



Efficiency. Control. Choice.

VCE's Vblock Enabling Private Clouds in Reality

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Standardization Matters



1. Market Leadership – The VCE Coalition

Virtualization

Access Networks

Consolidation+Security

Virtual Computing Environment (VCE)

1. Market Leadership – The VCE Coalition



Vblock – the product line of VCE

Turnkey solution – server (compute), storage, network resources

Vblock Impact: Customer Example

Server Provision Cycle



Cut from 46 days to 35 minutes

Server Costs



Reduced by 40%

Hardware Deployment Time



Decreased by 40%

Overall Hardware Utilization



From less than 10% to more than 40%

Worldwide Bank

Situation

- Initiative to achieve consolidation, optimization, and efficient operations
- CEO focused on five requirements:
 1. Standardized platforms, including all subsidiaries
 2. Solid support model
 3. High density, minimal footprint
 4. Ability to move workloads easily, as often as needed
 5. Security, including multi-tenancy

Solution

- Vblock 2

Business Benefits

- Data center consolidation
- VCE solves all five problems through virtualization and data mobility



Customer Profile

Large consumer of IT

More than 50 acquired/
child companies

Industry

Finance

Customers in Croatia

JADRANSKO

 **PRIVREDNA BANKA ZAGREB**

Some Recommendations For You!

1. Go with the market leaders
2. Choose a *secure* “private cloud” infrastructure
3. Pay attention to system management
4. Emphasize vendor support

1. Market Leadership – Storage for VMware

	12/09	10/09	06/09	02/09	10/08
EMC	38%	41%	36%	35%	36%
Dell	18%	7%	21%	16%	21%
IBM	16%	10%	11%	13%	16%
NetApp	12%	11%	13%	13%	9%
Hewlett-Packard	11%	19%	14%	13%	8%
Compellent	4%	4%	2%	1%	1%
SUN	1%	5%	0%	2%	2%
Hitachi	0%	3%	0%	3%	9%
3PAR	0%	0%	1%	0%	0%

“Almost 40% chose EMC as preferred storage vendor in virtualized server environments (more than two times any other supplier).”

Source: Goldman Sachs, Americas Technology Hardware 2010 Outlook, January 2010

“EMC remains the clear storage leader in virtualized storage environments.”

Source: Goldman Sachs IT Spending Survey, January 7, 2010

Storage market for virtualized environments

1. Market Leadership – Storage for VMware

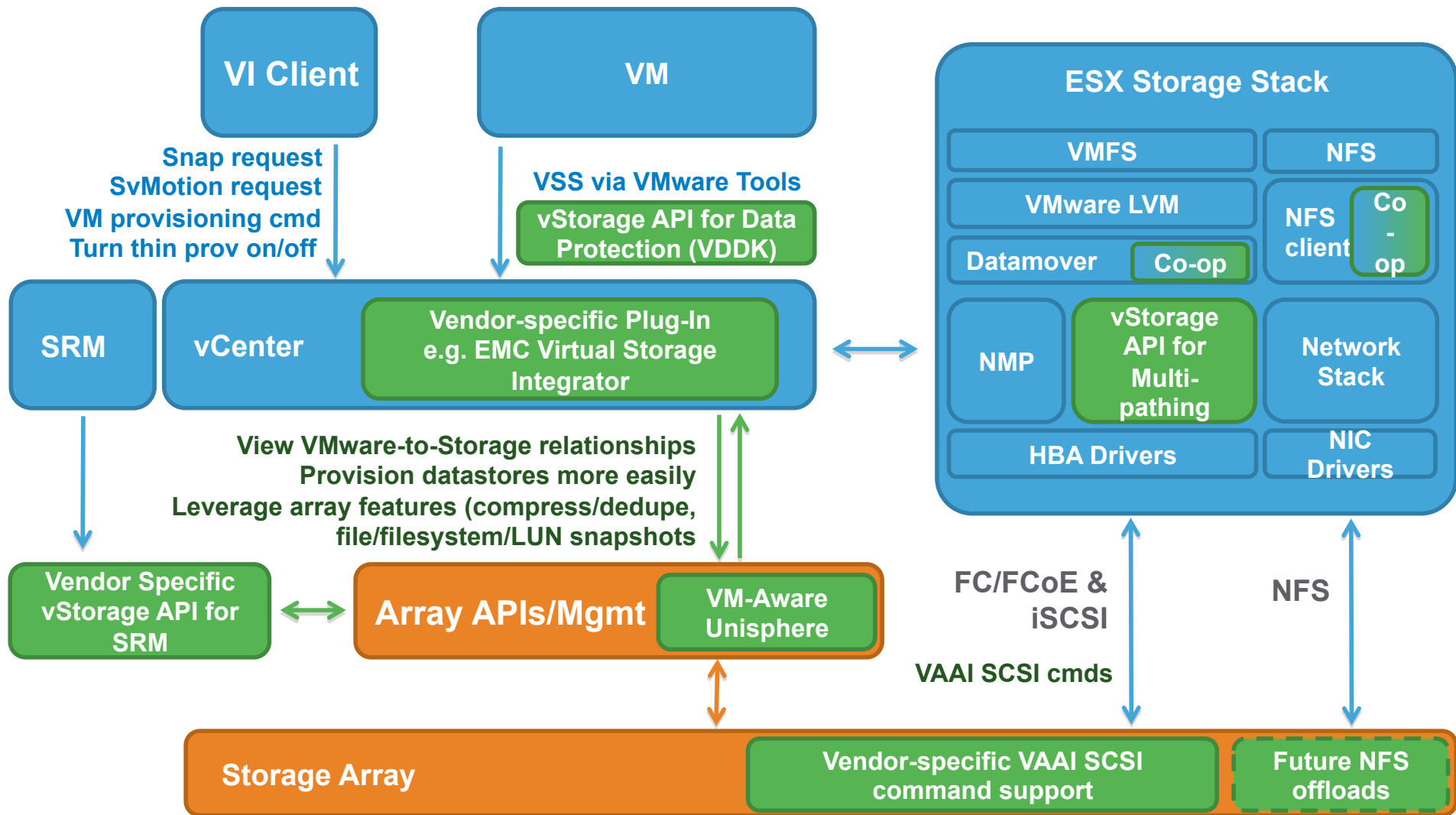
Simple



Efficient

Industry's BEST VMware Integration

“Where Does Storage Integration Happen?”



EMC and VMware are trademarks of EMC Corporation and VMware, Inc. respectively.

Demo

vCenter Plugins

VAAI – vStorage API for Array Integration

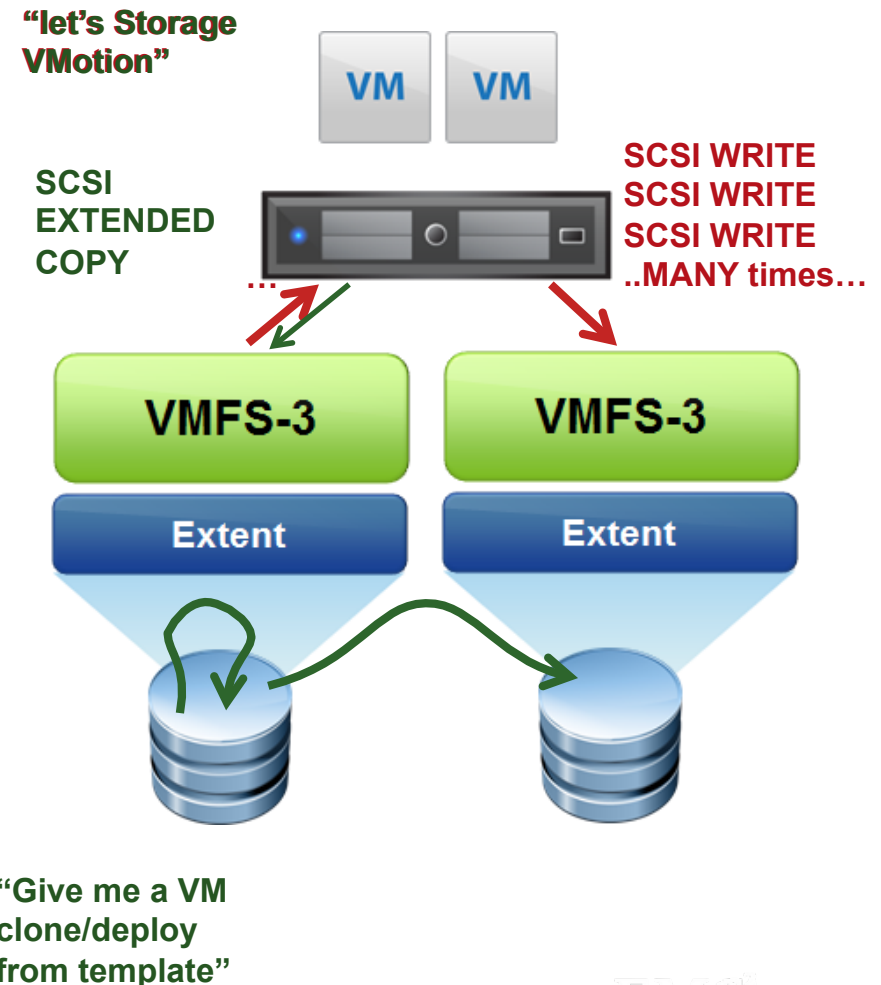
- Hardware-Accelerated Locking
- Hardware-Accelerated Zero
- Hardware-Accelerated Copy

Hardware-Accelerated Copy

- **Without API**
 - SCSI Read (Data moved from array to host)
 - SCSI Write (Data moved from host to array)
 - Repeat
 - Huge periods of large VMFS level IO, done via millions of small block operations

- **With API**
 - SCSI Extended Copy (Data moved within array)
 - Repeat
 - Order of magnitude reduction in IO operations
 - Order of magnitude reduction in array IOps

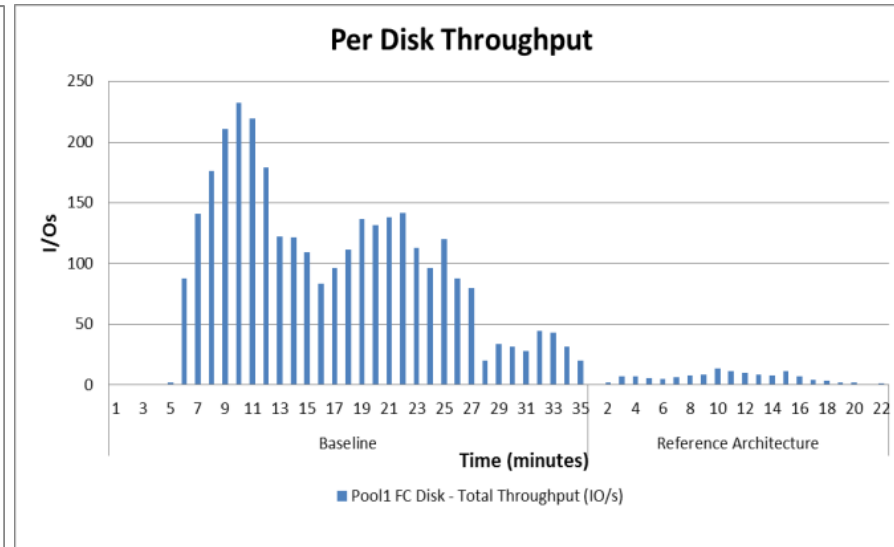
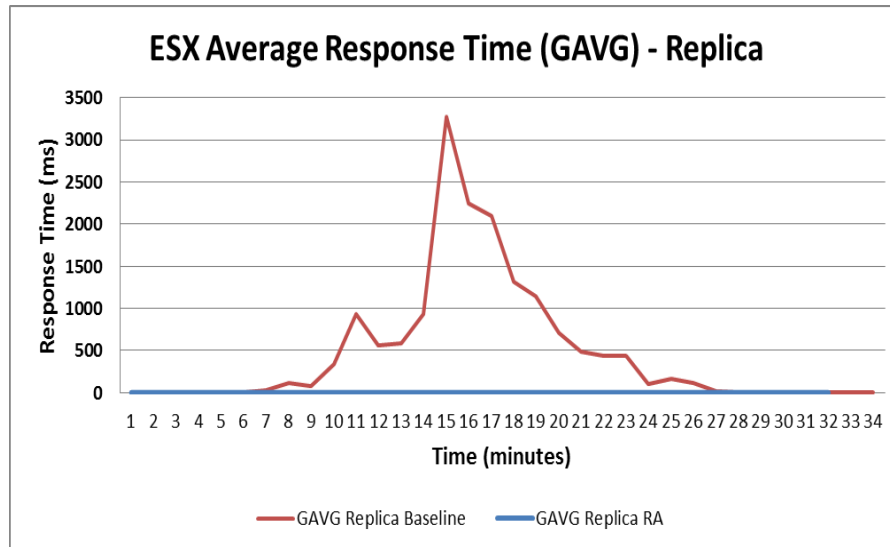
- **Use Cases**
 - Storage VMotion
 - VM Creation from Template



Demo

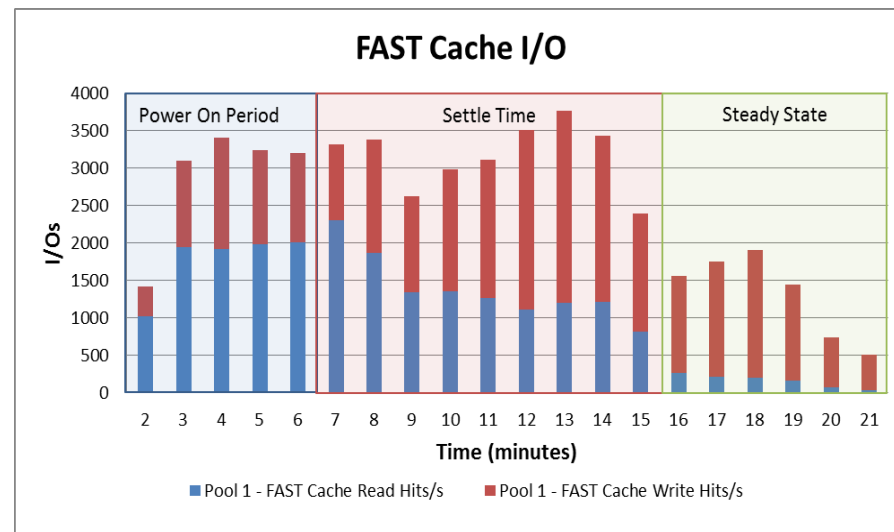
Efficiency: VAAI

Boot Storm

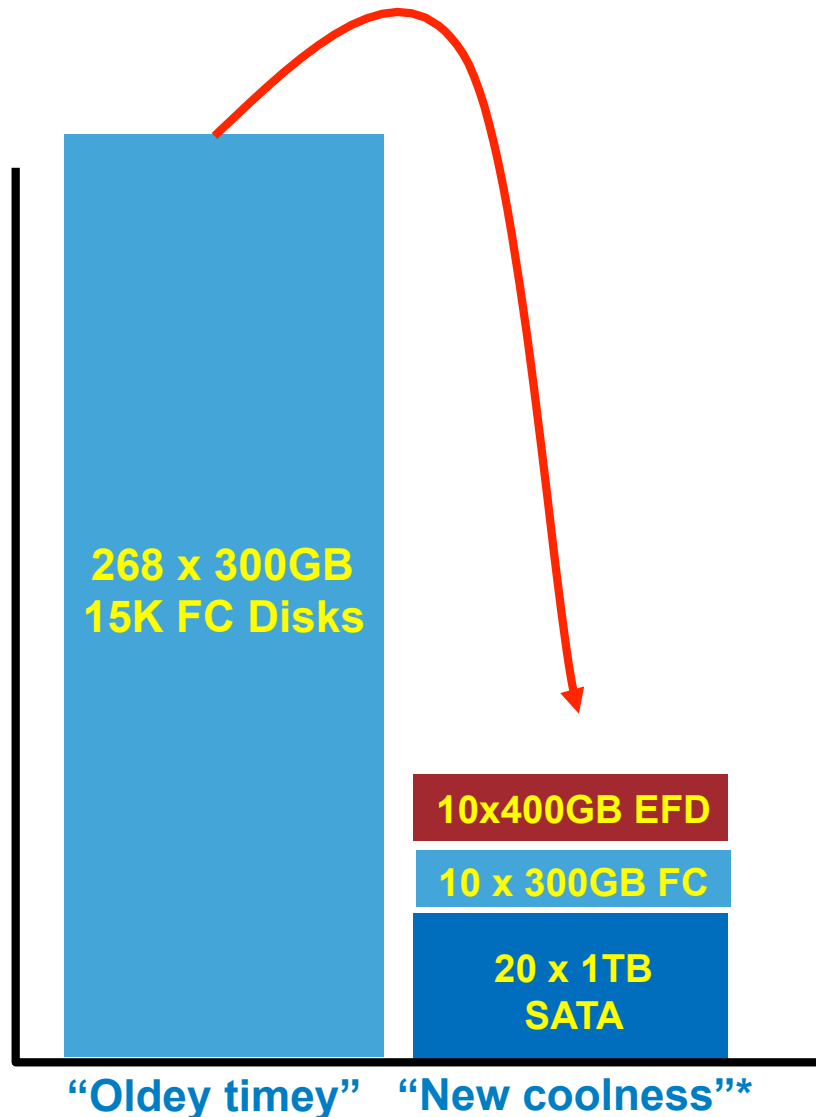


Boot 500 Desktops in 5 Minutes

- Over 13,000 IOPS at peak
- Reduced peak disk IOPS from 232 to 13 (20x reduction!) using EMC FAST Suite
- Reduced time to boot by 40% using VAAI



Net: 4000 user deployment example



22% Lower Storage Costs

+ Reduce Maintenance & SW costs

11% More Disk IOPS

53,000 vs 48,000 Aggregate IOPS

90% Less Power

.8 kVA vs 8 kVA

85% Fewer Disk Drives

40 EFD+FC+SATA vs 268 FC

* Key Ingredients in new coolness:

- VMware: View 4.5, Composer
- EMC: FAST Cache, FAST, Dedupe & Compress

Putting our money where our mouth is...

**VMware View 4.5
+
EMC FAST Suite
+
Joint V/E and VCE
Reference Architectures**

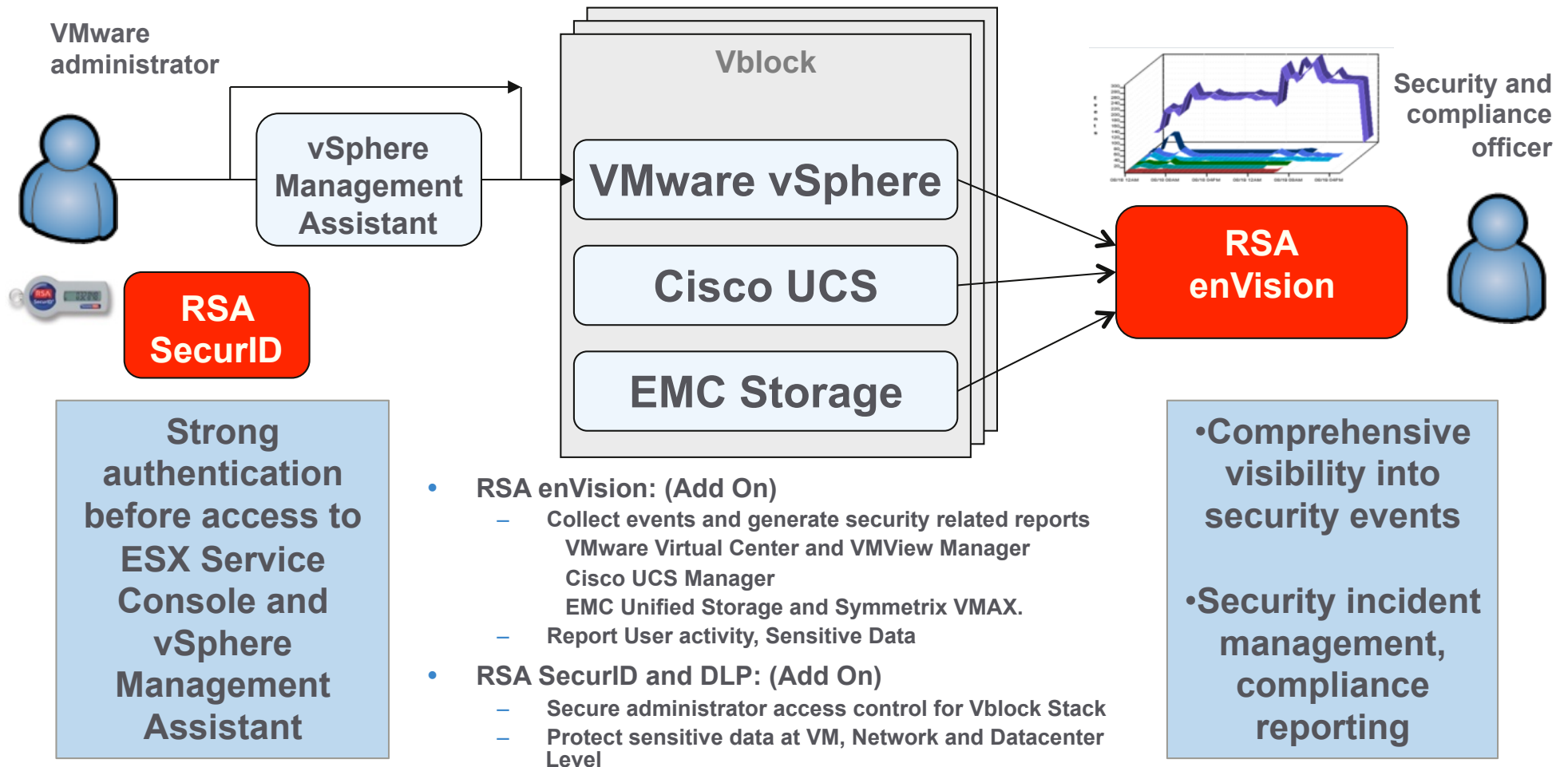
EMC² + vmware[®] = as low as \$38/user

2. Vblock Security

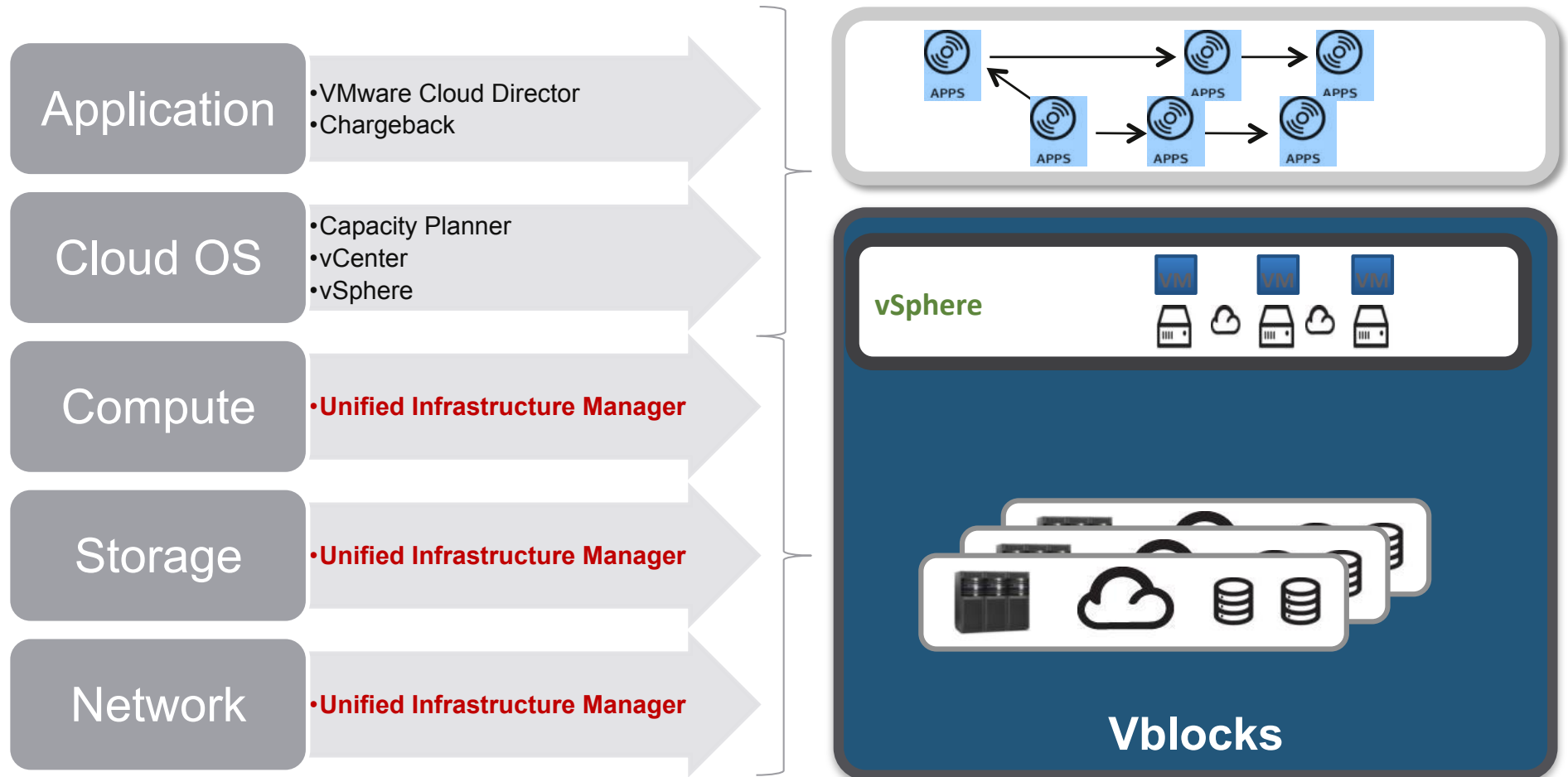
- Template-based Vblock management
 - Configuration in pre-defined ways only
 - Compliance auditing
 - Tracking
- Support for **ISO 27001** security regimes
 - For secure Virtual Data Centers (VDCs)

DCS #	Revision	Compliance State	Compliance Severity	Job Number	Created By	Created Date
DCS-004	4	Not Audited		100105	sysadmin	09/01/2009 11:51 AM
DCS-003	3	Not Audited		100103	sysadmin	09/01/2009 11:41 AM
DCS-002	2	Not Audited			unknown	09/01/2009 10:53 AM
DCS-001	1	Not Audited			unknown	08/27/2009 09:35 AM

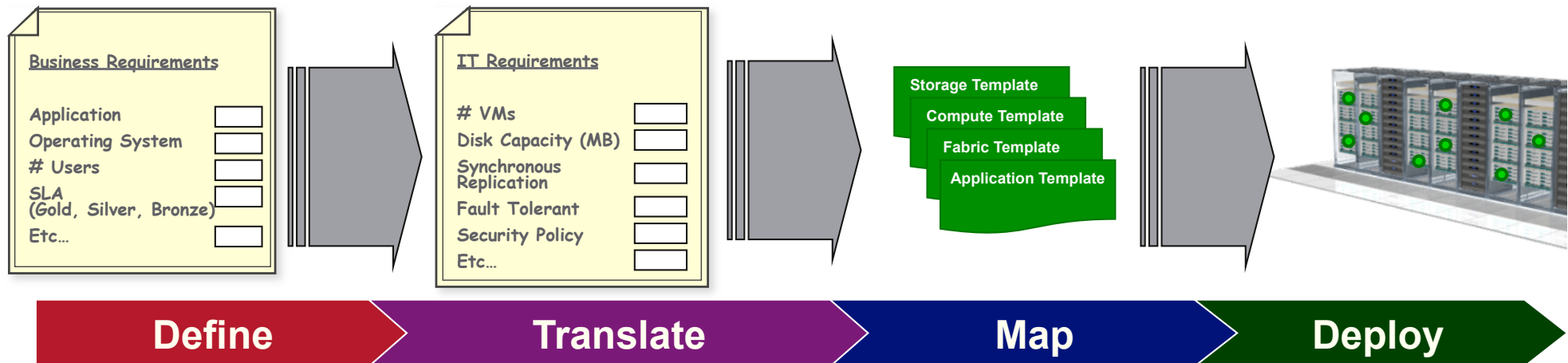
2. Vblock Security



3. Vblock System Management



3. Vblock System Management



- Enables business requirements to translate to IT resources
 - Business owner inputs application, uptime, number of users, business continuity, backup, and security requirements
 - Resources are rapidly assigned according to user specification reducing time to application availability

Enable choice and flexibility, retain control

4. VCE Seamless Support



People

More than 8500 hours of cross-product training



Process

Engineering, escalation groups, process collaboration, cross-company service-level objectives



Technology

More than \$6 million in lab equipment invested in joint problem re-creation labs with end-to-end Vblock topology

Additional investments in advanced collaboration technologies simplify the support process and reduce time to resolution.

Cisco WebEx™
Connect

Cisco
TelePresence™

Virtual team
space

Wikis, email lists,
knowledge base



Resources

- VCE

<http://www.vce.com>

- Vblock Solutions for SAP and VMware View

<http://www.vce.com/solutions.htm>

- Vblock Seamless Support

<http://www.vce.com/support.htm>

Start Here

- Technology and News
Virtual Geek blog: <http://virtualgeek.typepad.com/>
- EMC's VMware Integration on Storage, Backup and Security
<http://www.emc.com/virtualization>
- Free EMC Unified vCenter Plugin
http://virtualgeek.typepad.com/virtual_geek/2010/10/emc-unified-vcenter-plugin-v20-howto-and-details.html
- Free EMC Virtual Storage Appliance (Uber VSA)
<http://nickapedia.com/>
to see ease of management and test VMware SRM



Travel Safely and Successfully!