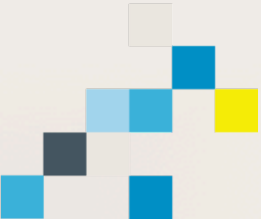




THE VIRTUAL COMPUTING
ENVIRONMENT COMPANY

VBLOCK™ INFRASTRUCTURE PLATFORMS

Next Generation Vblock Platforms



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AGENDA

1. Introduction – Value Proposition
2. Vblock Platform Management
3. Vblock Platform Storage
4. Vblock Platform Performance
5. Series Specifications



VCE CHARTER

Accelerate adoption of converged infrastructure and cloud-based computing models that dramatically reduce the cost of IT while improving time to market for our customers.



SIMPLIFYING THE DATA CENTER EXPERIENCE

Traditional Data Center Experience 90-120 Days From Order to Production



Receive Components



Program & Provision



Staging



Rack & Cable

January						
S	M	T	W	T	F	S
1	2	3	4	5	6	7
8	9	10	11	12	13	14
15	16	17	18	19	20	21
22	23	24	25	26	27	28
29	30	31				

February						
S	M	T	W	T	F	S
			1	2	3	4
5	6	7	8	9	10	11
12	13	14	15	16	17	18
19	20	21	22	23	24	25
26	27	28	29			

March						
S	M	T	W	T	F	S
			1	2	3	
4	5	6	7	8	9	10
11	12	13	14	15	16	17
18	19	20	21	22	23	24
25	26	27	28	29	30	31

April						
S	M	T	W	T	F	S
1	2	3	4	5	6	7
8	9	10	11	12	13	14
15	16	17	18	19	20	21
22	23	24	25	26	27	28
29	30					

VCE Data Center Experience ~30 Days From Order to Production



January						
S	M	T	W	T	F	S
1	2	3	4	5	6	7
8	9	10	11	12	13	14
15	16	17	18	19	20	21
22	23	24	25	26	27	28
29	30	31				



VBLOCK PLATFORMS

Key Value Proposition

- Complete System Integration
- Optimized Solutions
- Seamless Support



**Pre-Engineered,
Pre-Integrated and Validated**

VBLOCK INFRASTRUCTURE PLATFORMS

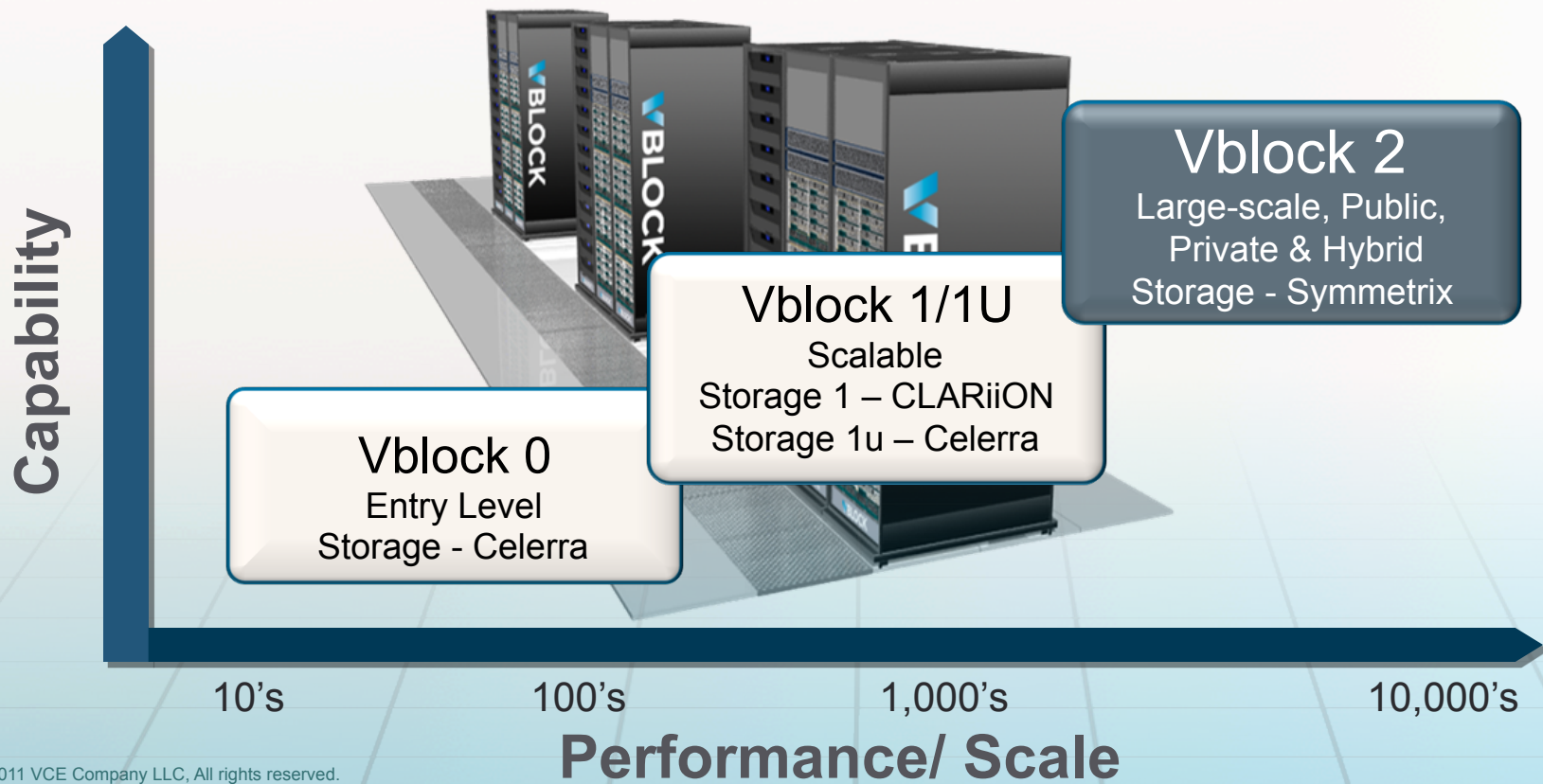
- Vblock Series 700
 - Storage: **EMC Symmetrix Vmax**
 - Compute: Cisco UCS
 - Virtualization: VMware
 - Orchestration: Unified Infrastructure Manager (UIM)
 - Vblock Series 700 model MX

- Vblock Series 300
 - Storage: **EMC VNX**
 - Compute: Cisco UCS
 - Virtualization: VMware
 - Orchestration: Unified Infrastructure Manager (UIM)
 - Models
 - Vblock Series 300 model EX
 - Vblock Series 300 model FX
 - Vblock Series 300 model GX
 - Vblock Series 300 model HX

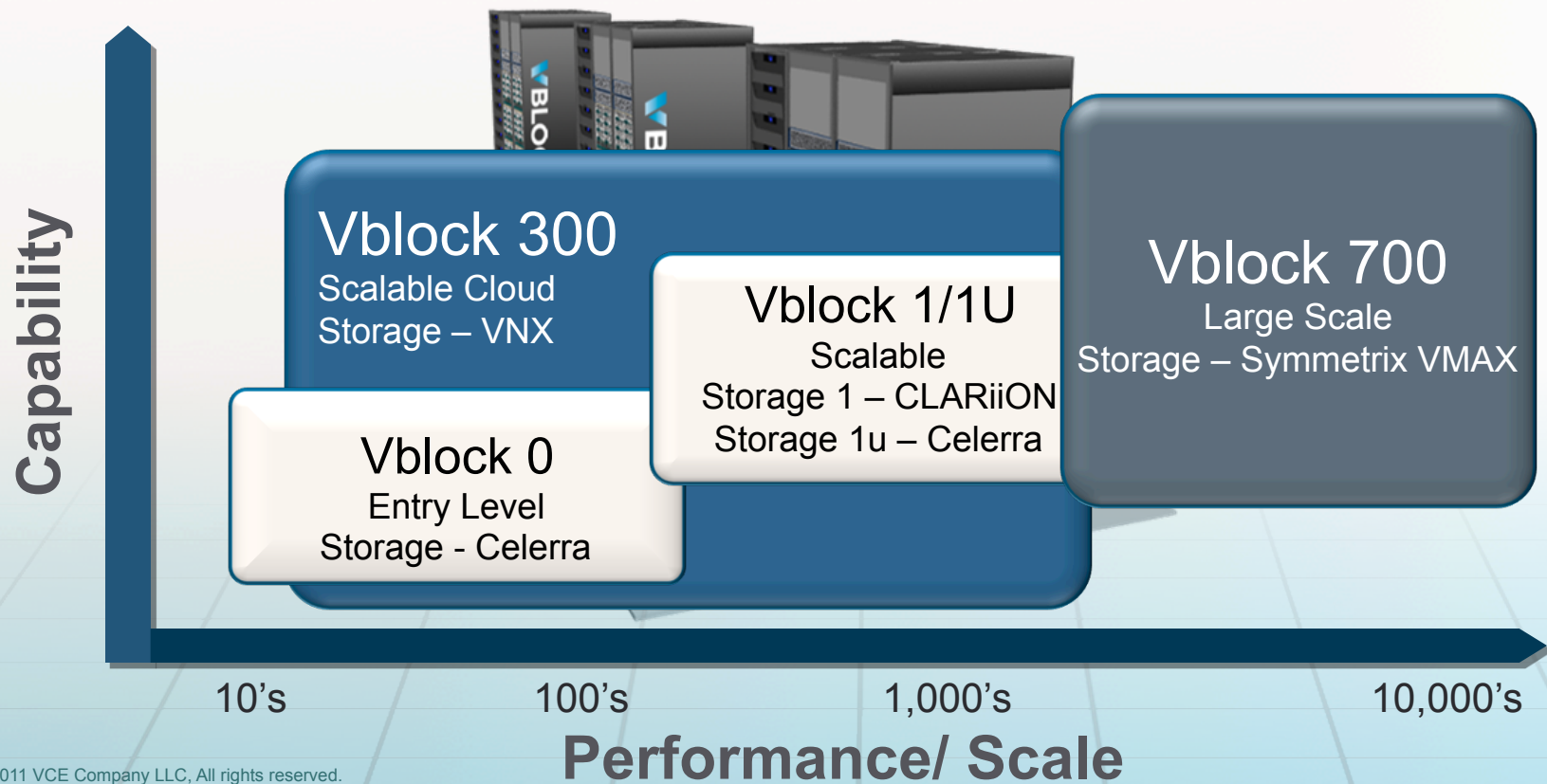


**Pre-Engineered,
Pre-Integrated and Validated**

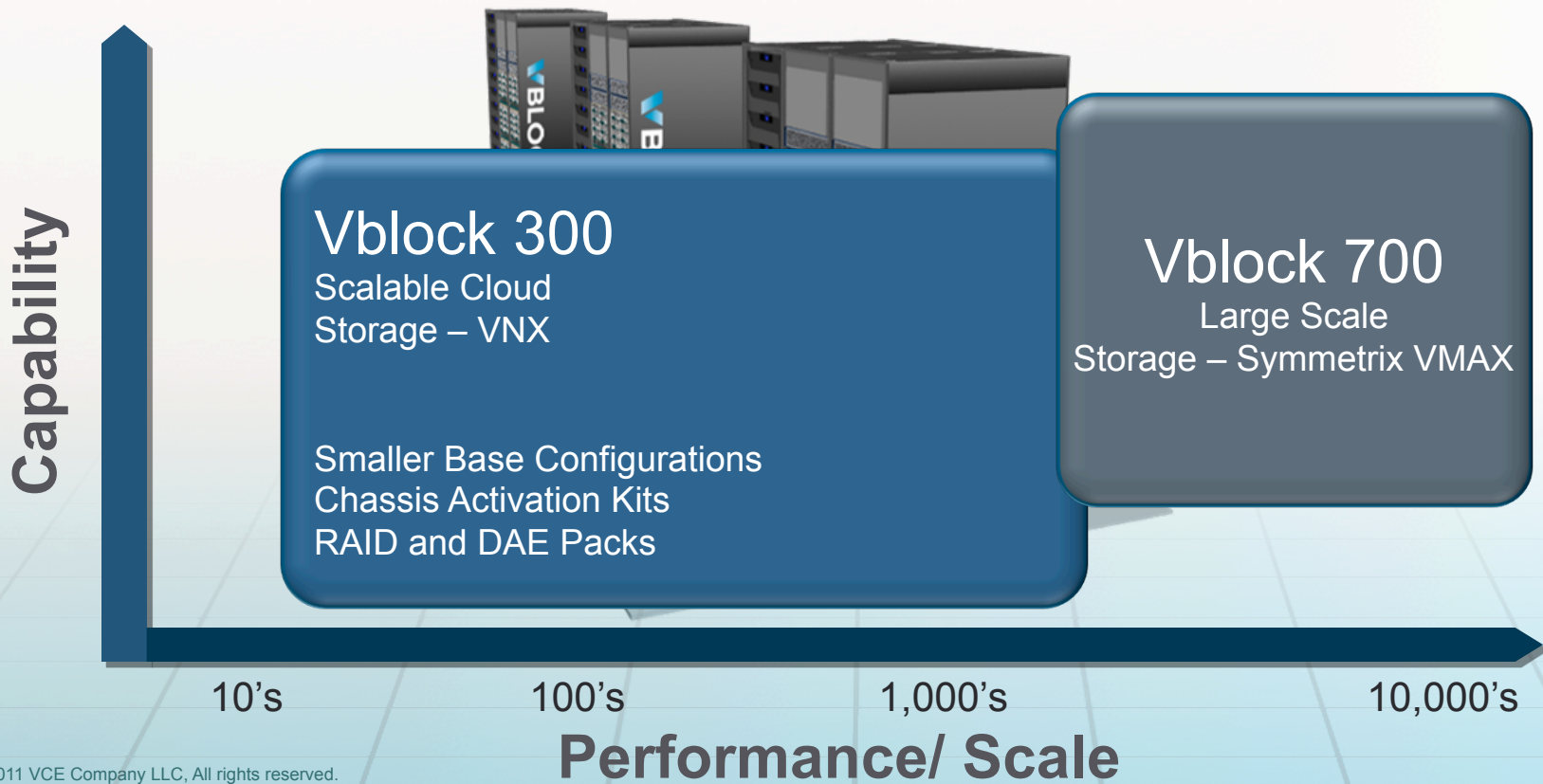
VBLOCK PLATFORM SERIES



VBLOCK PLATFORM SERIES



VBLOCK PLATFORM SERIES



VBLOCK SERIES 300 – WHAT'S NEW

- **Simplify** – compliance, configuration and provisioning across multiple Vblock platforms
- **Leverage** – new generation drives
- **Accelerate** – increases number of users and transactions



Simplify. Leverage. Accelerate.



NEW ORDERING FEATURES

Smaller base configurations

- Chassis activation kits – UCS first two licensed
- RAID packs- Simplified and replaces drive packs
- DAE packs – Smaller increments

Bundles instead of individual titles

- Local protection
- Remote protection
- Application protection
- Security and compliance
- FAST Suite

Packs

- Total protection pack
 - Local, remote and application
 - 20% discount over buying separately
- Total efficiency pack
 - Total protection pack, security/compliance Bundle and FAST Suite
 - 10% discount over buying TPP Pack and suites individually
 - 25% discount over buying each suite individually





VBLOCK PLATFORMS: SIMPLIFY IT OPERATIONS

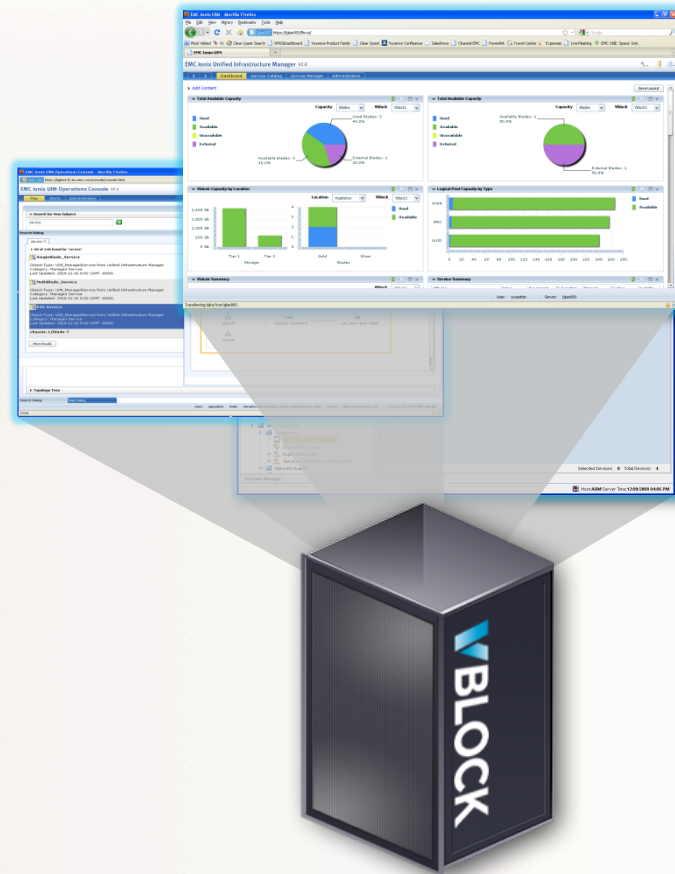


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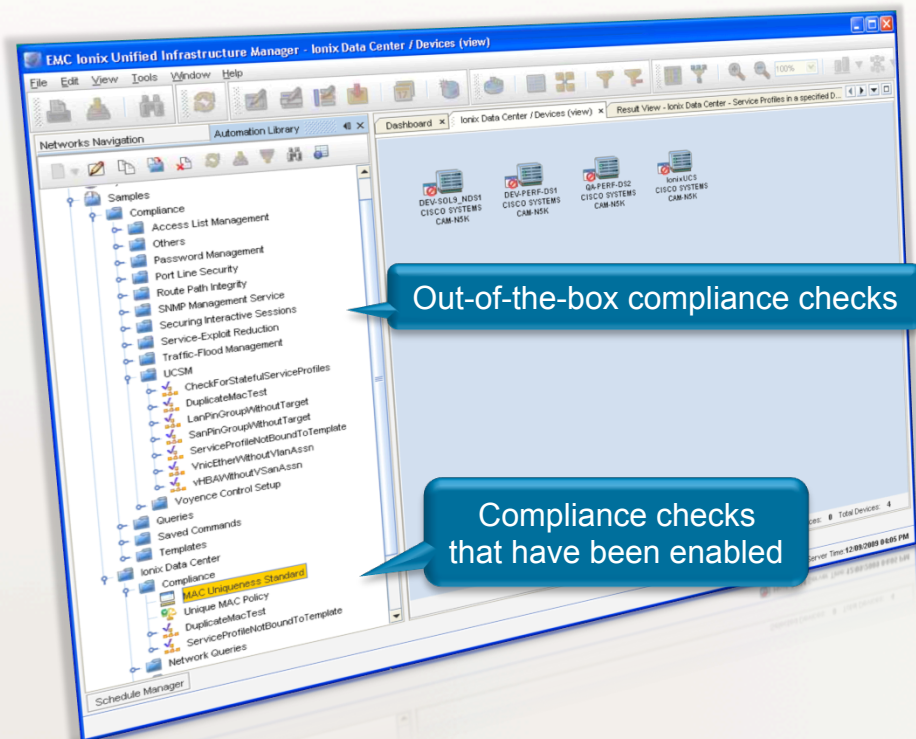


UNIFIED INFRASTRUCTURE MANAGER V2.1

- Manages across multiple Vblock infrastructure estates
- Ensures compliance with Vblock platform configuration guidelines and enforcement of change management discipline
- Configures and provisions
 - Virtual Network access
 - Virtual Storage connectivity and capacity
 - Stateless Compute profiles
- Eliminates need for multiple server, network & storage configuration tools
- Streamlines integration requirements with 3rd party IT Service Management environments



CONFIGURATION & COMPLIANCE MANAGEMENT

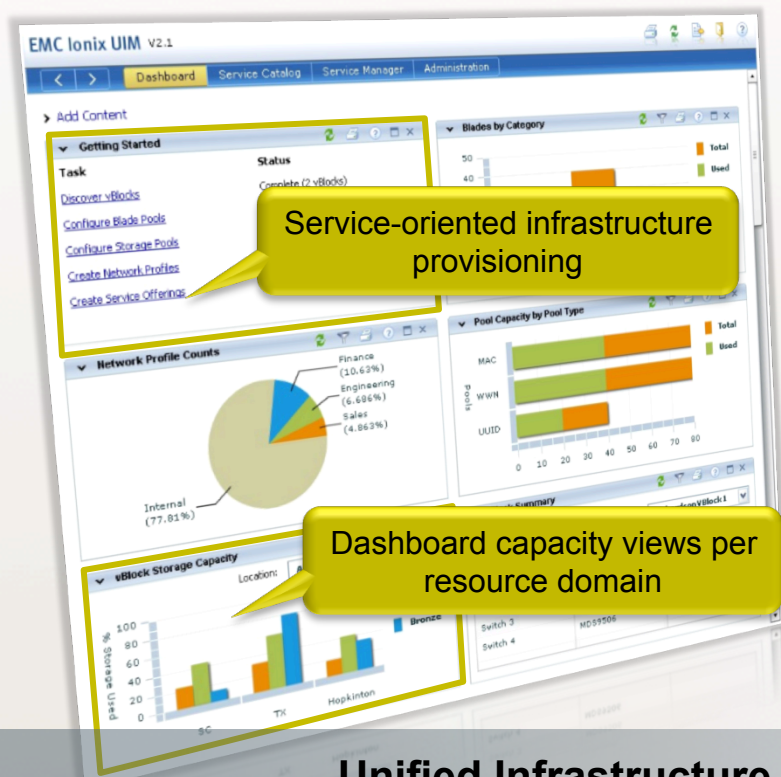


- Validate compliance with (per device) configuration best practices
- Avoid configuration drift
- Avoid conflicting resource identity assignments
- Automatically track and report configuration changes over time

Unified Infrastructure Manager / Configuration Center



AUTOMATED INFRASTRUCTURE PROVISIONING



- Provision hardware infrastructure as a service with service offering templates
- Accelerate time to deployment with pre-configured automation workflows
- Manage and monitor multiple Vblock systems with a single instance
- Reduce pt-2-pt integration with open RESTful API

Unified Infrastructure Manager / Provisioning Center



VBLOCK INFRASTRUCTURE VISUALIZATION & CENTRAL MONITORING



New
in
2.1!

Topology and mash-up views

Contextual event and
alert management

- At-a-glance Vblock infrastructure topology and mash-up views
- Simplify object search capabilities across Vblock environments
- Enable consolidated event management and forwarding
- Streamline integration with 3rd-party ITSM suites

Unified Infrastructure Manager / Operations

UNIFIED INFRASTRUCTURE MANAGER ENABLES SERVICE TRANSFORMATION...



Go From:

- Time-consuming, error-prone, infrastructure provisioning
- Inefficient, people-intensive, infrastructure provisioning
- Slow, error-prone response to continuous change

Cross-domain complexity drives increased time & errors

The diagram features a vertical stack of three red rectangular boxes with white text. The top box is associated with a server rack icon, the middle with a target icon, and the bottom with a laptop icon. The background of the diagram includes faint, semi-transparent icons of a server rack, a target, and a laptop, along with the words 'APPS', 'VIRTUALIZATION', and 'STORAGE'.

IT organizations must become more efficient, do more with less

80% of outages caused by misconfigurations




UNIFIED INFRASTRUCTURE MANAGER ENABLES SERVICE TRANSFORMATION...

Go From:

- Time-consuming, error-prone, infrastructure provisioning
- Inefficient, people-intensive, infrastructure provisioning
- Slow, error-prone response to continuous change

A faint background illustration of a person's face, with a large, stylized eye in the center.

**Operate at the speed
of the business**

A small icon of a laptop computer.

**Achieve efficiency &
costs goals, free up
resources**

A small icon of a server rack.

**Control the effect of
change on service
delivery**

To:

- Automated, fully compliant, infrastructure services provisioning in minutes
- Automated infrastructure provisioning, by a single IT administrator
- Quick, compliant response to change





VBLOCK SERIES 300: LEVERAGE NEW DRIVES



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INTEGRATED TECHNOLOGY

By Industry Leaders

vmware

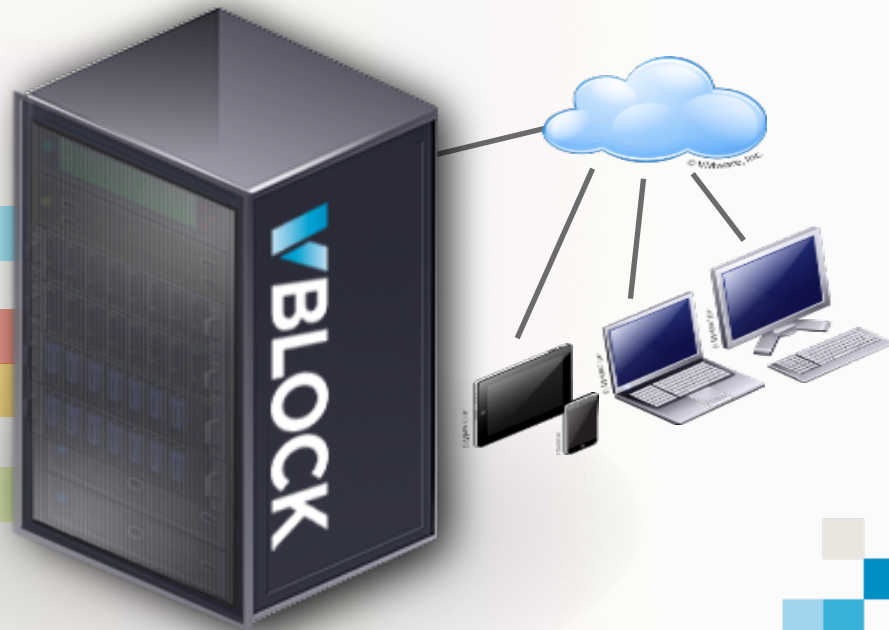
Virtualization



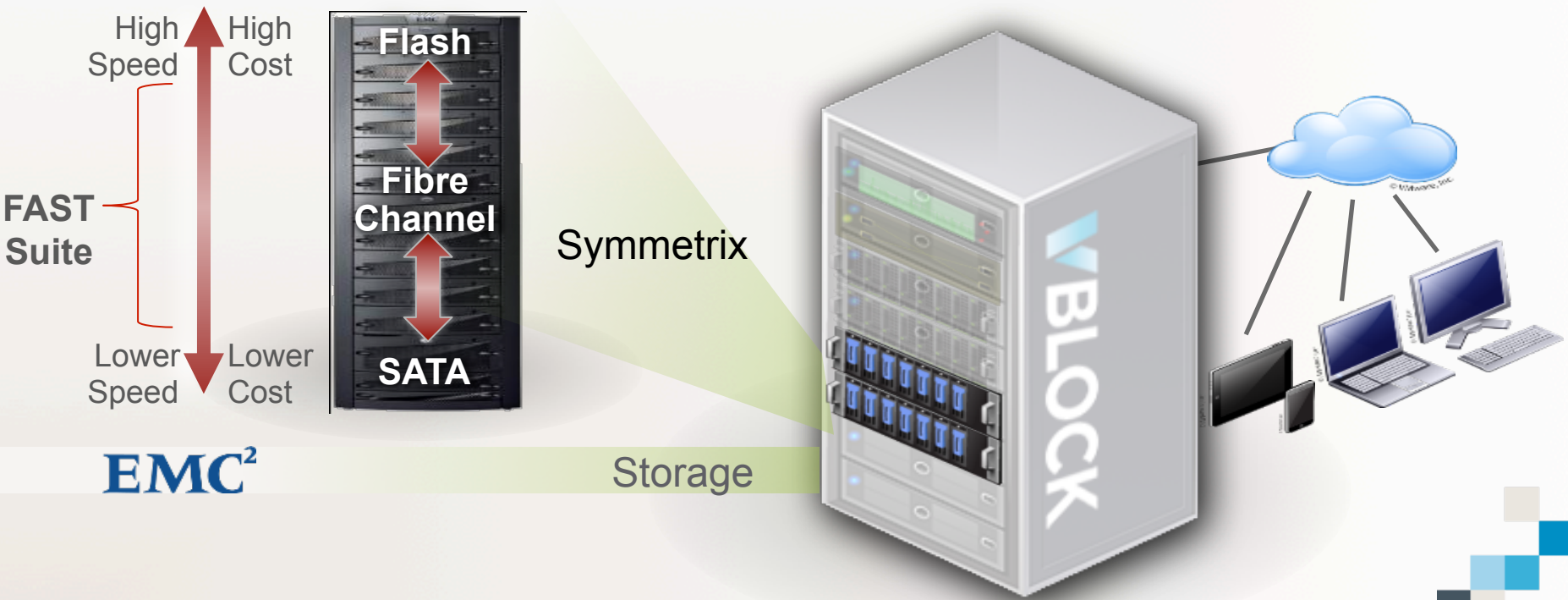
Unified Computing
Network

EMC²

Storage



VBLOCK: STORAGE



EMC²

Storage



VBLOCK SERIES 300: STORAGE





VBLOCK SERIES 300: ACCELERATE APPLICATIONS

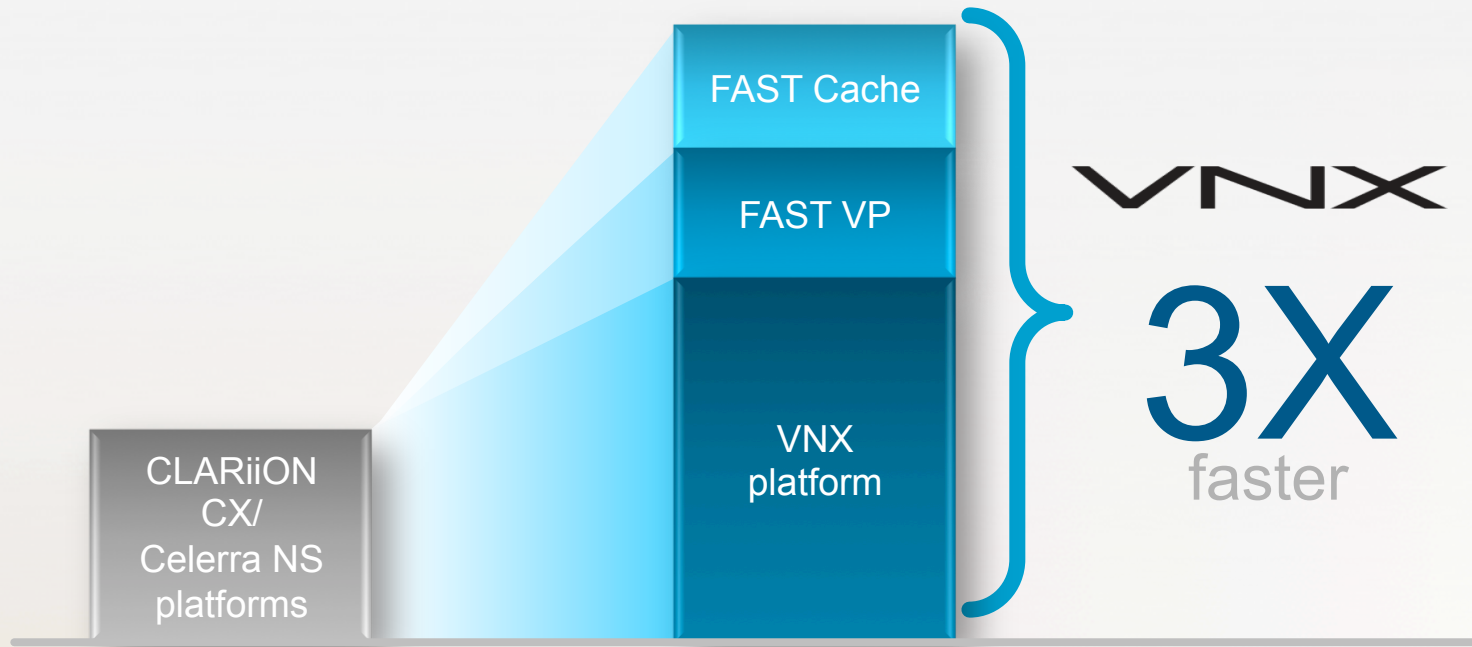


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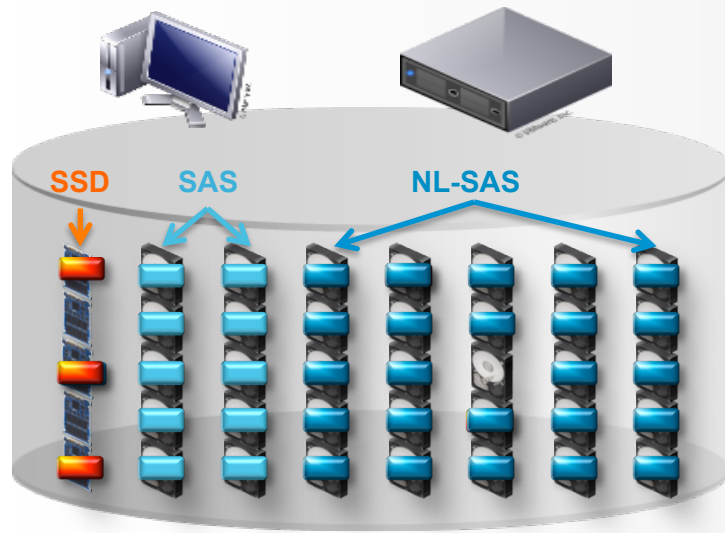


VBLOCK PLATFORM PERFORMANCE

More users, more transactions, better response time



VNX DATA OPTIMIZATION – BUILT IN



FAST Suite-

- **FAST Cache** continuously ensures that the hottest data is served from high-performance Flash SSDs
- **FAST VP** optimizes storage pools automatically, ensuring only active data is being served from SSDs. Cold data is moved to lower-cost disk tiers.
- Together they deliver a fully automated FLASH 1st storage strategy for optimal performance at the lowest cost attainable



VNX PERFORMANCE



VNX

- 3X the number of users
- 3X the number of transactions

vmware®

VNX

- 3X faster VMware View boot time
- 3X quicker VMware View refresh time

ORACLE®

VNX

- 3X the number of users
- 3X the number of transactions



VBLOCK SERIES 300 SUMMARY

Key takeaways

Simplify

- UIM multiple Vblock platform provisioning and compliance.
- Bundles and Packs
- Chassis Activation Kits

Leverage

- SSD, SAS and NL-SAS drives
- FAST Suite
- RAID and DAE Packs

Accelerate

- Faster boot and refresh
- More users
- More transactions





VBLOCK SERIES: SPECIFICATIONS



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EMC²

vmware

VBLOCK PLATFORMS: MAIN COMPONENTS

Vblock 0	Vblock 1U /1	Vblock Series 300	Vblock Series 700
Storage			
Celerra	1U- Celerra 1 - CLARiiON	Vblock Series 300 model EX- VNX 5300 Vblock Series 300 model FX- VNX 5500 Vblock Series 300 model GX- VNX 5700 Vblock Series 300 model HX- VNX 7500	Vblock Series 700 model MX- Symmetrix VMAX
Compute			
Cisco UCS • B200M2 • B250M2 • B230M1	Cisco UCS • B200M2 • B250M2 • B440M1 • B230M1	Cisco UCS • B200M2 • B250M2 • B440M1 • B230M1	Cisco UCS • B200M2 • B250M2 • B440M1 • B230M1
Virtualization			
VMware vSphere 4 Enterprise Plus Suite			



MANAGEMENT FOOTPRINT

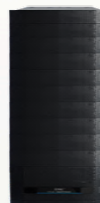
Catalog of Domain Managers
Unified Vblock Management
Ionix Unified Infrastructure Manager Advanced Management POD (AMP)
Virtualization Management
VMware vCenter 4.x Suite
Virtualization Data Center OS
VMware vSphere 4.x Enterprise Plus
Compute Management
Cisco UCS Manager
Network Management
Cisco Fabric Manger / Data Center Network Manager (optional)
Storage Management
EMC Unisphere (Vblock 1u, 1, 300) / EMC Symmetrix Management Console (Vblock 700)



VNX STORAGE ARRAYS



VNX



VNX Form Factor	Vblock Model VNX Model	300EX VNX5300	300FX VNX5500	300GX VNX5700	300HX VNX7500
	VNX Form factor	4U–7U	4U–7U	5U–8U	5U–8U
	VNX Number of drives	125	250	500	1,000
	VNX Drive types	3.5" Flash, SAS, and NL-SAS and 2.5" SAS			
VNX File system modules	I/O slots per X-Blade	3	4	4	5
	X-Blades	1 or 2	1, 2, or 3	2, 3, or 4	2–8
	Memory	6 GB/blade	12 GB/blade	12 GB/blade	24 GB/blade
		12 GB	36 GB	48 GB	192 GB
VNX Storage Pool modules	Protocols	NFS, CIFS, MPFS, pNFS			
	Storage Processors	2			
	I/O ports per SP	4 Fibre Channel ports, 2 back-end SAS ports		n/a	n/a
	I/O slots per SP	2	2	5	5
	Memory	16 GB	24 GB	36 GB	48 GB
	Protocols	Fibre Channel, Fibre Channel over Ethernet, iSCSI			





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THANK
YOU!



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