

# vSphere 5



## Rodney Mach

vmware vEXPERT

# Storage DRS

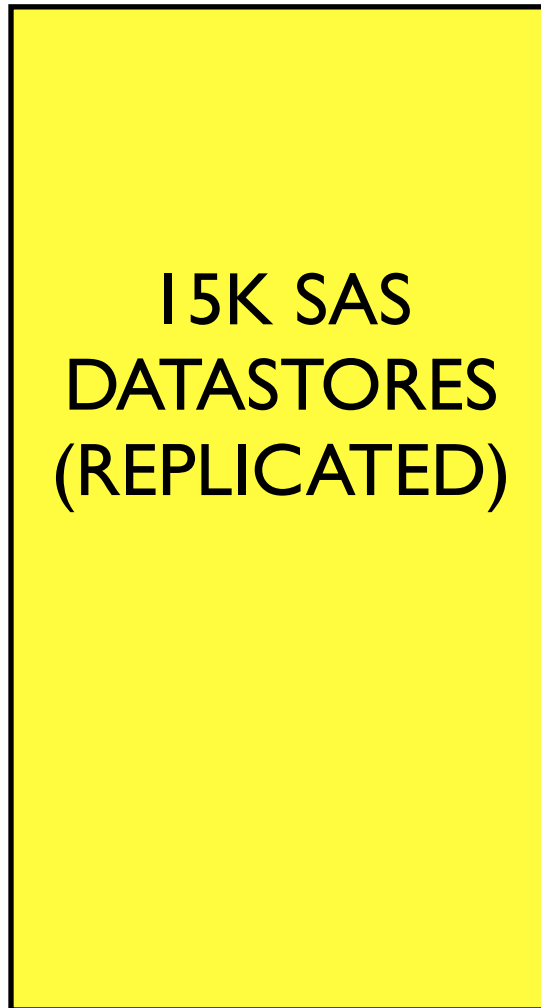


# Storage DRS

- Resource Aggregation
- Initial Placement
- Load Balancing
- Datastore Maintenance Mode

# Aggregation

GOLD



SILVER



BRONZE

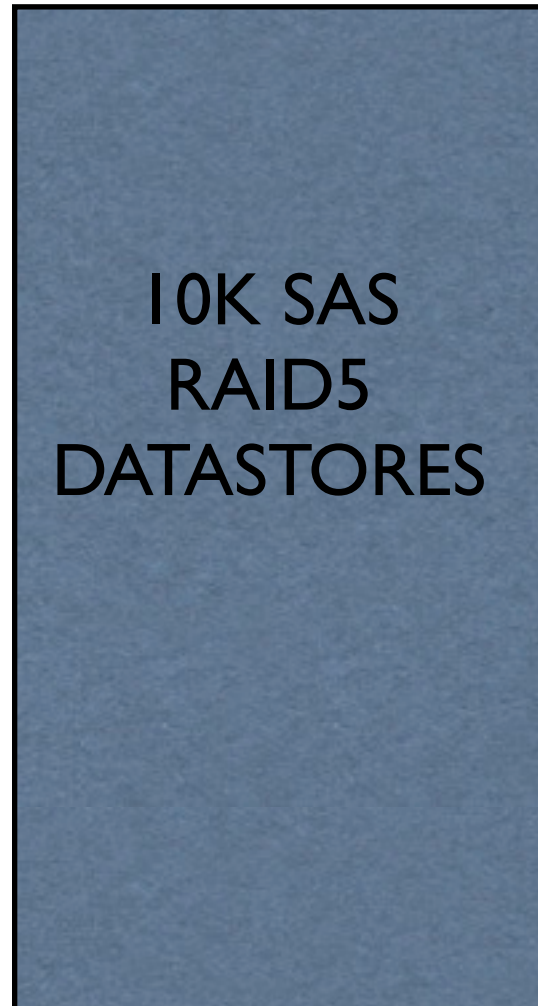


# Aggregation

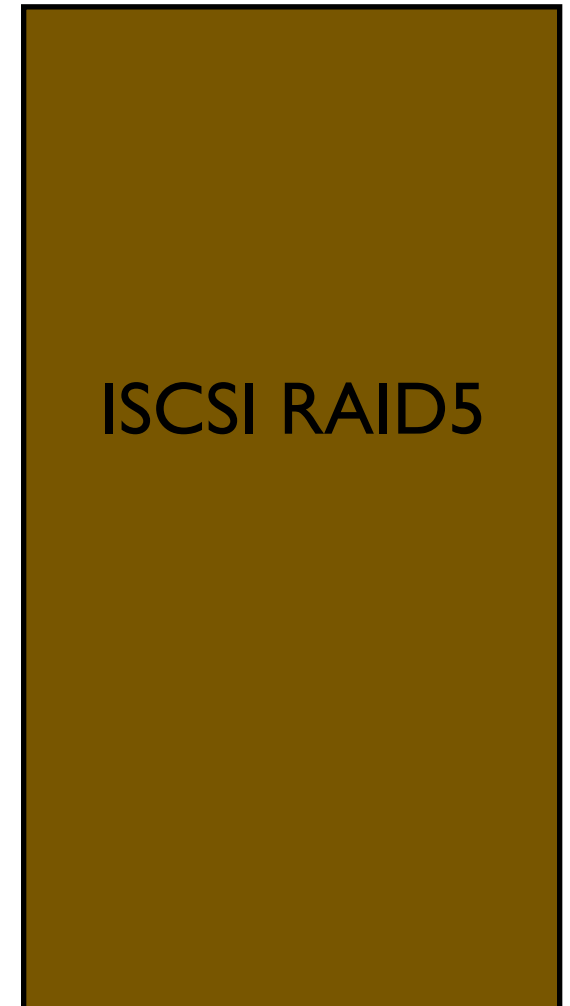
SQL SERVERS



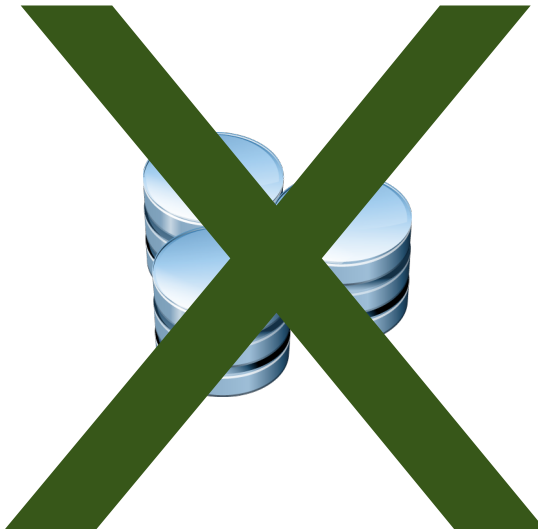
PRODUCTION



TESTDEV



# Initial Placement



DataStore **CLUSTER**

# DATASTORE CLUSTER



**I/O LATENCY**  
**(15ms)**

**CAPACITY**  
**(80%)**

# Datastore Maintenance Mode

A photograph of a standard green exit sign. The sign is rectangular with rounded corners and a white border. It features the word "EXIT" in large, white, sans-serif capital letters, followed by a white right-pointing arrow. The sign is mounted on a dark surface, possibly a wall or door frame.

EXIT

# STORAGE VENDOR CHECKLIST

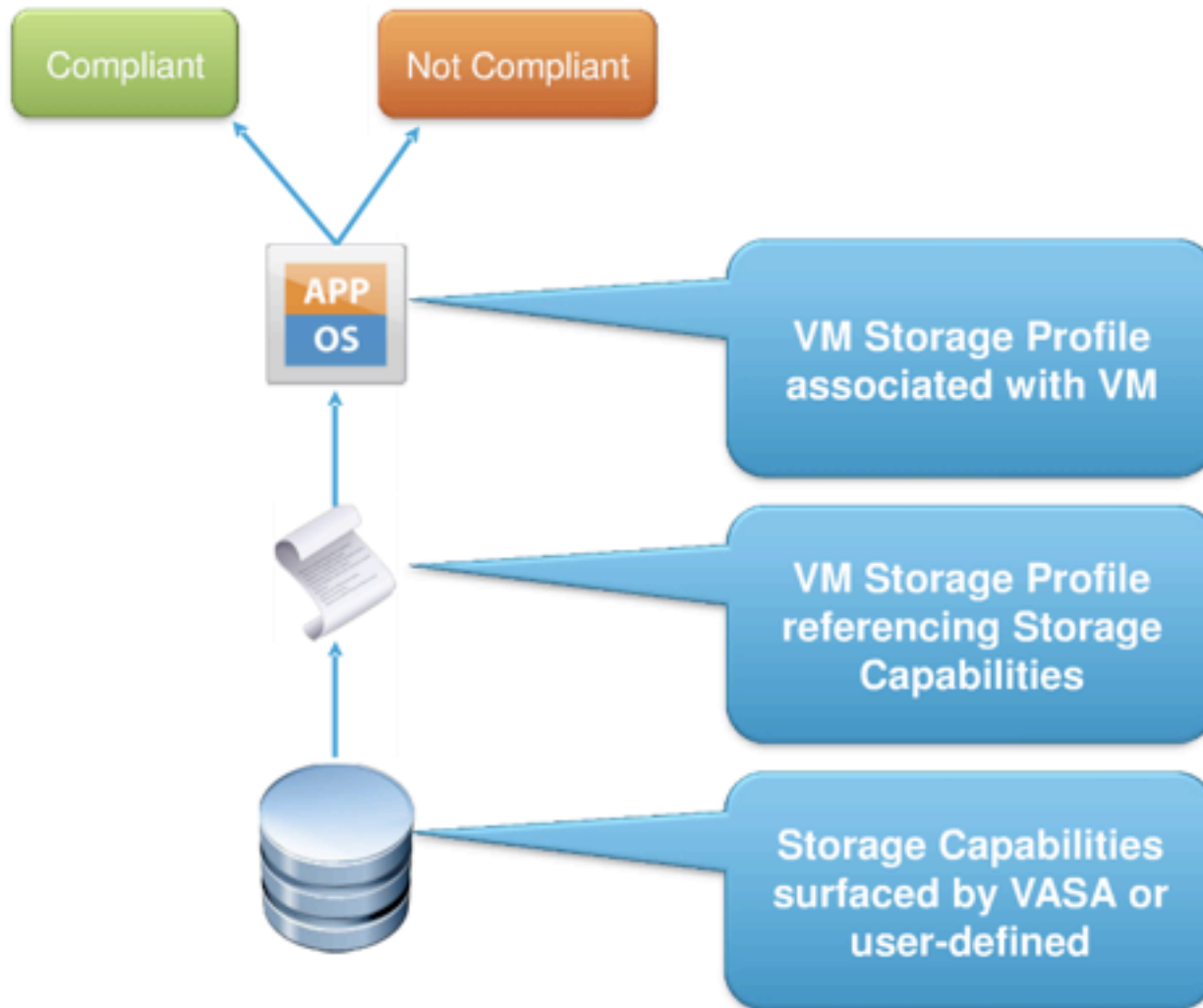
## VAA

(ARRAY OFFLOAD)

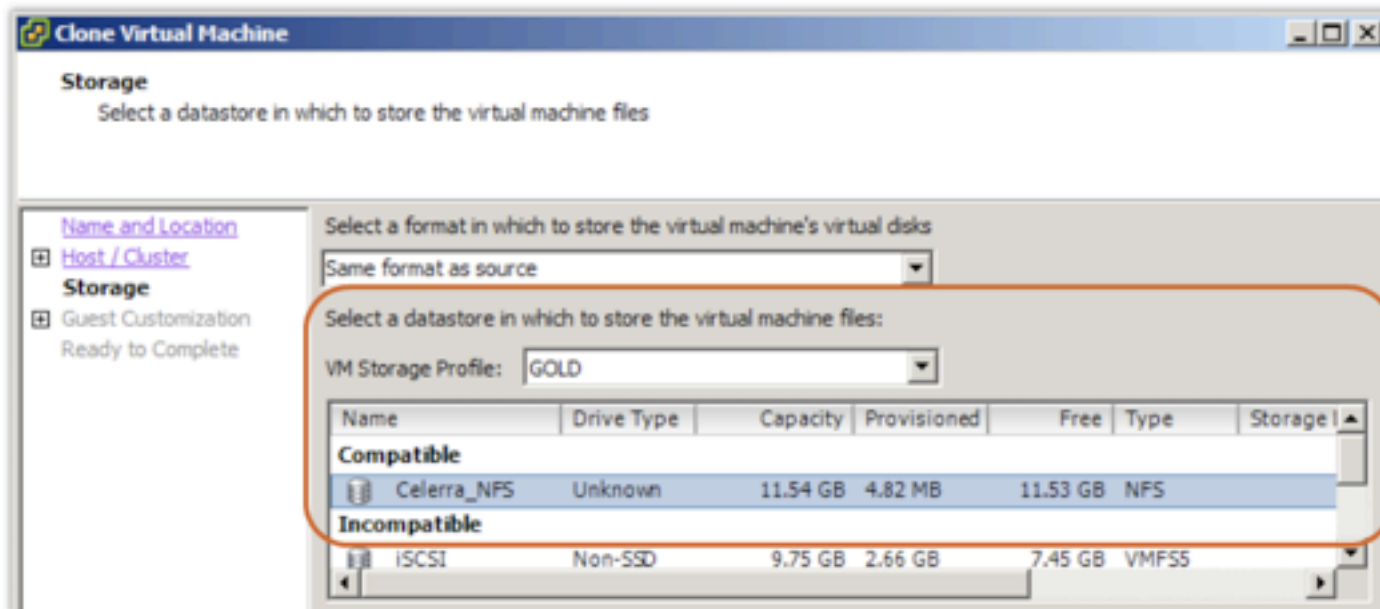
## VASA

(STORAGE AWARENESS)

# Storage Capabilities & Profile-Driven Storage



## Selecting a Profile During Provisioning



- By selecting a VM Storage Profile, datastores are now split into **Compatible & Incompatible**.
- The **Celerra\_NFS** datastore is the only datastore which meets the GOLD Profile requirements – i.e. it is the only datastore that has our user-defined storage capability associated with it.

# Profile-Driven Storage Compliance

The screenshot displays the VMware vSphere interface for a virtual machine named 'Jeos2'. The 'Summary' tab is active, showing various system details. A red box highlights the 'VM Storage Profiles' section, which indicates the VM is compliant with the 'GOLD' profile as of 3/15/2011 9:56:50 AM.

**General**

Guest OS:	Ubuntu Linux (32-bit)
VM Version:	7
CPU:	1 vCPU
Memory:	128 MB
Memory Overhead:	33.48 MB
VMware Tools:	Out of date
IP Addresses:	192.168.0.154 <a href="#">View all</a>
DNS Name:	Jeos2
EVC Mode:	N/A
State:	Powered On
Host:	<a href="#">esx50a.mn.vmware.com</a>
Active Tasks:	
vSphere HA Protection:	<a href="#">?</a> N/A <a href="#">?</a>

**Resources**

Consumed Host CPU:	<b>113 MHz</b>
Consumed Host Memory:	<b>85.00 MB</b>
Active Guest Memory:	<b>14.00 MB</b>
<a href="#">Refresh Storage Usage</a>	
Provisioned Storage:	<b>1.09 GB</b>
Not-shared Storage:	<b>1.09 GB</b>
Used Storage:	<b>1.09 GB</b>

Storage	Status	Drive Type
Celerra_NFS	Normal	Unknown

Network	Type	Sta
VM_Traffic_dvPG	Distributed port group	

**Commands**

- Shut Down Guest
- Suspend
- Restart Guest
- Edit Settings

**VM Storage Profiles**

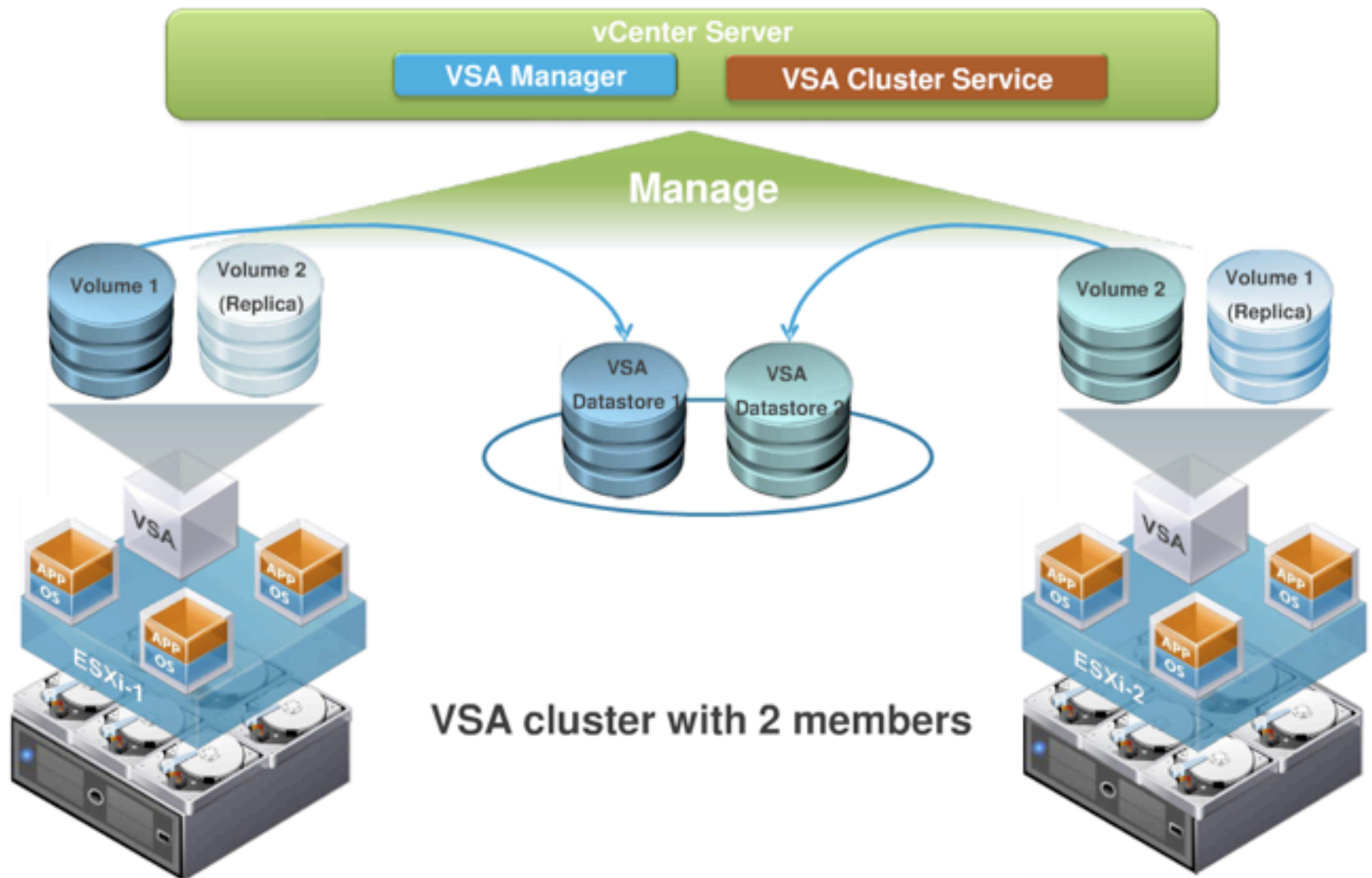
VM Storage Profiles: GOLD [Refresh](#)

Profiles Compliance: Compliant (3/15/2011 9:56:50 AM)

- Profile Compliance is visible from the Virtual Machine Summary tab.

# vSphere VSA

Use Internal Storage of  
ESXi To Create Shared  
Storage for  
HA/VMotion



## vSphere Storage Appliance: Summary

Simple manageability

Installed, configure and managed via vCenter

Delivers  
High availability

Abstraction From Underlying Hardware

Resilient to server failures

Highly available during disk (spindle) failure

Creates Shared  
Storage

Provides Storage framework for vMotion, HA and DRS

Pools server disk capacity to form shared storage

Leverages vSphere Thin provisioning for space utilization

Enables storage scalability

ESXi ONLY -  
ESX is DEAD



# Mac OS X Server SUPPORT



On Apple  
Xserve  
Hardware  
Only

# Multi-Nic vMotion



# vCenter Linux Appliance



# vCenter Web Client



# VMFS 5 Filesystem

UNIFIED BLOCK SIZE - 1MB UNIFIED  
BLOCK SIZE (AVOIDS LEGACY PROBLEMS)

64TB Data Stores (No Extents)

Raw Device Mapping (RDM) > 2TB

Max VMDK Size Still < 2TB

# Auto Deploy - Stateless ESXi



# New ESXi Firewall

# High Availability

## (HA)

### Redesigned

Avoids the “Gotchas”

with Primaries/  
Secondaries

# VM Version 8

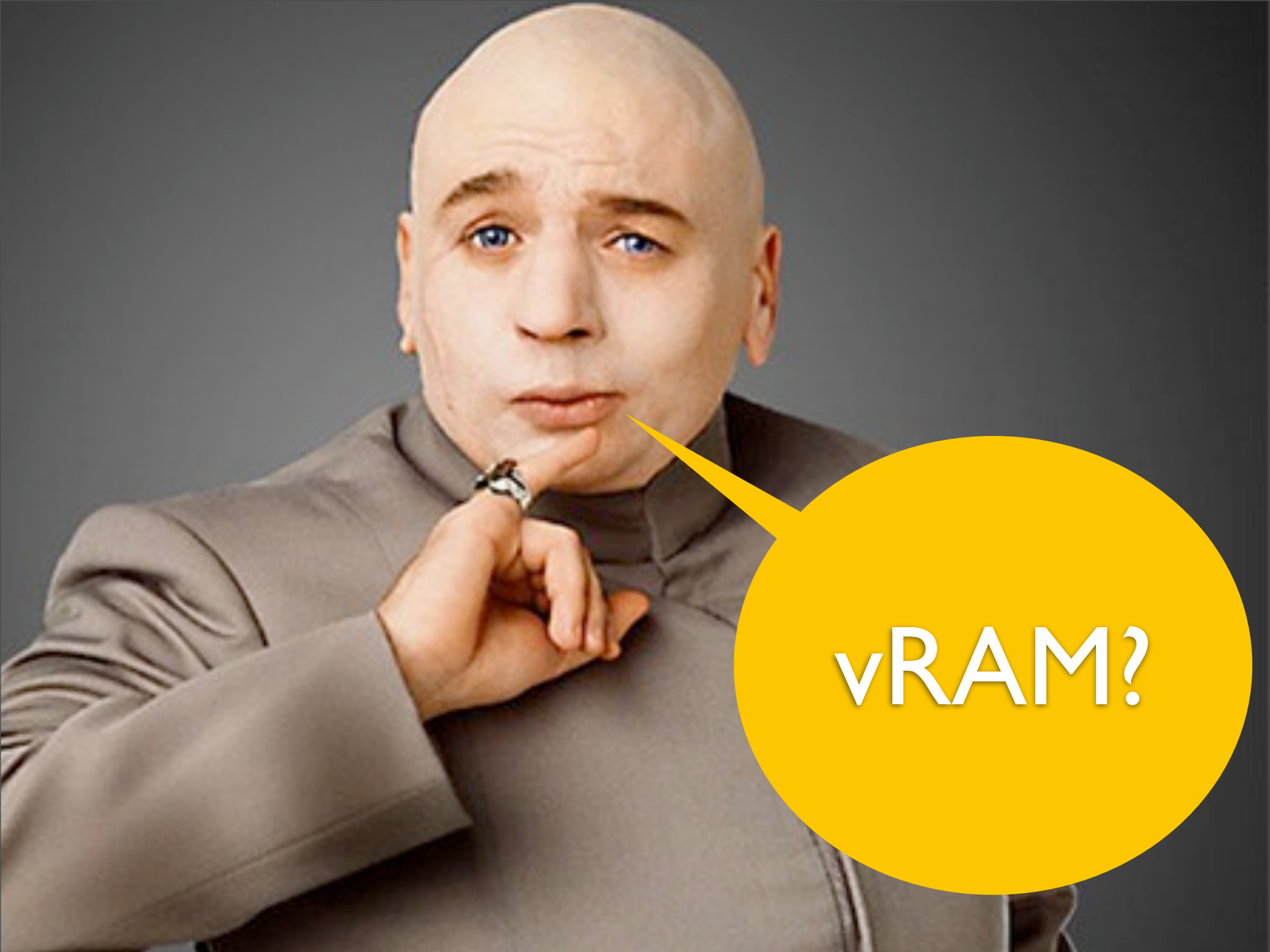
USB 3.0

3D Graphics for AERO

OS X Server Support

1 Terabyte\*  
32 vCPU  
VMs

\* Max of 96GB charged against vRAM pool



vRAM?

# New Licensing

- per processor **with memory entitlements** (vRAM).
- vRAM is a pool of the **configured** memory of all VMS ( not used, **configured** ) across all hosts managed by a vCenter instance. *vRAM is unrelated to physical memory in the host.*
- **Calculated as a 12-month average of consumed vRAM**
- per-core and physical ram limits removed.
- vRAM is a Soft Limit (Essentials/Essentials Plus It is a Hard Limit) but compliancy required.

vSphere Edition	vRAM Entitlement Per License
Enterprise+	96 GB
Enterprise	64 GB
Standard, Essentials+, Essentials	32 GB

# Other Notable License Items

- Free VMware Hypervisor limited to a 32GB of vRAM **per server**.
- Max vRAM consumed by single VM is capped to 96GB to reduce cost of monster VMs.
- vSphere Advanced Eliminated, customers upgraded to Enterprise.
- vSphere Desktop (Enterprise Plus for VDI Only) Unlimited vRAM, solder in 100 VM Packs. \$65 per VM for non View. View Bundles sold just like today (no vRAM limit)
- Each vSphere Edition creates a separate pool of vRAM if you have mixed editions.

A green rectangular sign with rounded corners and a white border, mounted on two wooden posts. The word "Change" is written in large, white, sans-serif capital letters across the center of the sign. The background is a bright blue sky with scattered white clouds.

Change

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