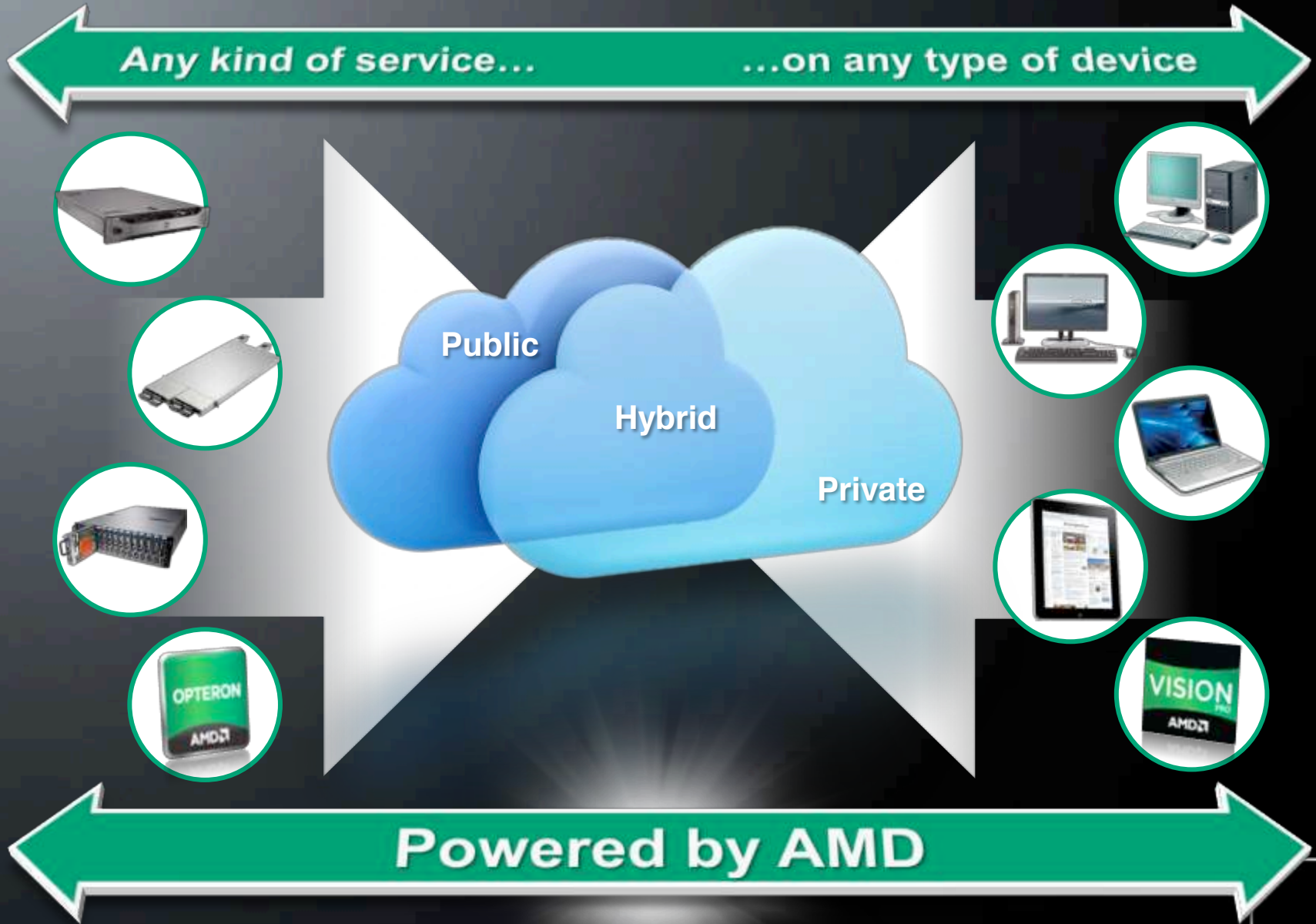




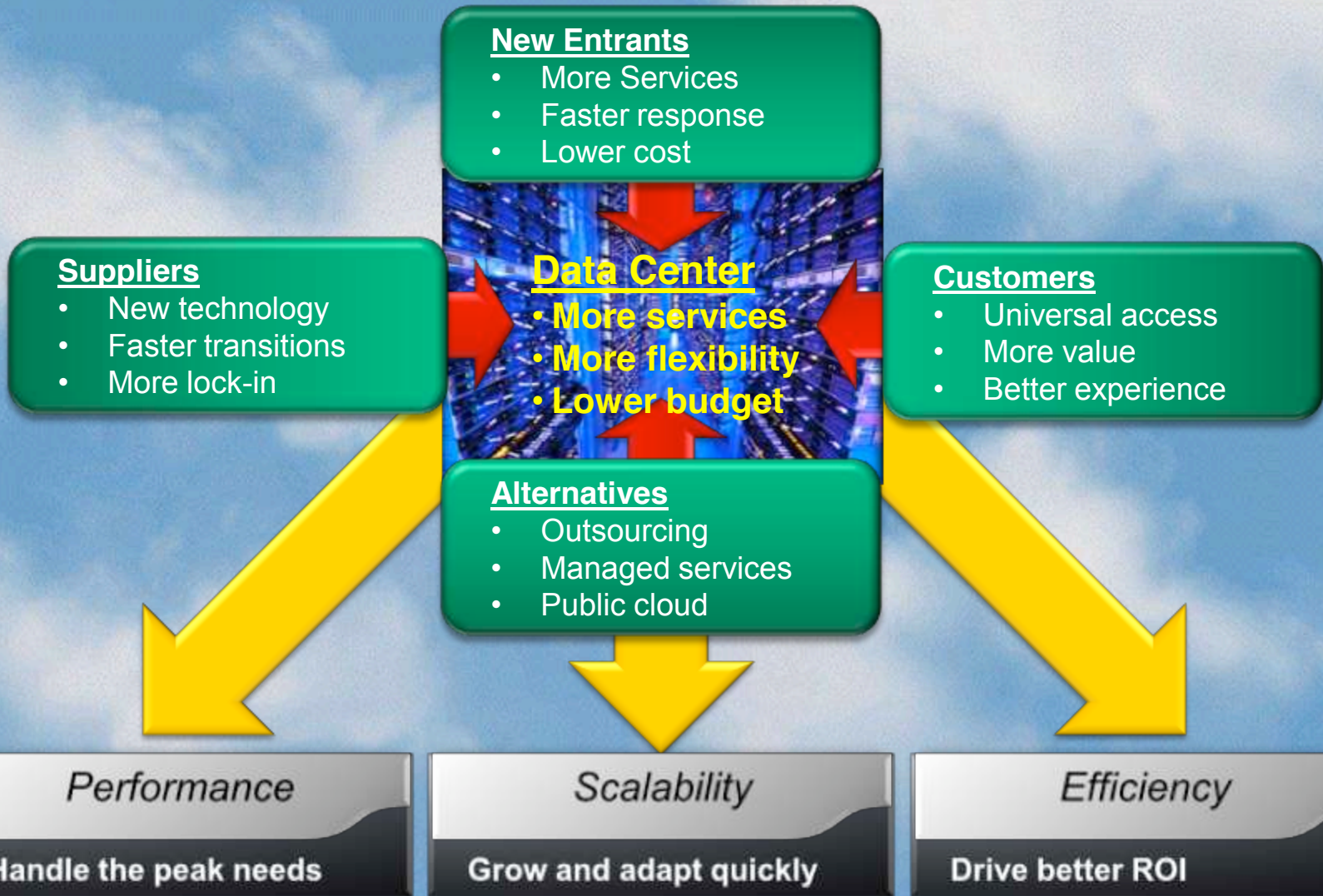
***AMD OPTERON™  
PROCESSORS IN THE  
CLOUD***



# THE CLOUD OPPORTUNITY



# DEMANDS ARE DRIVING DATA CENTERS TO CLOUD TECHNOLOGY



# AMD OPTERON PROCESSORS



*The most comprehensive cloud portfolio from microserver to massively parallel*



## AMD Opteron 6000 Series Processors

### *Density of cores*

The world's first x86 16-core processor, delivering a rich mix of performance, scalability and efficiency for today's highly threaded computing environments



## AMD Opteron 4000 Series Processors

### *Efficiency of cores*

The world's lowest power x86 cloud processor just got more efficient\*

\* 8-core AMD Opteron™ EE processors have the lowest known power per core of any x86 server processor, at 35W TDP (35W/8 = 4.375W/core). Intel's lowest power per core server processor, L5630, is 40W TDP (40W/4 = 10W/core). See <http://www.intel.com/Assets/PDF/prodbrief/323501.pdf>. Previous record held by AMD Opteron processor Models 4100 EE at 35W TDP / 6 cores = 5.83 W/core."



# CLOUD/HOSTING ARCHITECTURAL VIEW

**The Internet**

**Front End  
Web tier  
Cost/power**

**App Tier  
Performance/Cost/Power**

**Database Tier  
Performance**

**Virtualized hosting**

**Dedicated hosting**

**Co-located hosting**

Cloud Infrastructure View

Web Hosting View

# WEB HOSTING AND SILICON DEPLOYMENT



AMD Opteron™  
4000 Series



AMD Opteron™  
6000 Series

## Virtualized Systems

*Scalability and density*

Larger systems, holding dozens or hundreds of virtualized servers, often web sites



## Dedicated Systems

*Low power and low cost*

Customers demand their own systems, this play is all about cost and quick revenue stream



## Co-location

*Customer-provided servers*

We have no input on this area



# CLOUD TIERS AND SILICON DEPLOYMENT



AMD Opteron™  
4000 Series



AMD Opteron™  
6000 Series

## Web Tier (Front End)

*Low power and density*

Large number of servers to handle user requests/sessions and content caching



## Application Tier

*Low power and compute strength*

Scalable systems with core density to handle computational actions



## Database (Back End)

*Capacity and scale up*

Serving up the data to the app layer, Hadoop, map/reduce, memory caching



# VMWARE AND AMD

Through deep collaboration, VMware and AMD are delivering robust virtualization solutions to support our customers' business needs

AMD Booth at VMworld Virtual Conference



**2003** – VMware demos software at AMD Opteron™ processor launch

**2004** - VMware launches 64-bit support for AMD processors with GSX Server and Workstation products

**2004** – VMware launches ESX 2.1.1 with support for AMD Opteron™ processors

**2007** –AMD CEO gives keynote at VMworld and VMware releases ESX 3.5 with AMD-V RVI support

**2009** – VMware launches vSphere 4 with support for AMD Opteron™ support

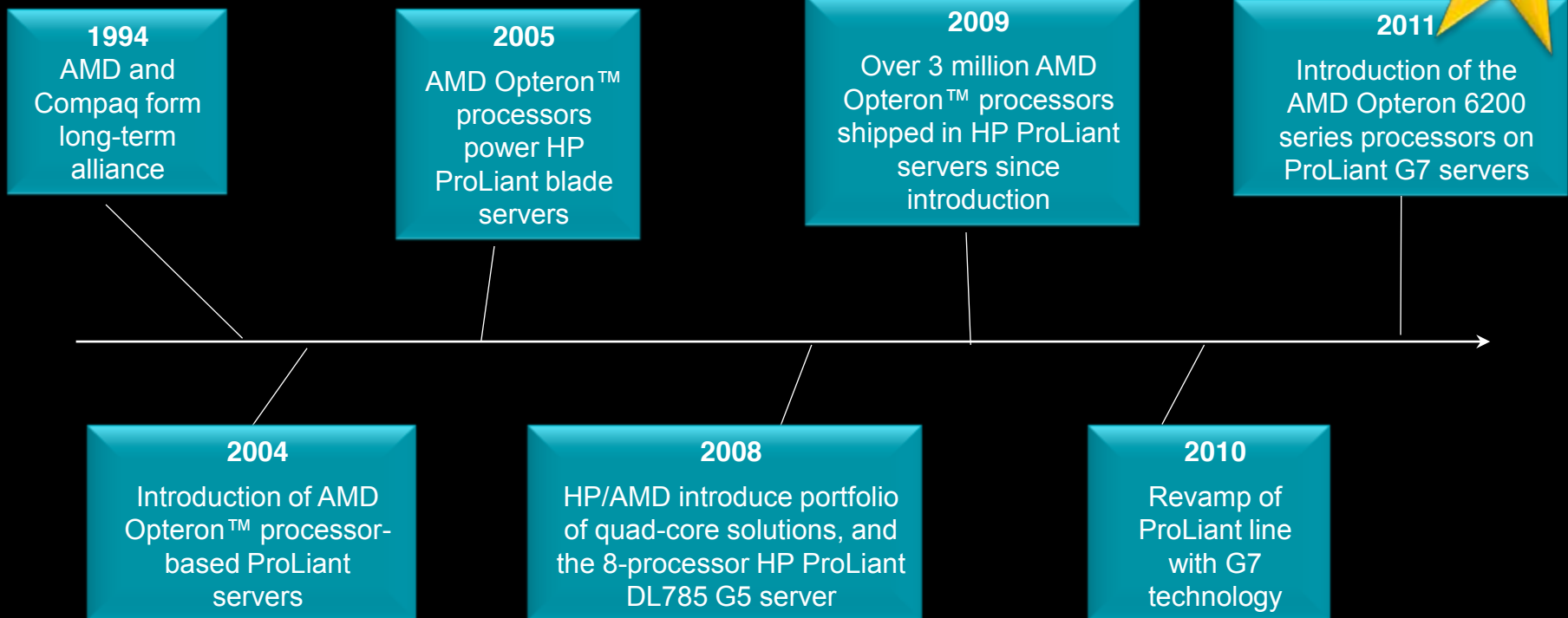
<http://www.vmworld.com/community/exhibitors/amd/>



# HP /AMD better together



More than 15 years of extensive collaboration results in a expansive portfolio of AMD Opteron™ processor-based servers, delivering unparalleled value for a broad range of server customers



# HP TARGETED CLOUD PLATFORMS



HP ProLiant SL165s G7

Maximum expansion with AMD Opteron™ 6100 Series processors, 24 DIMM slots, and 6 HDDs

## Ideal Application

HPC database tier  
Web memory-cache



HP ProLiant SL335s G7

Maximum density and efficiency with AMD Opteron™ 4100 Series processors and single node serviceability

## Ideal Application

Performance/Watt/\$  
Web front end



# COMPLETE HP WEB/CLOUD PORTFOLIO



	ProLiant DL585	ProLiant DL385	ProLiant DL165	ProLiant SL165s	ProLiant SL335s	ProLiant 465c	ProLiant BL685c	ProLiant Microserver
<b>Form Factor</b>	4 socket, 2U rack	2 socket, 2U rack	2 Socket, 1U rack	2 socket modular rack server, 1 server per U	2 socket, modular rack server, 2 servers per U	2 socket, blade	4 socket, blade	1 socket mini tower
<b>Processor</b>	AMD Opteron 6000 Series	AMD Opteron 6000 Series	AMD Opteron 6000 Series	AMD Opteron 6000 Series	AMD Opteron 4000 Series	AMD Opteron 6000 Series	AMD Opteron 6000 Series	AMD Athlon II
<b>Public Cloud</b>	✓✓	✓		✓	✓✓✓		✓✓	
<b>Private Cloud</b>	✓✓✓	✓✓✓	✓			✓✓✓	✓✓✓	
<b>Top Hosters</b>	✓✓	✓✓	✓✓	✓✓✓	✓✓✓	✓✓	✓✓	
<b>Regional Hosters</b>	✓	✓✓	✓✓✓	✓✓✓	✓✓✓	✓	✓	✓



# HP ProLiant /AMD Opteron™ Proof Points

## Performance

- Maximum VMs per server – **15% increase** in performance plus **21% more VMs** as compared to Intel Xeon 5600.<sup>1</sup>
- Up to **30% performance boost** with AMD Opteron 6200 Series over AMD Opteron 6100<sup>2</sup>
- Accelerate virtualization, and database workloads with up to **35% greater performance**<sup>3</sup>

## Efficiency

- **Lowest cost** per virtual machine<sup>4</sup>
- **Control and automate** energy use with intelligent power discovery, dynamic power capping, and thermal visualization
- **Reduce** datacenter footprint and energy consumption

## Scalability

- **Reduce** number of physical 2P servers up to “**23:1**”<sup>6</sup>
- **ROI** on 4P servers in as little as “**30**” days<sup>7</sup>
- Massive compute density with **2,048 cores per rack**<sup>8</sup>





THANK YOU 😊

