



Cloud Computing – The Network Perspective

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 **Mellanox**[®]
TECHNOLOGIES
Connect. Accelerate. Outperform.[™]

Base capabilities

- Low Latency communications
- High Bandwidth communications
- Offloading communication-related activities
- Optimizations for virtualization
- Standardized Capabilities

Build on our strengths – Strategic partnerships

InfiniBand Enables Lowest Application Cost in the Cloud



Microsoft Windows Azure

90.2% Cloud Efficiency

33% Lower Cost per Application

ORACLE® CLOUD

Application Performance

Improved up to 10X



3x Increase in VMs per Physical Server

Consolidation of Network and Storage I/O

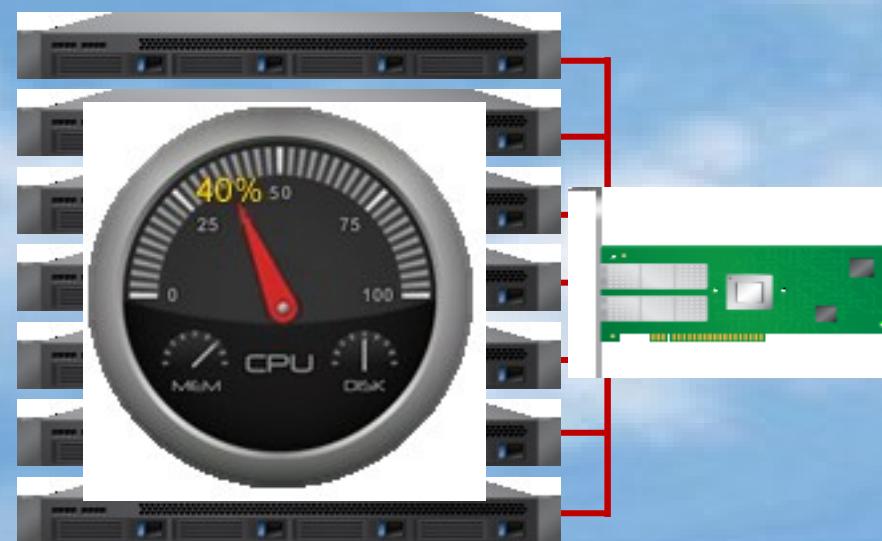
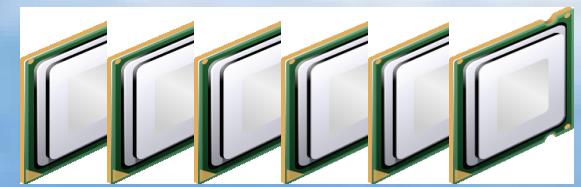


32% Lower Cost per Application

694% Higher Network Performance



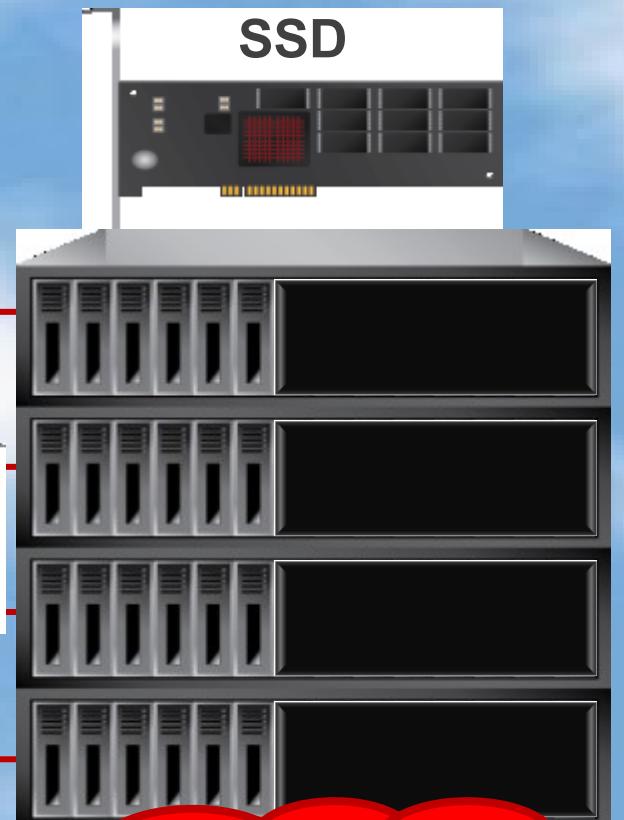
Inefficient Cloud Infrastructures



Low CPU utilization
Less VMs

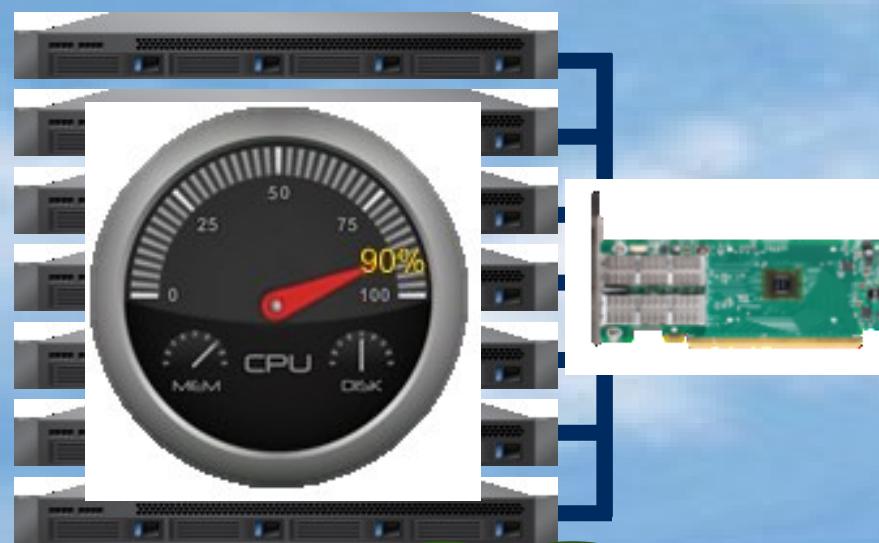
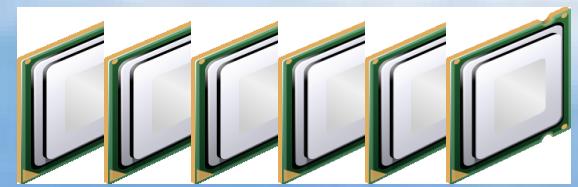


Complex interconnect
Complex management



Low storage throughput
More servers needed

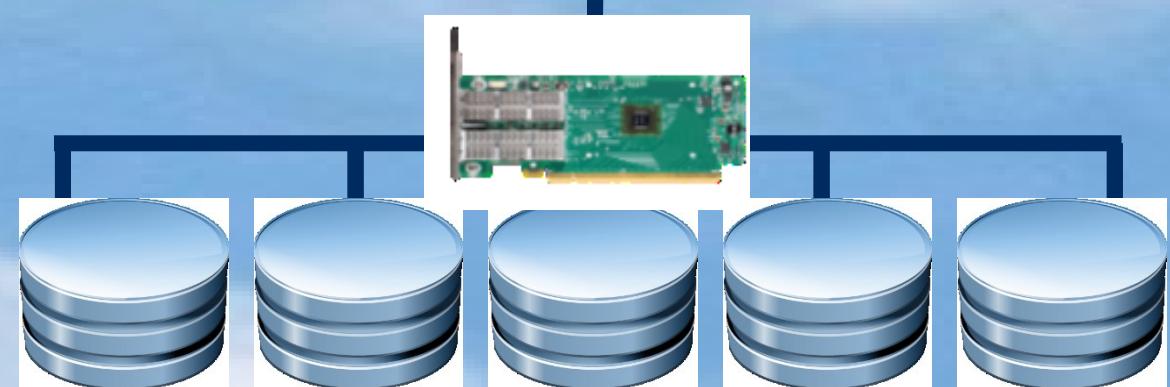
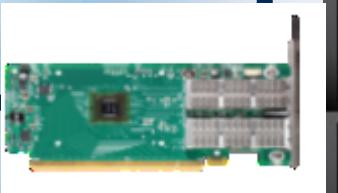
Mellanox Based Cloud Infrastructure



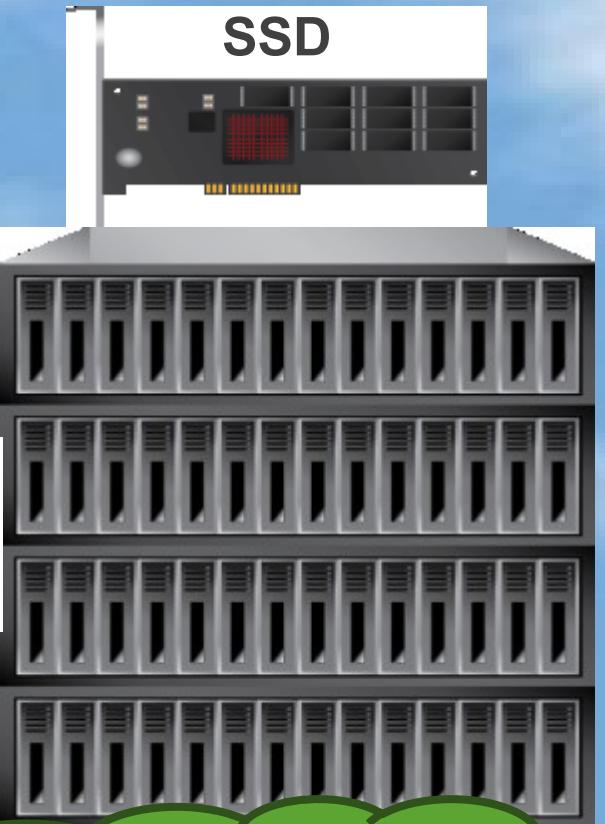
High CPU utilization
More VMs More tenants



Flat and scalable interconnect
Simplified management



High storage throughput
More storage for less power

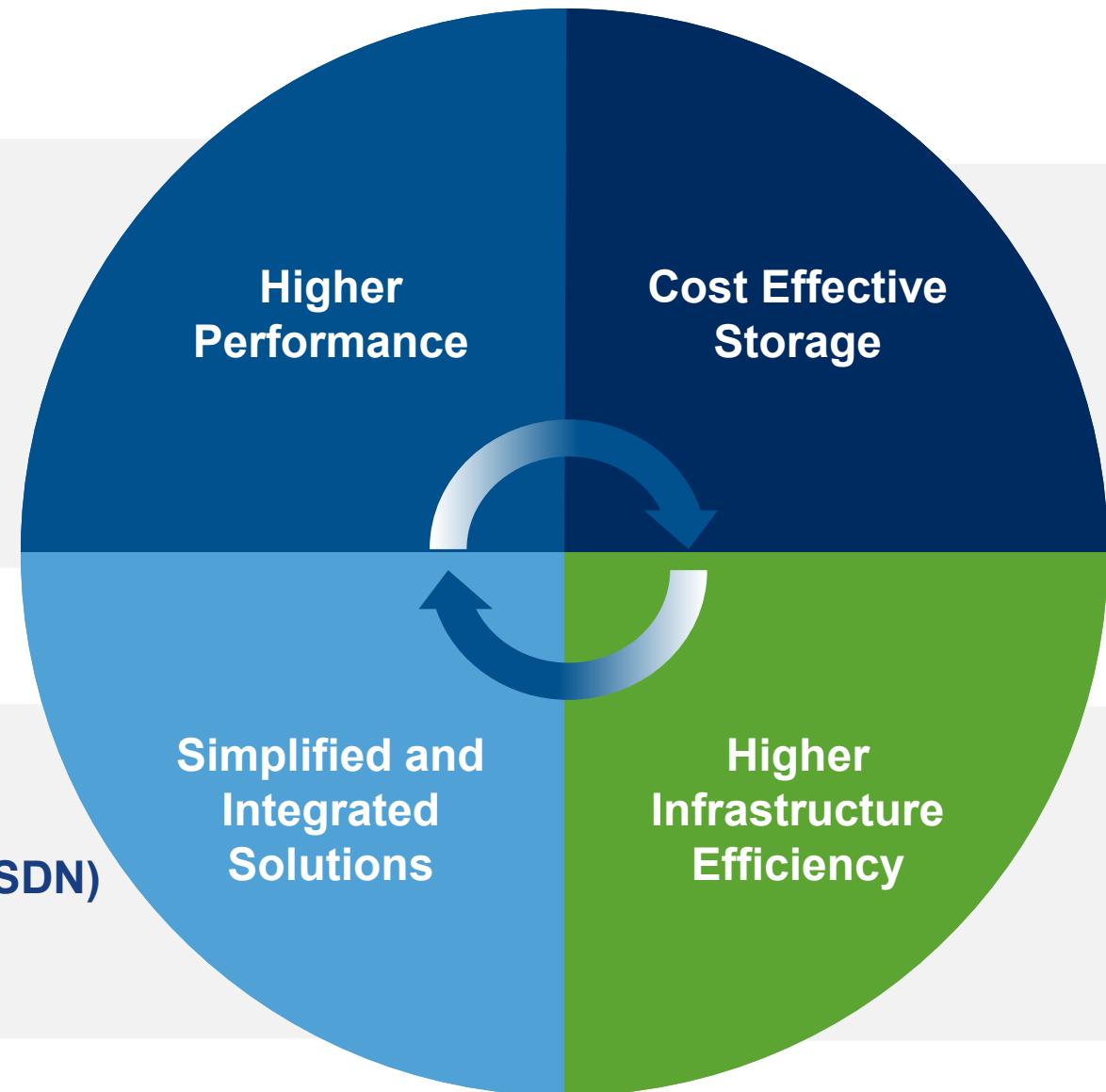


Mellanox Advantages



- 56Gb/s per port with RDMA
- 2us for VM to VM connectivity
- 3.5x faster VM Migration
- 6x faster storage access

- Reduction in software costs
- Centralized management (e.g. SDN)
- I/O consolidation (one wire)

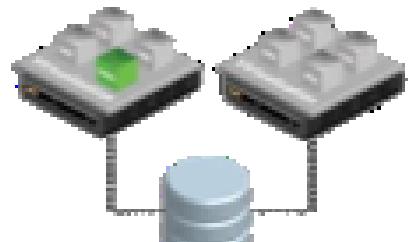


- Higher storage density
- No need for SAN to every server
- Utilizing existing disk bays

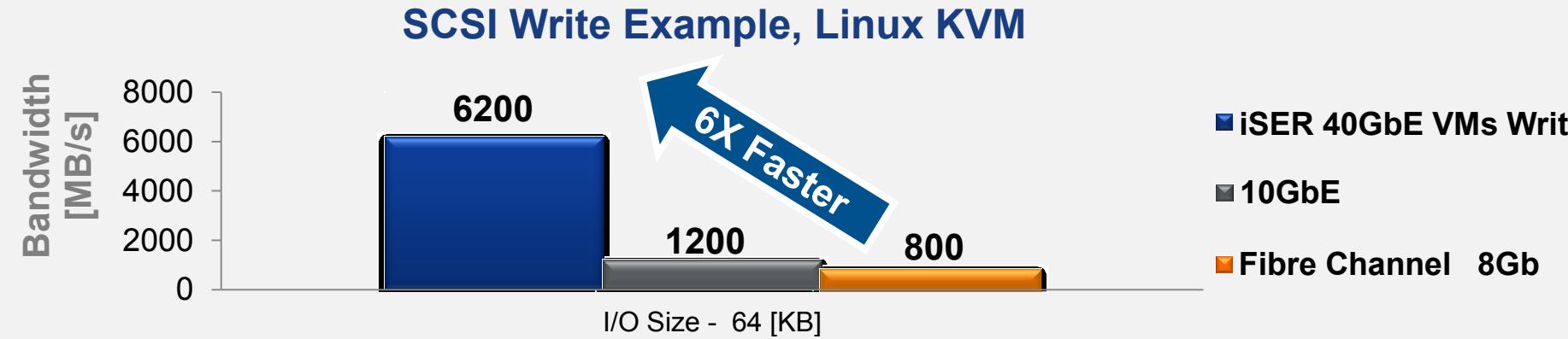
- Support More VMs per server
- Offload hypervisor CPU
- Unlimited scalability

Maximizing Cloud Return on Investment

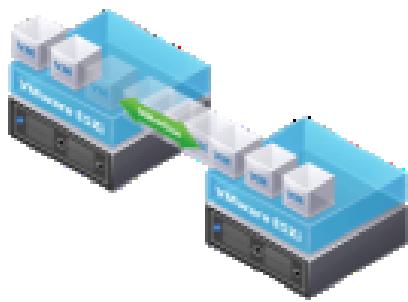
Accelerating Cloud Performance



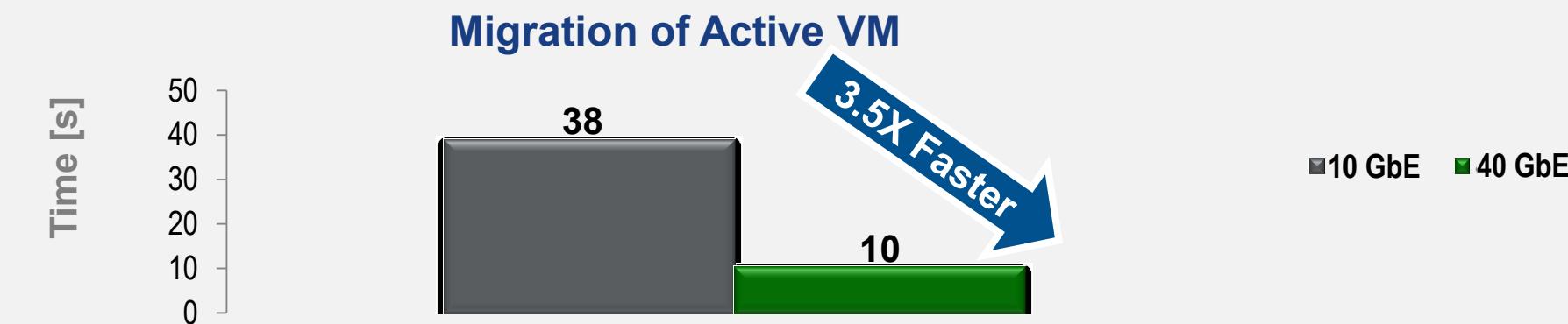
Storage



6X



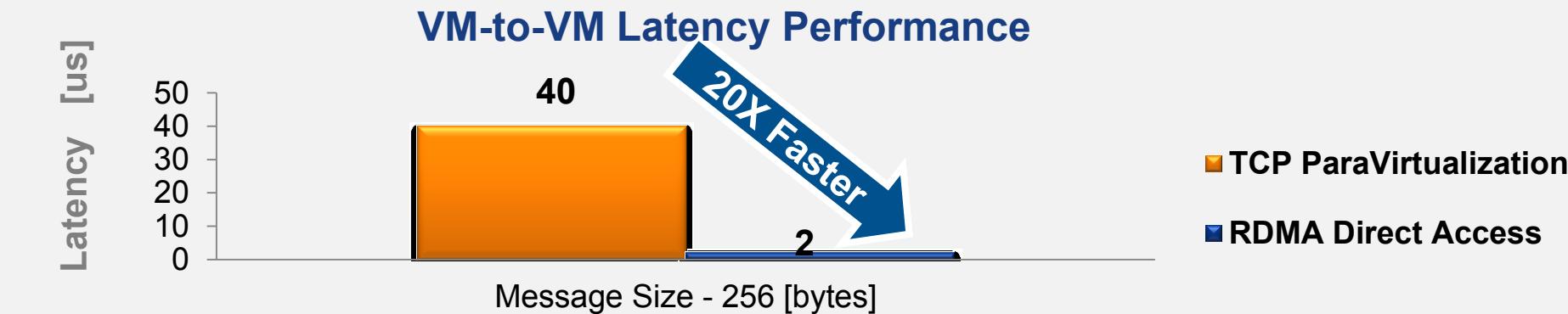
Migration



3.5X



Virtualization

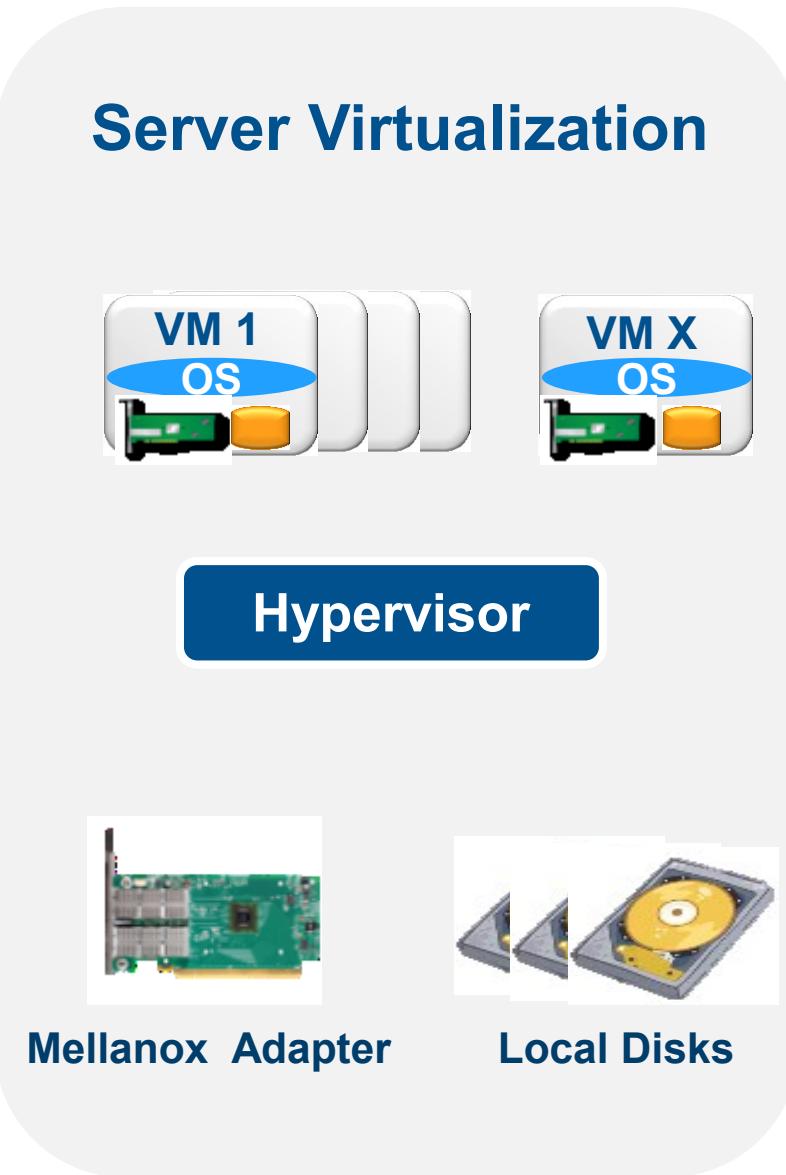


20X

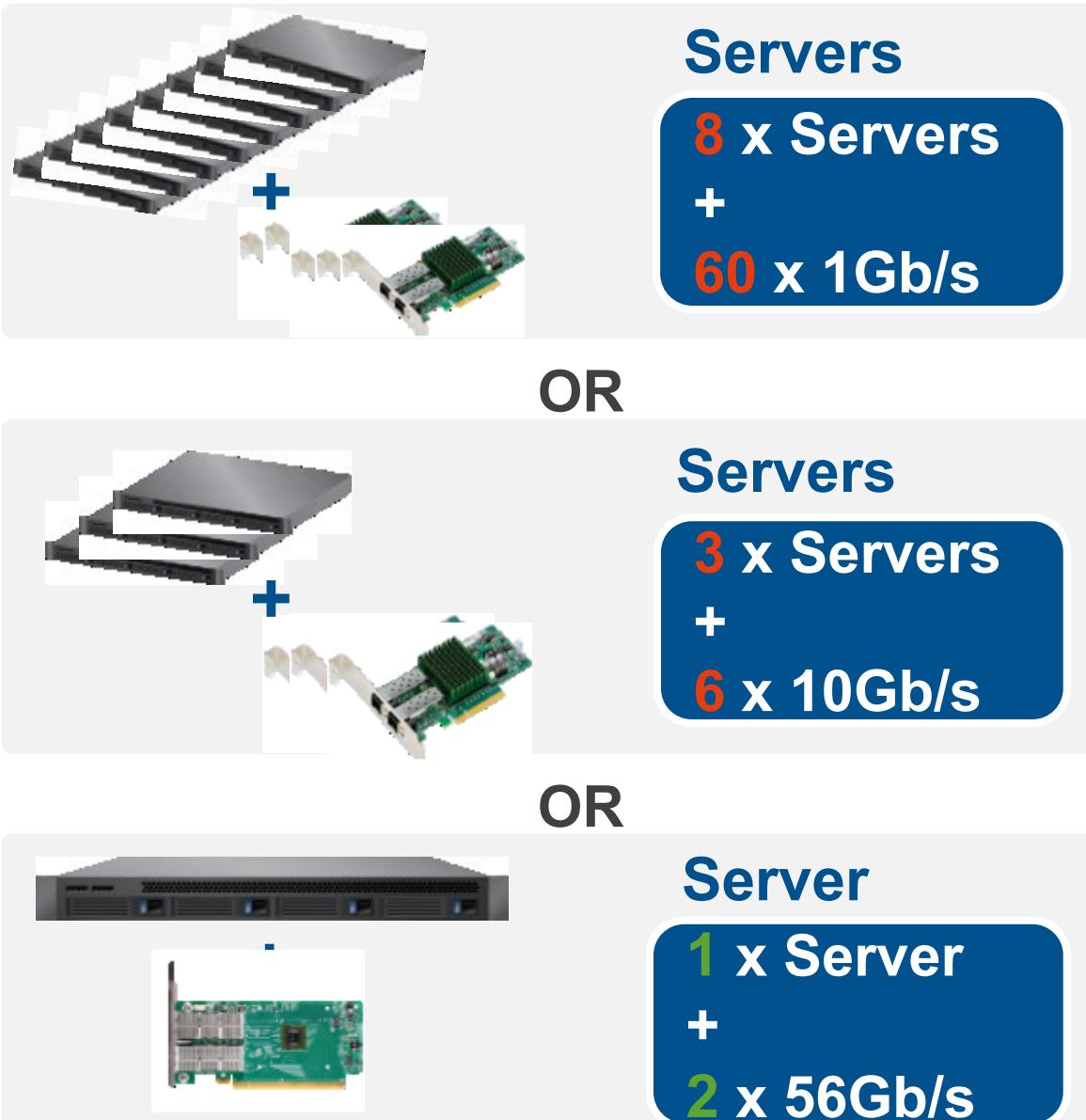
Thank You



More Virtual Machines Per Server



= **60 VMs at 0.5 Gb/s
Per VM** =



Interconnect Bandwidth Determines VM Density

Enabling Best Cost-Effective Clouds



Cloud Instance Configuration			User Cost (Month)**		User Saving %
ECU* (Elastic Compute Unit)	RAM (GB)	HD (GB)	ProfitBricks	Amazon	
2	3.75	410	\$77.8	\$115.2	40%
4	7.5	850	\$117.92	\$230.4	55%

Maximizing Cloud Return on Investment

*ECU – compute performance equivalent to 2007 Intel Xeon or AMD Opteron CPU running at 1 GHz to 1.2 GHz

** Based on PROFITBRICKS
The IaaS-Company.