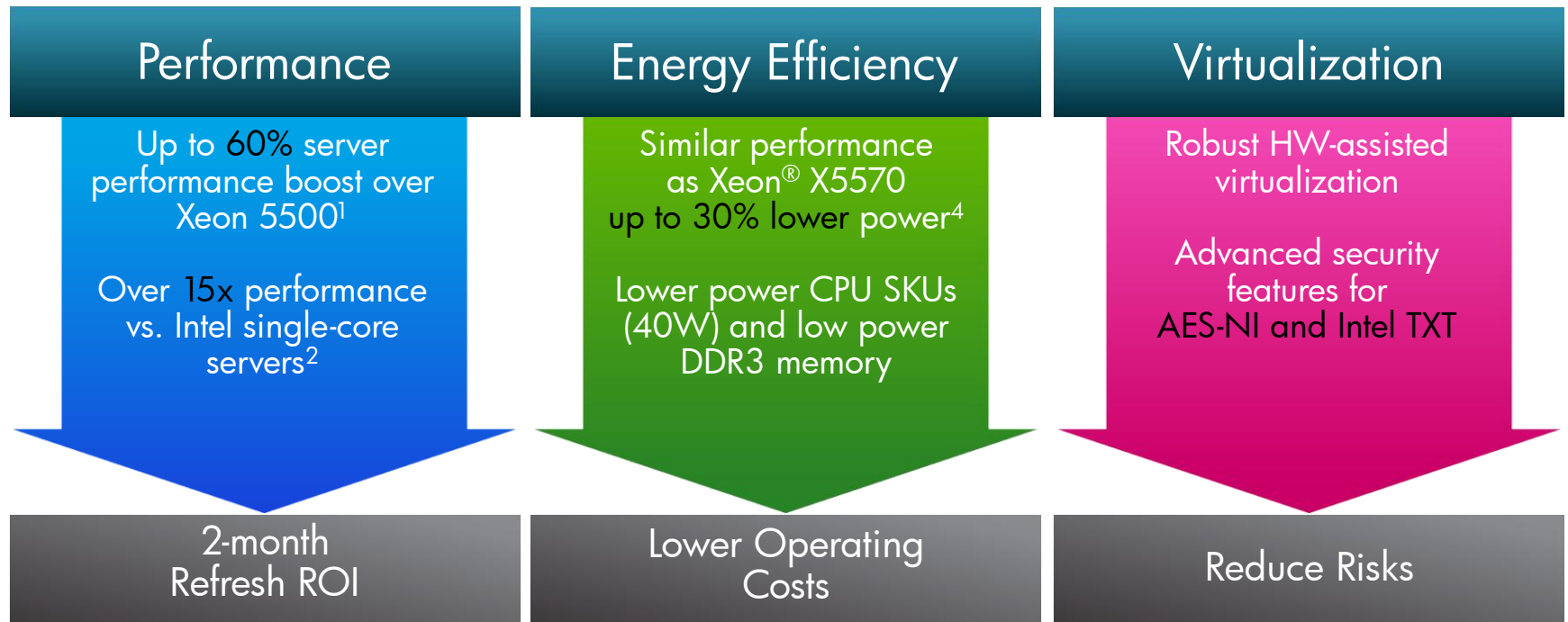
Pack 25x more compute capability in the same power envelope

Benefits of the Intel® Xeon® Processor



5600 Series

97% reduction in power and cooling costs with a 20:1 consolidation ratio.



1 Source: Internal Intel measurements for Xeon® X5680 vs. Xeon® X5570 on BlackScholes*

2 Source: Intel estimates as of Jan 2010. Performance comparison using SPECjbb2005 bops (business operations per second). Results have been estimated based on internal Intel analysis and are provided for informational purposes only. Any difference in system hardware or software design or configuration may affect actual performance.

3 Source: Internal Intel measurements. Xeon® X5670 vs X5570 – Measured results on server side java benchmark in conjunction with power consumption across a load line (SPECpower).

4 Source: Internal Intel estimates comparing Xeon® X5570 vs. L5640 SKUs using SPECint_rate_2006.

See backup for system configurations on all configurations.



Optimize Data Center Capacity

Energy efficiency

Reduce energy and reclaim capacity



**Accurately measure
power usage**

Safe
Confidently
protect circuits



**Safely cap power
consumption**

Reliable
Built into the hardware
independent of OS



**Lower power usage
through regulation**

Compatible
Supports any OS
or hyper visor

Extend the life of your datacenter

HP ProLiant: The Best Managed Server

Ease of management

Insight Control

Deploy Servers Quickly

12x increase in ProLiant deployment speed

Manage Health Proactively

Reduce unplanned downtime by up to 77%

Includes Systems Insight Manager and Insight Remote Support

iLO Advanced functionality

Reduce system administration expenses and travel costs

Control from anywhere



Triple data center capacity

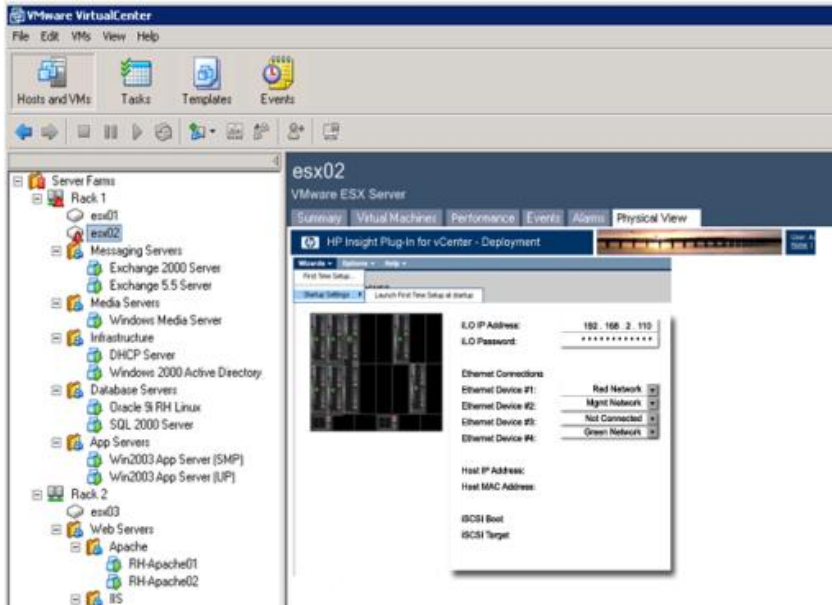
Optimize power usage

Integrate **vmware**

A new level of remote management

Manage ProLiant servers expertly

Ease of management



HP INSIGHT CONTROL FOR VMWARE vCENTER SERVER

- Extension of VMware vCenter user interface with HP specific data
- Unattended deployment of VMware ESX host servers
- Event monitoring and automated actions via vCenter alarms
- Integrated power measurement, regulation and capping
- Integrated HP storage management

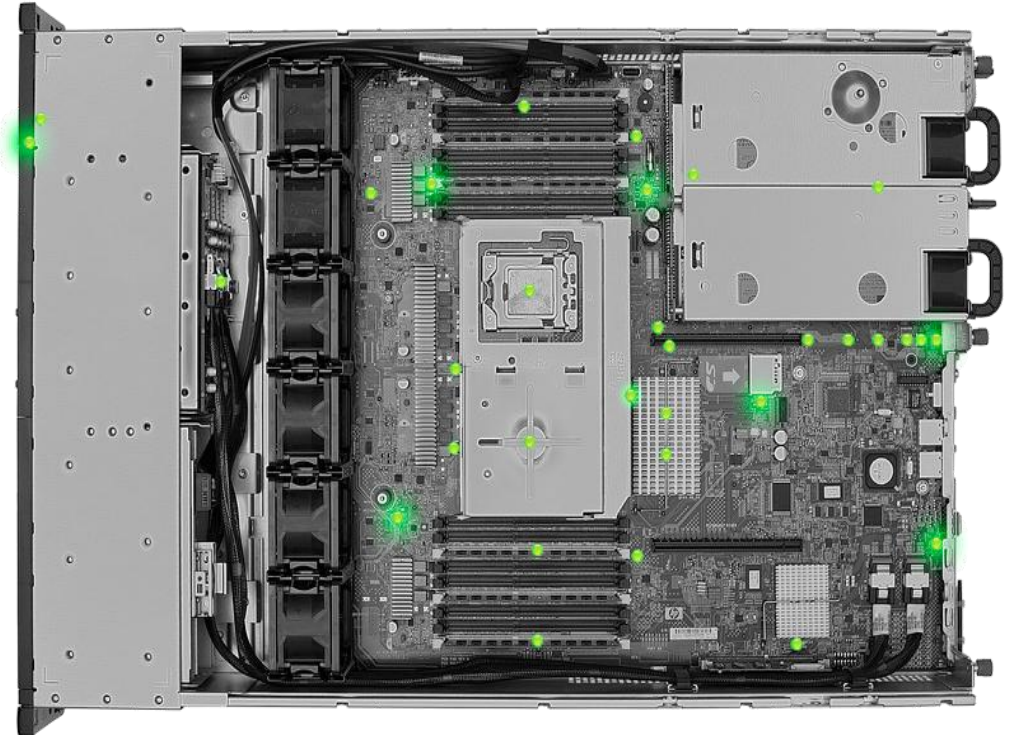
Only HP: Continuously Optimize Efficiency

Investment protection

32 smart sensors
manage temperature
across the server

Automated fan regulation

Automated
adjustment of
I/O and memory
slots

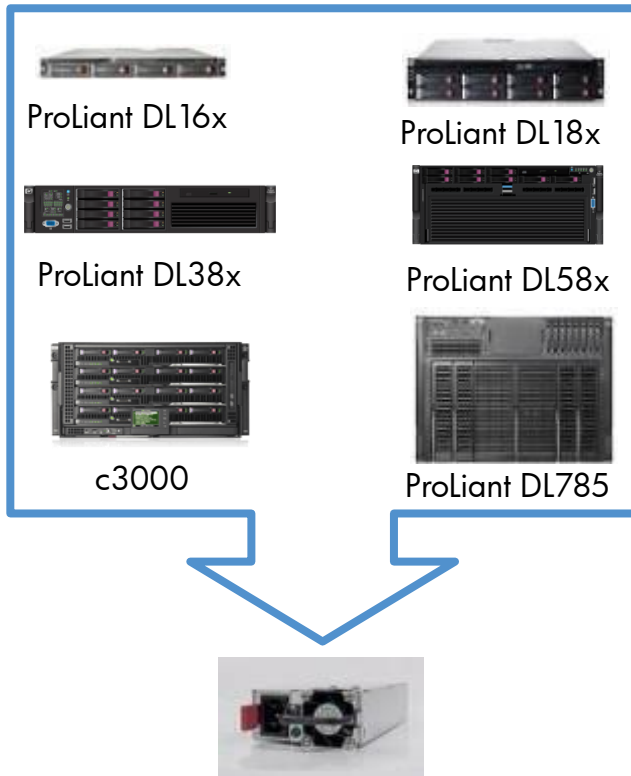


Prevents over-cooling and minimizes power usage

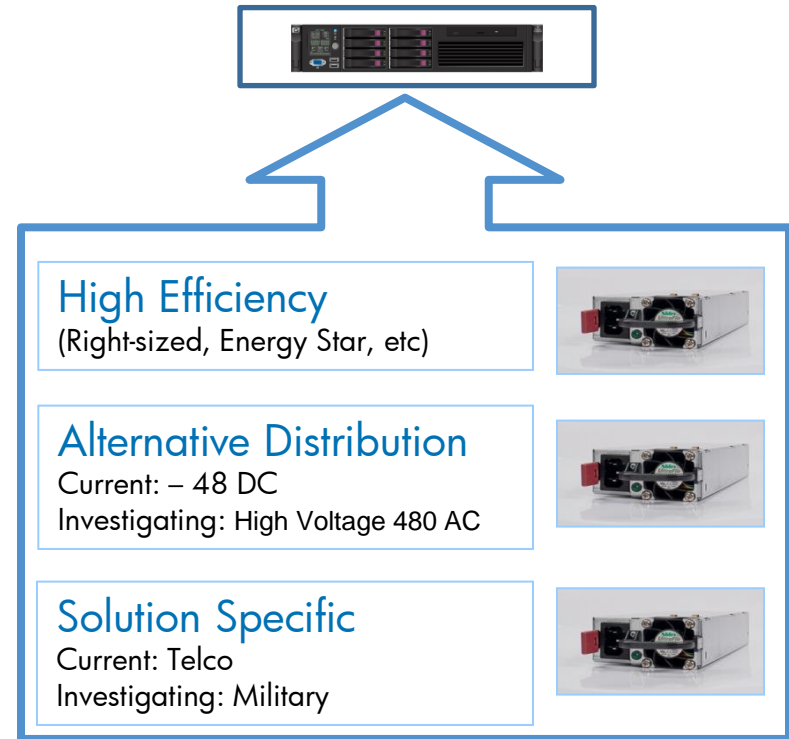
Common Slot Power Supply

Investment protection

Many Platforms



One Slot



Make existing power resources go further

HARDWARE

HP StorageWorks

Andreas Bisang



Storage Environment for Client Virtualisation

- P4000 G2



Storage challenges for today's Client Virtualization

Virtual Infrastructure

- Client Virtualization puts new requirements on storage

Business Continuity

- Yesterday's data availability doesn't address today's needs

Remote Office / Branch Office

- Storage solutions for remote sites are costly to acquire and operate

High Availability

... is driving storage requirements

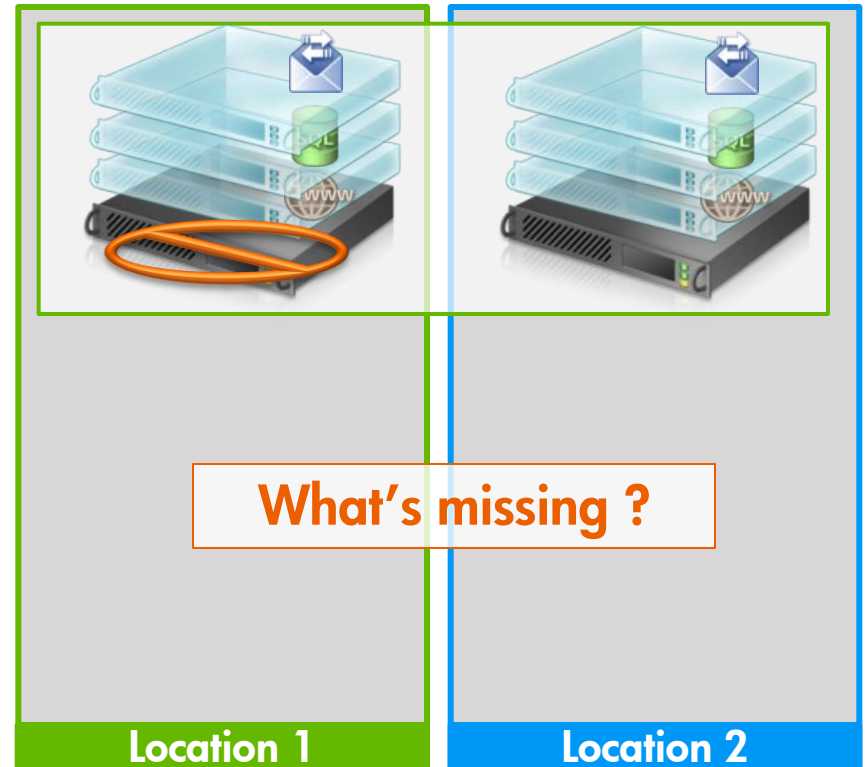
1. Critical Issue

Client virtualization causes a greater impact of a single server failure.

2. Resolution

Virtualization software vendors offer high-availability, e.g.

- VMware Vmotion
- VMware HA & FT



High Availability

a key storage deliverable for client virtualization

1. Critical Issue

Client virtualization causes a greater impact of a single server failure.

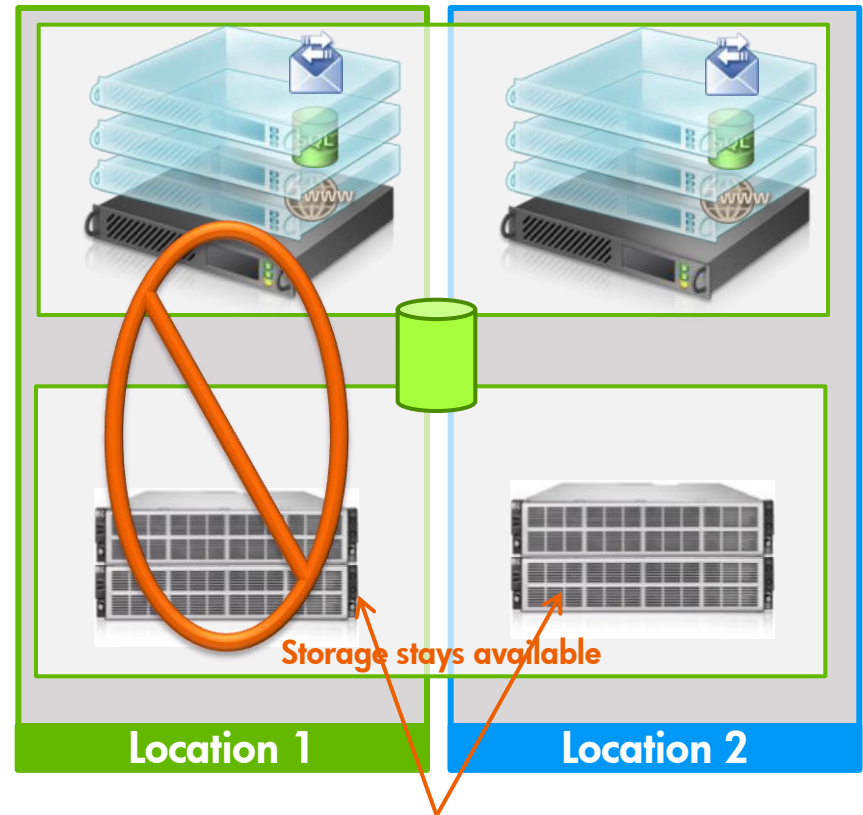
2. Resolution

Virtualization software vendors offer high-availability, e.g.

- VMware Vmotion
- VMware HA & FT

3. Storage Requirements

- All these features require **shared storage**
- For end2end business continuity, the **storage needs to be high available** as well



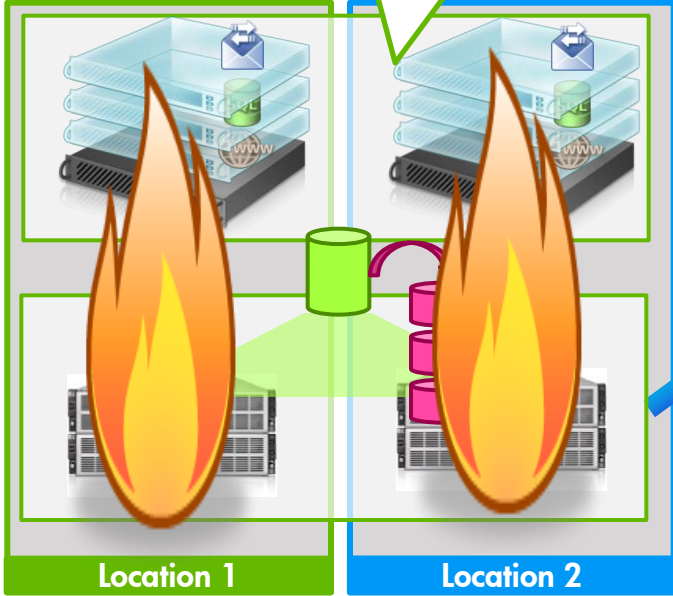
HP StorageWorks P4000 Data Security and Multi-Site Solution

- Fully transparent site failover
- As simple as RAID, no failover/failback management required
- Included free of charge with any P4000 system



HP P4000 Availability and Data Protection for Virtualized Environments

- **P4000 Multi-Site** provides storage availability even in case of a complete site failure
- **Combined with VMware HA** it provides an **end2end high availability** solution not requiring any user intervention or storage downtime



P4000 remote copy

- P4000 Remote Copy enables long distance disaster tolerance and is **integrated with VMware SRM** to allow a seamless failover of storage and VMs

- P4000 SnapShots (local and remote) enable space-efficient copies of data for fast recovery. **P4000 application integration makes sure copies are consistent.** Snapshots can furthermore be used as the source for a further backup to tape or D2D, avoiding any product impact.

P4000 SnapShots

VMware

P4000 Multi-Site

HP StorageWorks P4000 G2 iSAN Solutions

Cost effective, highly available storage for virtualization, easy to implement



	P4300 G2 MDL SAS Starter SAN	P4300 G2 SAS Starter SAN	P4500 G2 Virtualization SAN	P4500 G2 Multi-Site SAN	P4500 G2 Scalable Capacity SAN	P4000 G2 Storage Systems	P4000 Virtual SAN Appliance
Description	Perfect for consolidating storage for Windows or Linux servers, the P4300 G2 16TB MDL SAS Starter SAN delivers all features required to simplify storage consolidation in MS Windows environments	Perfect for first time virtualization projects, the P4300 G2 7.2TB SAS Starter SAN delivers the performance and features required for email, database and server virtualization	For virtual environments, the P4500 G2 10.8TB SAS Virtualization SAN offers performance optimized shared storage, cost effective high availability, scalable performance, and non-disruptive configuration changes	Simplify high availability with a cost effective P4500 G2 21.6TB SAS Multi-Site SAN. Avoid downtime in the event of a site failure with a fully automated, synchronously replicated storage system	Perfect for consolidating large Windows, Linux, Unix data volumes, the P4500 G2 MDL SAS 60TB SAN delivers the all the features required to simplify storage and grow your environment non-disruptively	Add P4000 Storage Systems to existing P4000 SANs solutions to modularly grow performance and capacity online, and one your schedule	Leverage the power of a physical SAN by transforming captive server and SAN disk drives into a virtual iSCSI SAN, facilitating shared storage and DR for small and remote offices.
Disk Drives	16, scales to 256	16, scales to 256	24, scales to 384	48, scales to 384	60, scales to 384	Varies	Varies
Starting Capacity	16.0 TB 7.2K MDL SAS	7.2 TB 15K SAS	10.8 TB 15K SAS	21.6 TB 15K SAS	60 TB 7.2K MDL SAS	Varies	Varies; license limit 10TB
Features	Storage Clustering - Network RAID 5/6/10 - Thin Provisioning - Application Integrated Snapshots - SmartClone - Remote Copy						
Replication for Remote Offices	Optional via VSA		10 licenses included			Optional via VSA	
Support coverage incl.	3 years, next business day (NBD) support for HW and SW					1 year HW & SW, NBD	1 year SW support, NBD

Q&A

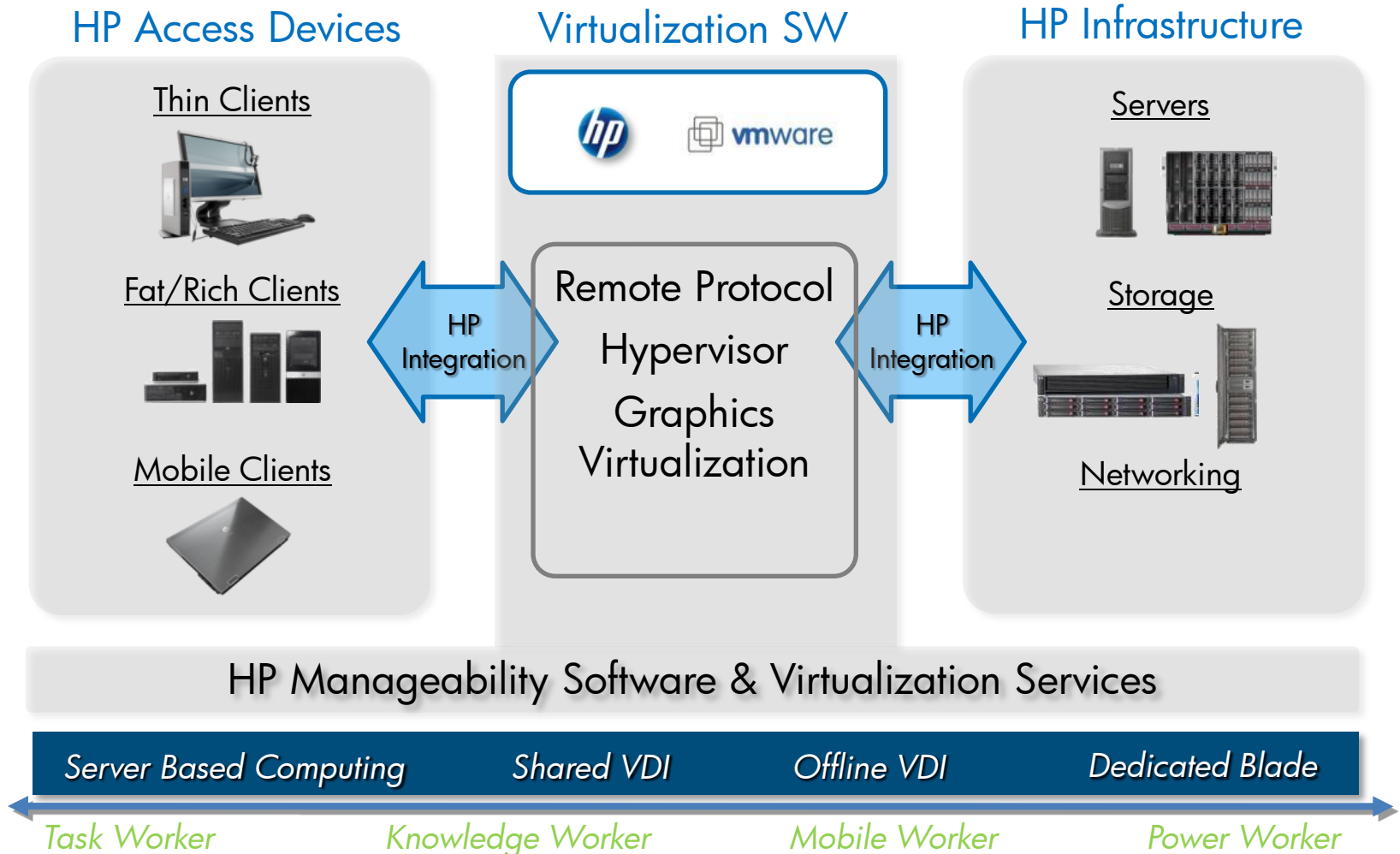


ZUSAMMEN- FASSUNG

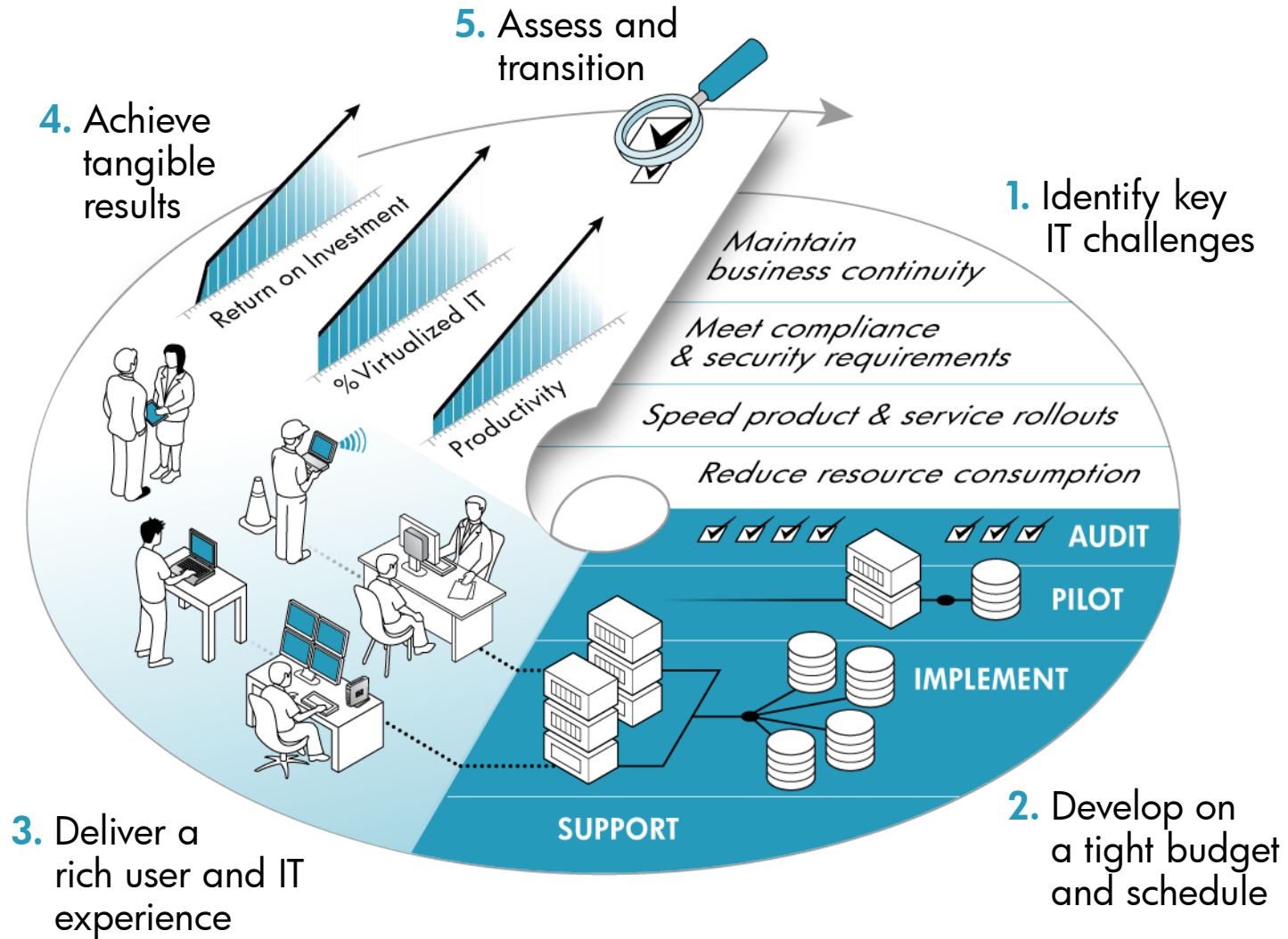
Gunnar Habitz



CLIENT VIRTUALIZATION



HP HAS THE EXPERTISE TO GUIDE YOUR PROJECTS TO SUCCESS



PLANNING IT RESOURCES FOR HEALTHCARE?

– How can we...

- Improve clinical workflow?
- Facilitate access to medical records?
- Improve the patient experience?
- Empower IT staff?
- Secure sensitive data?

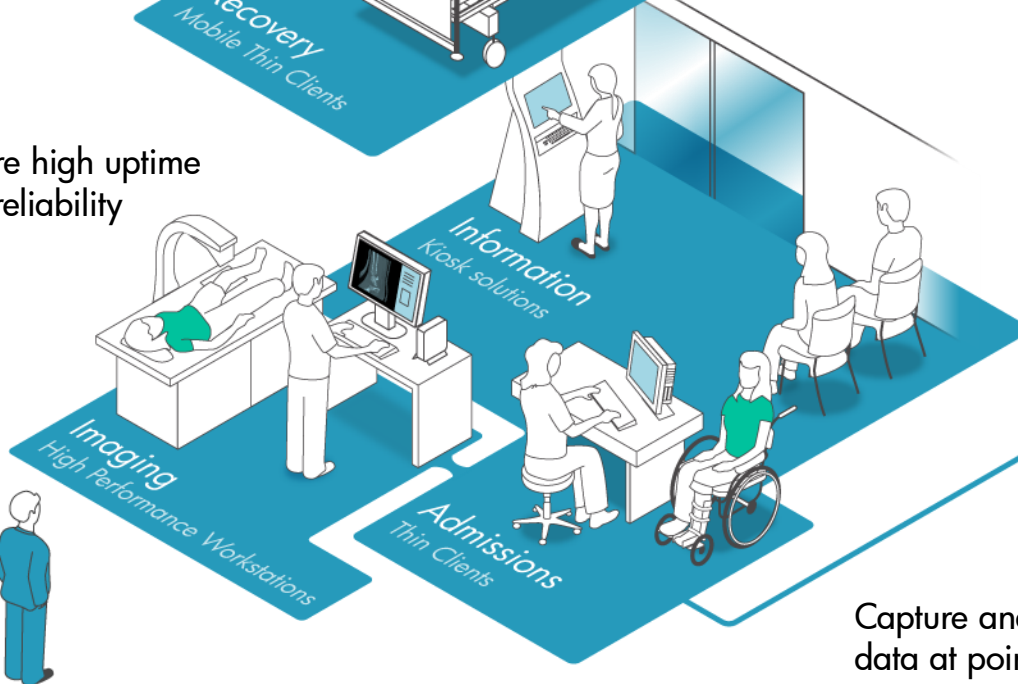


HP CLIENT VIRTUALIZATION HELPS IMPROVE WORKFLOW AND COMPLIANCE

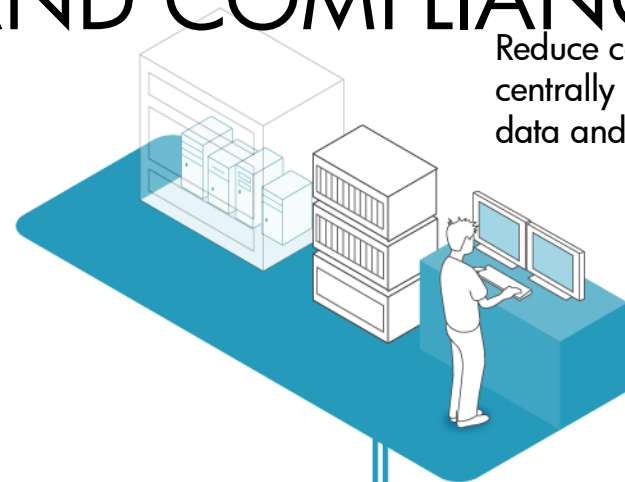
Speed access to patient records for on-the-go staff



Ensure high uptime and reliability



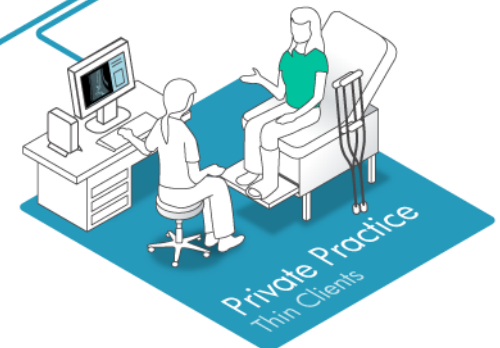
Reduce costs by centrally managing data and resources



Meet regulatory requirements for data privacy and retention



Capture and validate data at point of care



LET HP AND VMware HELP YOU
GET STARTED TODAY





THANK YOU

www.hp.com/ch/thinclients
www.hp.com/ch/clientvirtualisierung