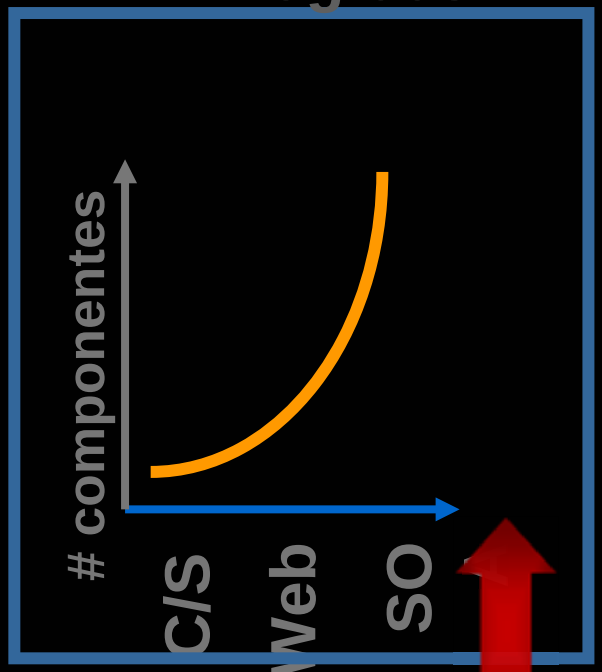
VENTAJAS DE LA VIRTUALIZACIÓN

David Pascual
Equallogic System Consultant

EVOLUCIÓN DE LOS SERVIDORES

Explosión del # de componentes Físicos y Lógicos



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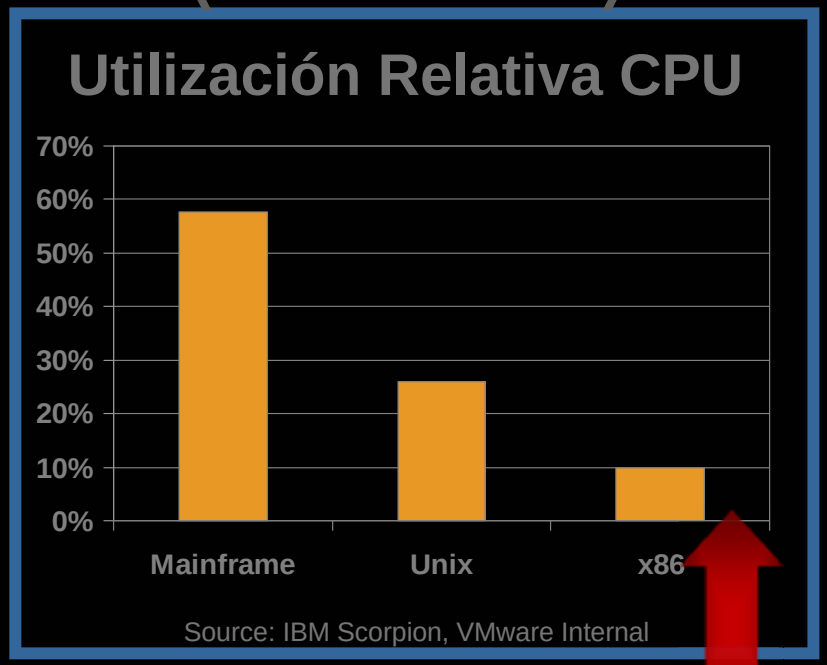
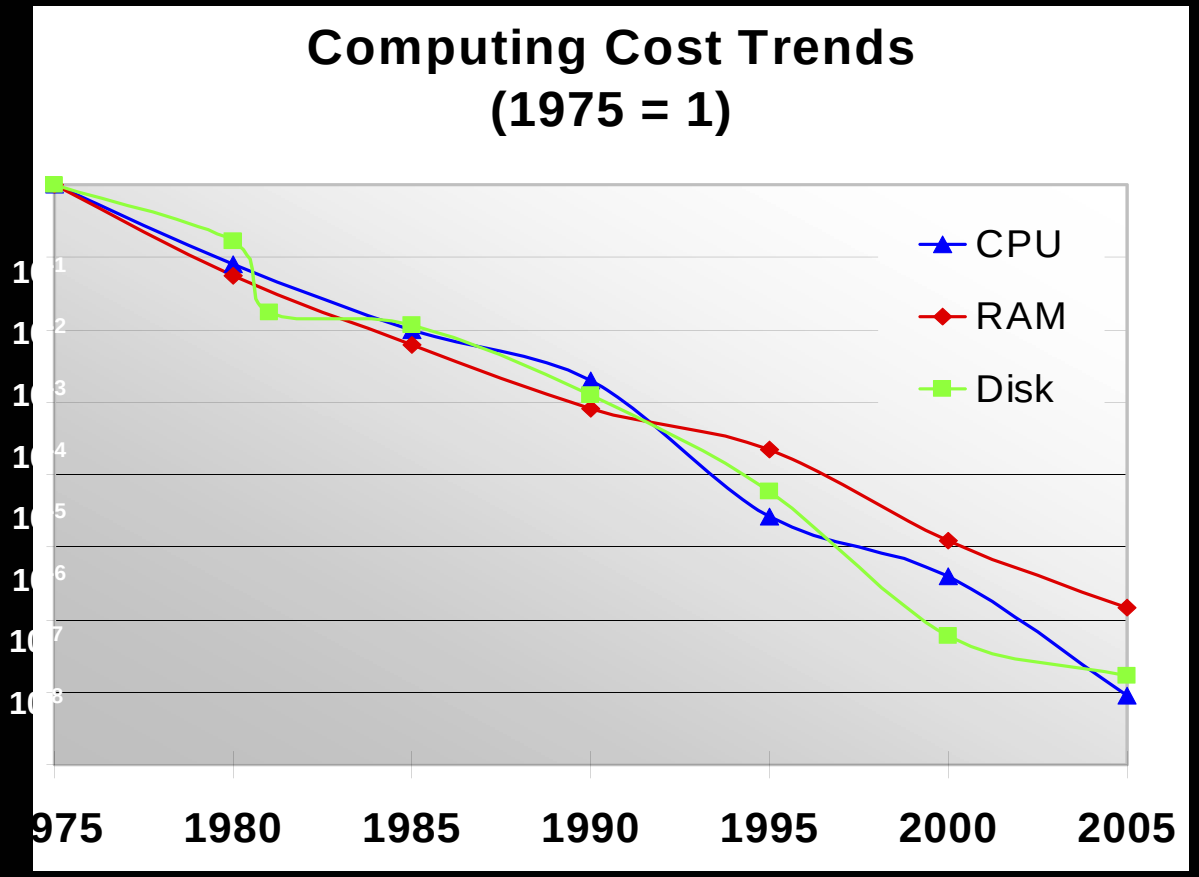
Baja utilización x86… Y Disminuyendo (i.e. Multicore)



Complejidad

Ineficiencia

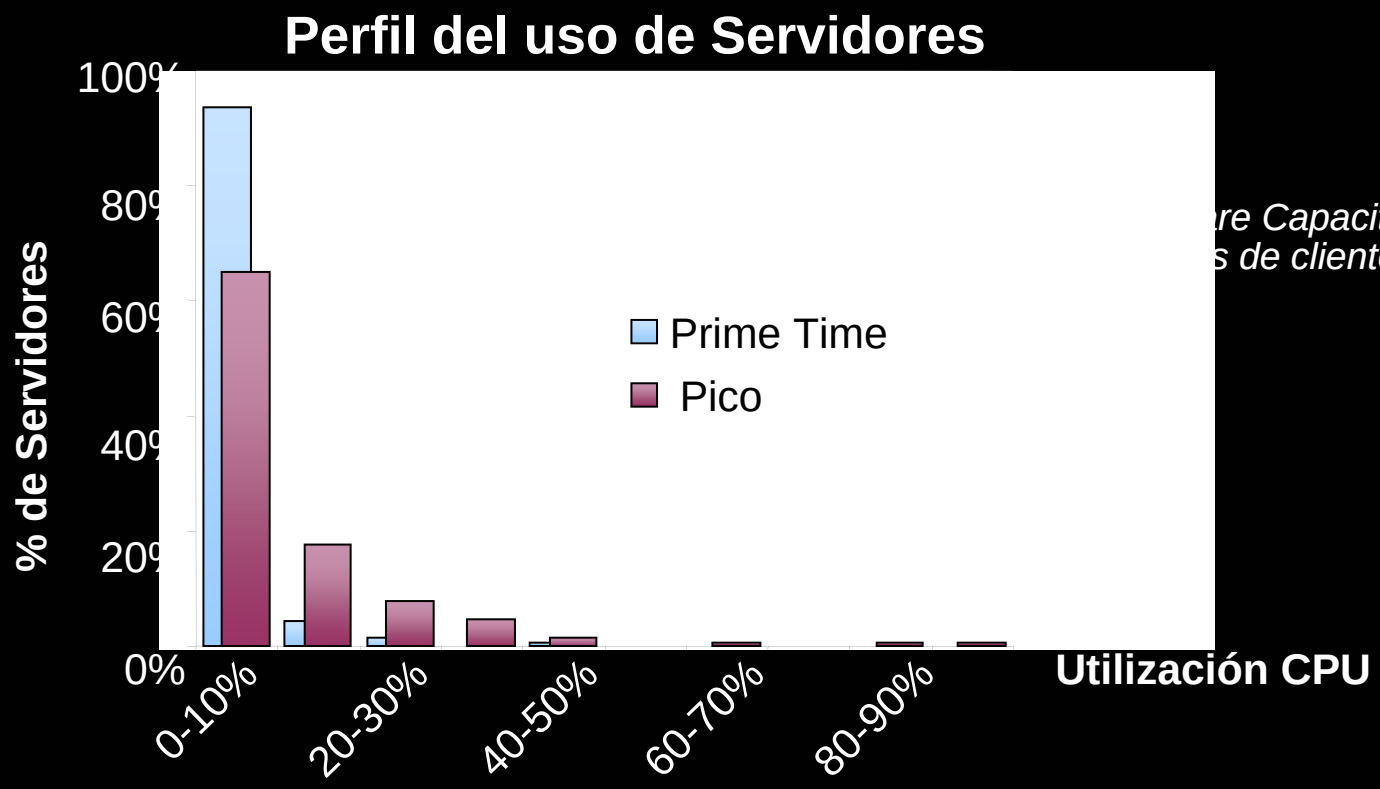
TENDENCIA MERCADO. COSTES UNITARIOS DECRECIENTES



Sources: Kurzweil, Jorgenson, Chainlink

Coste de los servidores decreciendo

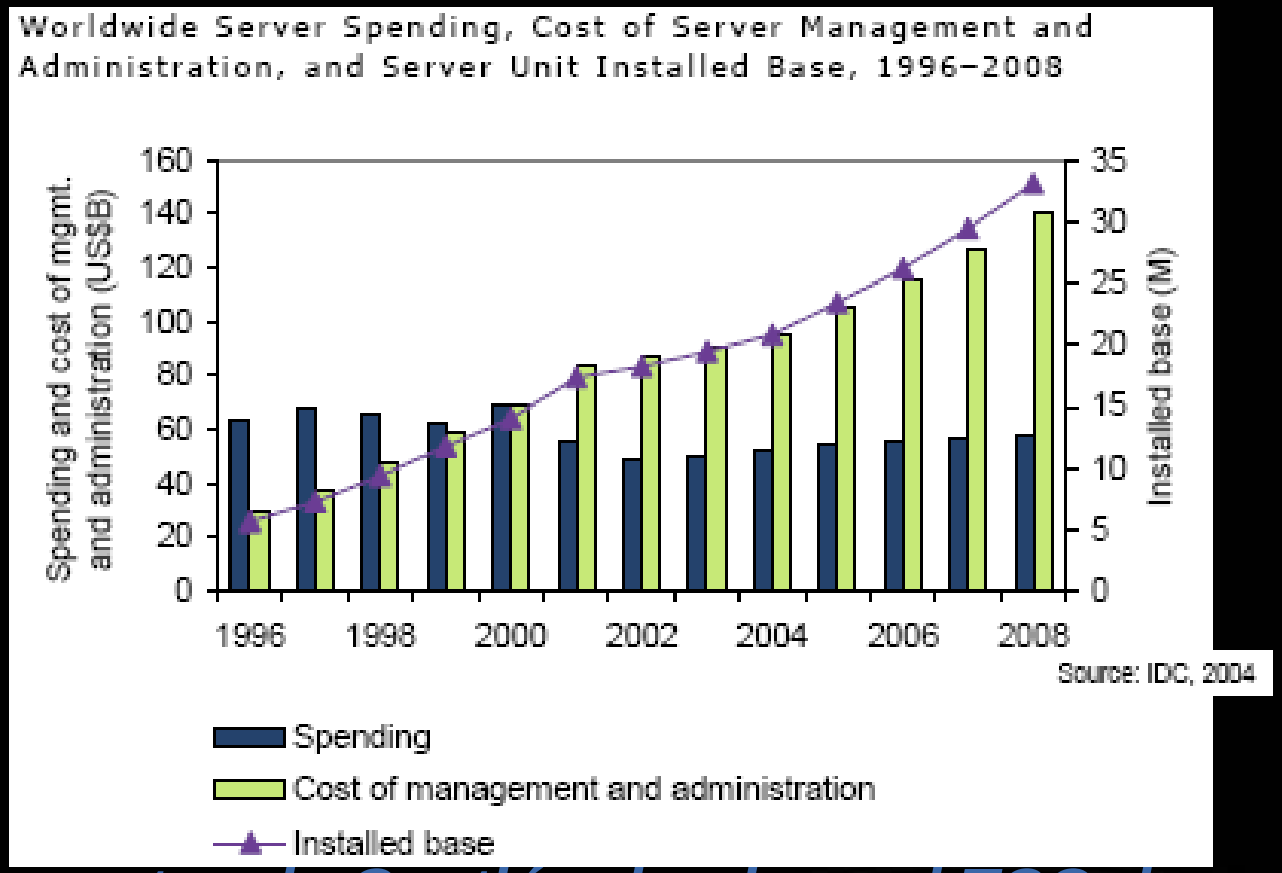
USO TÍPICO DE SERVIDORES



re Capacity Planner
s de clientes

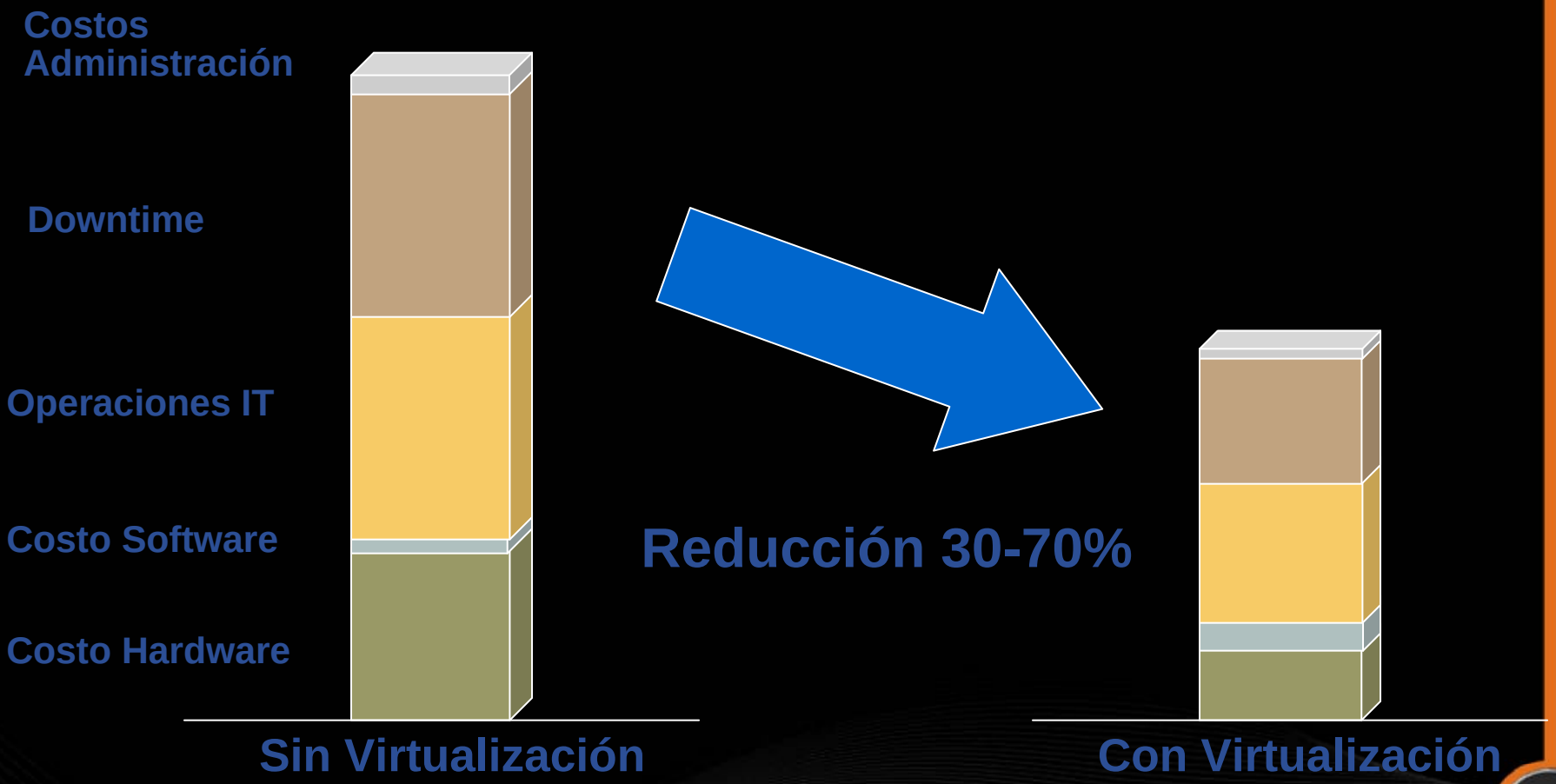
Pago por uso de recursos inutilizados

EL COSTE DE LA GESTIÓN PREVALECE



Los costes de Gestión dominan el TCO de servidores

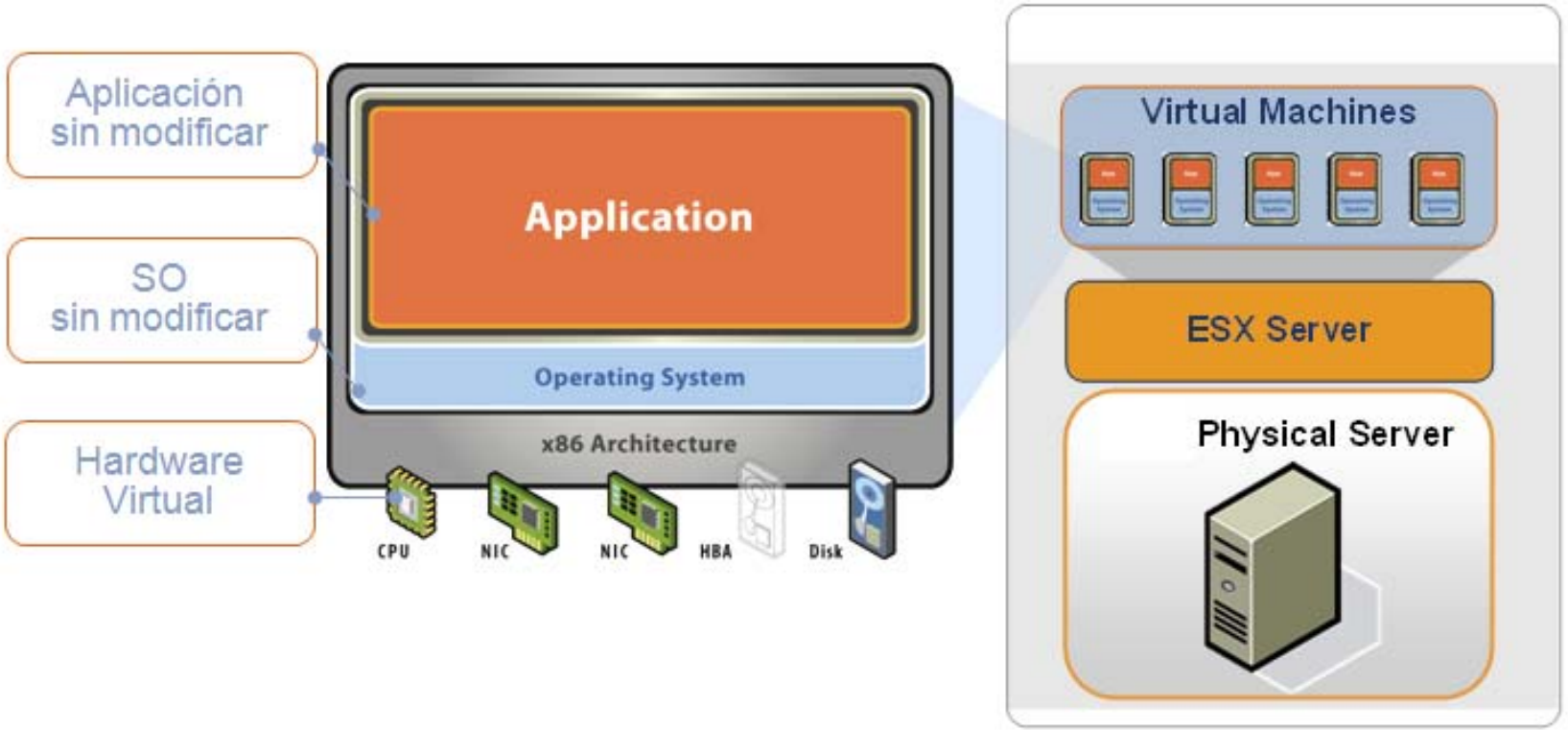
COMPARACIÓN TCO



CONCEPTOS BASICOS DE LA VIRTUALIZACIÓN

Sistemas Virtualizados

Cada Máquina Virtual es un sistema completo encapsulado en un conjunto de ficheros

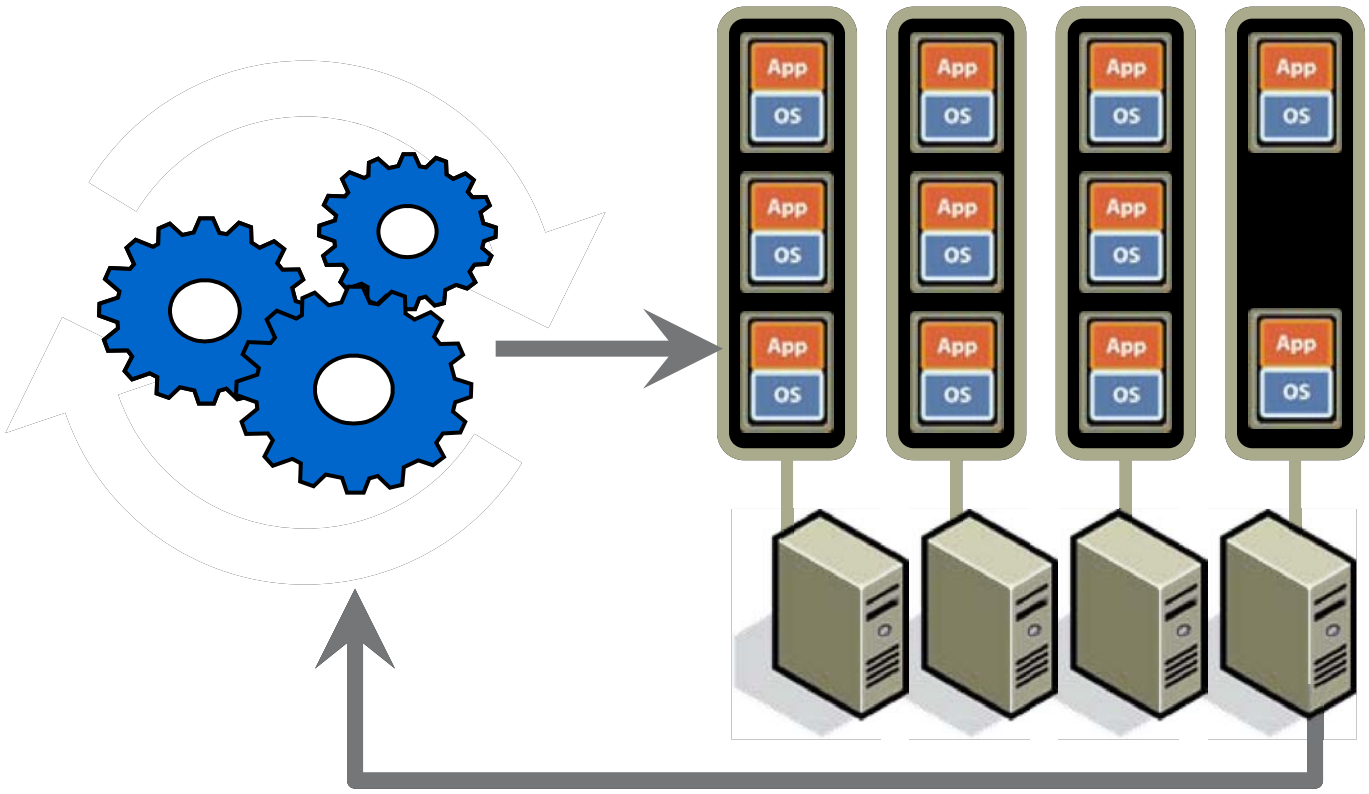


VMware Infrastructure – Libertad de SO

Elija el Sistema Operativo más adecuado para su aplicación.

Optimizado para ejecutar los principales SO sin modificar.

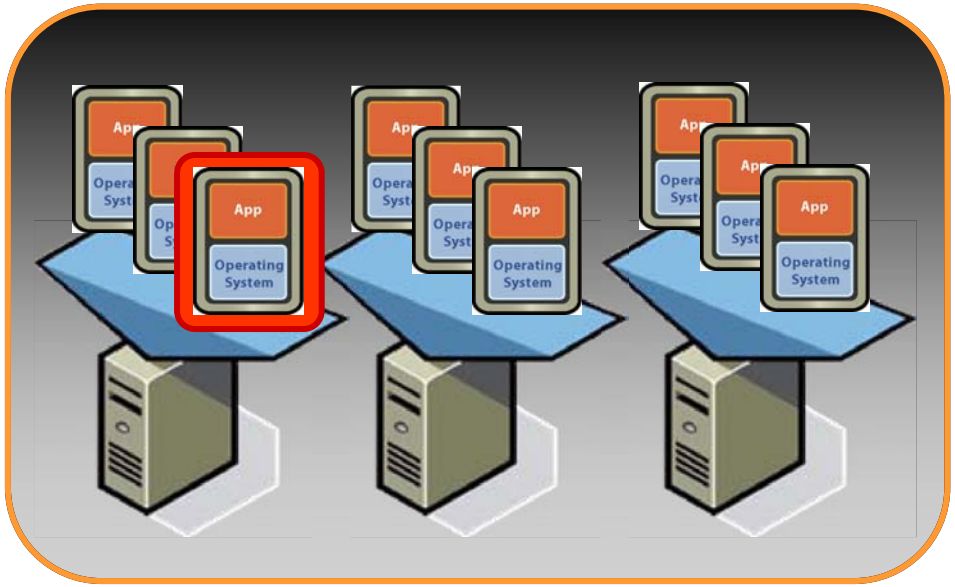
Capacidad bajo demanda sin afectar al servicio



Disponibilidad de Recursos para Aplicaciones Críticas

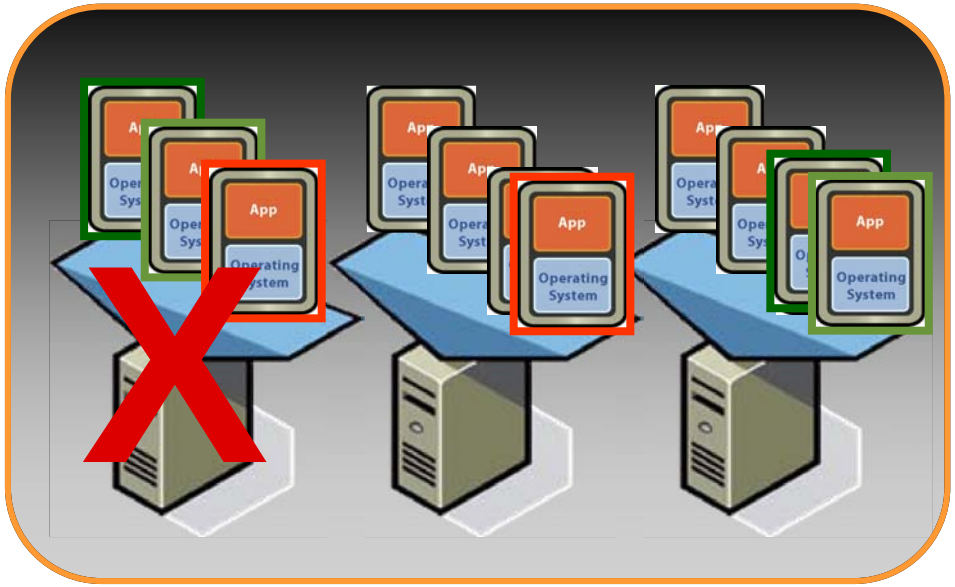
DRS

- Balanceo Dinámico
- Optimización Contínua

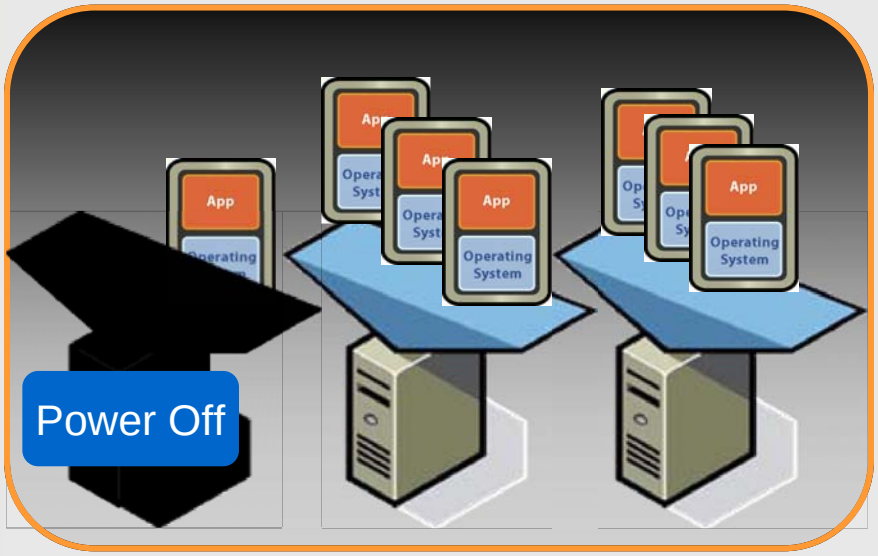


Disponibilidad Automática para todas las Aplicaciones

VMWARE HA



Distributed Power Management

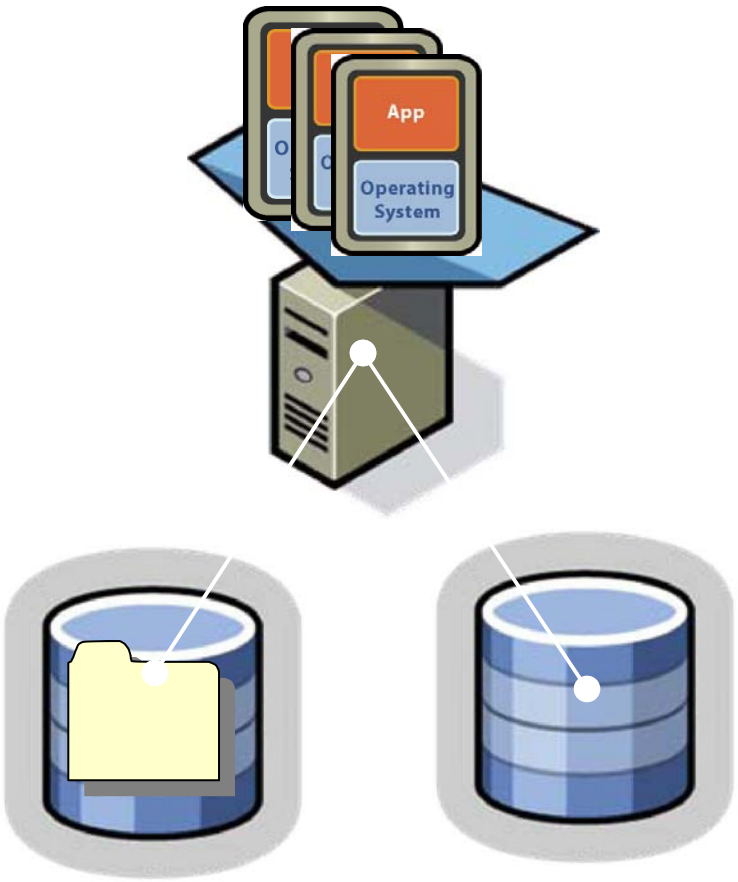


- Consolida carg… menos servidore… cluster necesita… recursos
- Deja los servidores … necesarios en standby
- Pone los servidores online cuando la necesidades de carga crecen

Eficiencia Energética

- Minimiza el consumo de energia al tiempo que garantiza los niveles de servicio
- Sin disrupción o tiempo de parada en las máquinas virtuales

Storage VMotion

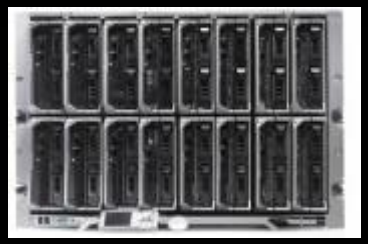


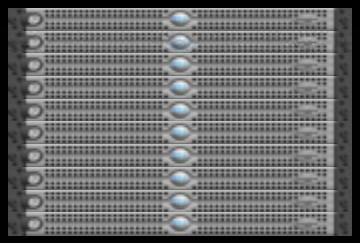
- **Migración independiente del almacenamiento para discos de máquinas virtuales**
  - **Tiempo de parada cero para las máquinas virtuales**
  - Independiente de la **LUN**
  - Soportado para SAN de Fibra
- **Minimiza el tiempo de parada planificado por el almacenamiento**
- **Solución completa del mantenimiento planificado para servidores y almacenamiento con VMotion y Storage VMotion**

BLADES

WHY CHOOSE BLADE SERVERS?

Space (Density)





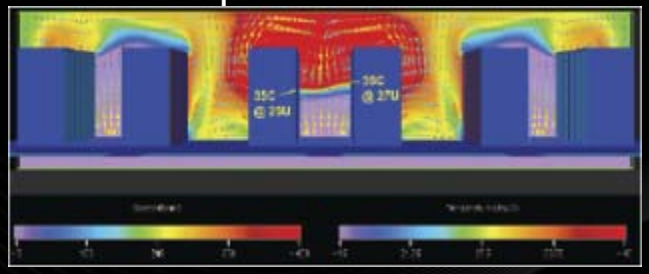
- 52% more dense than 1U Servers
- No extra space needed for switches or KVM
- Over 90% cable reduction

Fast to Deploy, Easy to Manage

- Centralized management, single interface for inventory, monitoring for all components
- Cable management & strain relief bars

Power/Cooling

- Consumes less power draw than same number of 1U servers
- Up to 19% more power efficient[1], and up to 25% better performance/watt than HP[1]



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Lower TCO

Get IT Faster

Run IT Better

Grow IT Smarter

POWEREDGE M-SERIES BLADES

The M1000e Enclosure

Only Dell Delivers Snap-In Scalability

With FlexIO Switch Technology

Blade Servers

Choice for the data center

M600 – Intel Based Blade

M605 – AMD Based Blade

M805 – Double Height blade for increased RAM & I/O

I/O Modules

Designed for flexibility and throughput

Ethernet Switches:

PowerConnect™

3 Cisco Options

Fibre Channel Switches:

2 Brocade Options

plus

Ethernet & FC Pass Through

Management

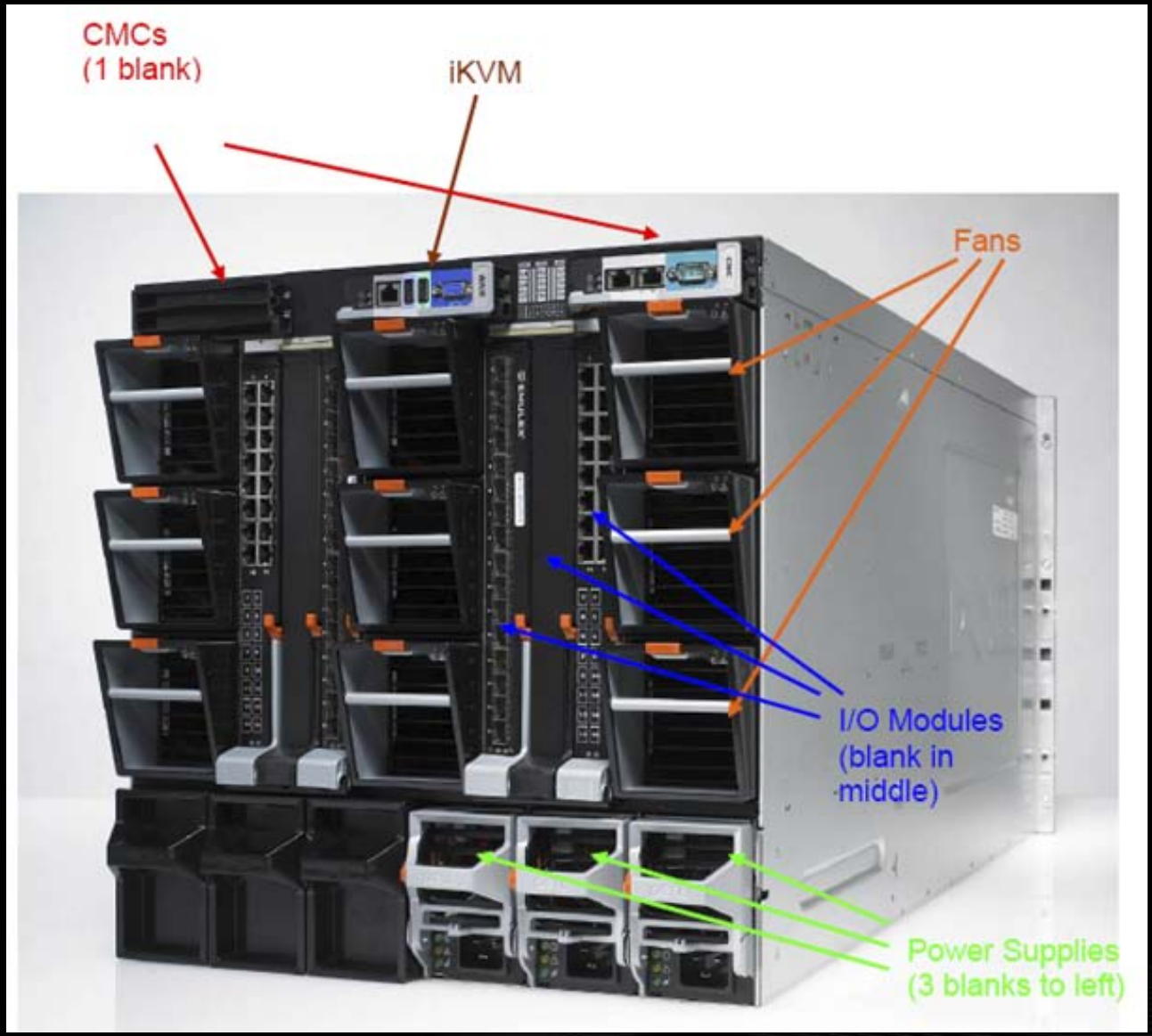
For simple local and remote access

Internal KVM

Front LCD

Chassis Management Controller (CMC)

Integrated DRAC


CMCs
(1 blank)
iKVM
Fans
I/O Modules
(blank in
middle)
Power Supplies
(3 blanks to left)

M1000E: DESIGNED FOR EFFICIENT POWER

The most energy efficient blade server solution built from the ground up using energy smart technologies. Enables customers to save on energy costs and increase capacity. Energy efficiency that HP and IBM can't beat.

Power Management Features

Power Monitoring

- Real time, actual power consumption (aggregate chassis & individual blade)
- High/Low "watermarks"

Policy-based Power Management

- Customer-defined chassis "power ceiling"
- Alert on Ceiling: CMC sends an alert if ceiling is reached
- Throttle on Ceiling: CMC lowers proc/memory frequency on blades to reduce consumption
- Slot-based Power Throttling Prioritization: customer assigned throttling order

Power/Thermal Friendly Design

Dynamic Power Supply Engagement

- Automatically engages the minimum number of supplies required to power a given configuration, maximizing PS efficiency
- Dynamic N+N, N+1 or N+0

High Efficiency Power Supplies

- 91%+ AC/DC Conversion Efficiency

High Efficiency Fans

- Design innovations that yield 30% power savings vs. existing technology at same CFM operating point

The M1000e is anticipated to lead the industry in efficiency by a 10-20% margin

M1000E CHASSIS

Chassis Front

10U Chassis Houses 16 x 2-socket blades

- Provision for additional blade form factors

Interactive Chassis LCD/control panel

- Deployment “Wizard”
- Chassis, blade, & I/O module information & alerts
- Front VGA and 2 USB ports for KVM

Chassis Rear

Chassis Management Controllers (CMC)

- Optional redundancy

Integrated Management Controllers (iDRAC)

- Each blade features remote management functionality

Optional Local KVM switch (Avocent)

- Each blade has vMedia/vKVM standard

6 I/O Module bays

9 Hot plug/Redundant cooling fans

6 Hot plug/redundant power supplies (3+3)

- 200+ volt only

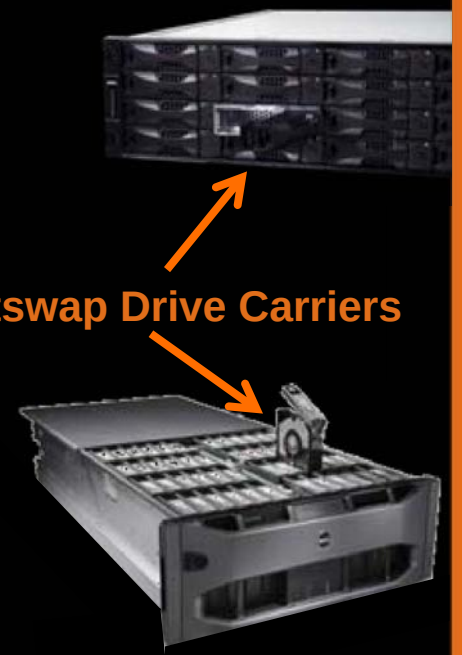
Almacenamiento Virtualizado Equallogic

SOLUCIÓN SAN COMPLETAMENTE VIRTUALIZADA

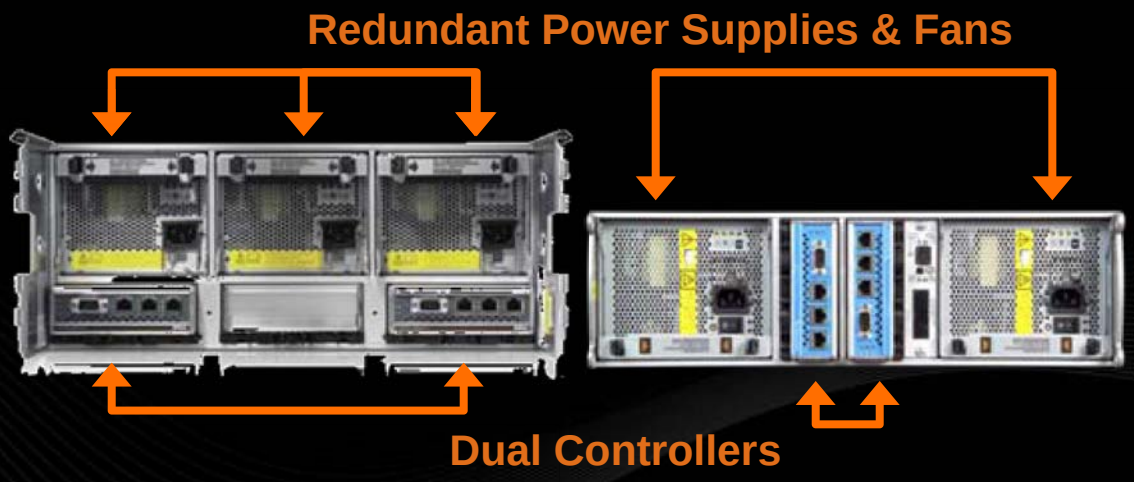
- Enterprise Software que proporciona:
  - Fácil **set-up**
  - **Gestión** unificada
  - **Rendimiento** optimizado
  - Fácil **Expansión**
  - **Protección de datos** completa
  - **Niveles** de almacenamiento
  - **Todo el sw incluido.**
- Hardware de misión crítica que proporciona:
  - Fiabilidad End-to-end
  - Escalabilidad bajo demanda

PERFORMANCE AND END-TO-END HARDWARE RELIABILITY

- Fully Redundant & Hot Swappable (5-9's Availability)
  - Controllers
  - 16 or 48 disk drives
  - Fans and power supplies
- High-end Components
  - 3 active 1-GB network interfaces
  - Enterprise SATA or SAS drives
  - 2 or 4 GB battery-backed mirrored memory



- Enclosure Monitoring System
  - Component status
  - Disk drive health
  - Temperature



ON DEMAND SAN SCALABILITY

MODULARITY

- Each array module contains controllers, disks, and firmware
- Single firmware architecture
- Completely upgradeable & interoperable
- All-inclusive design enables simple, one-time deployment with full features
  - No additional license fees, keys, or software

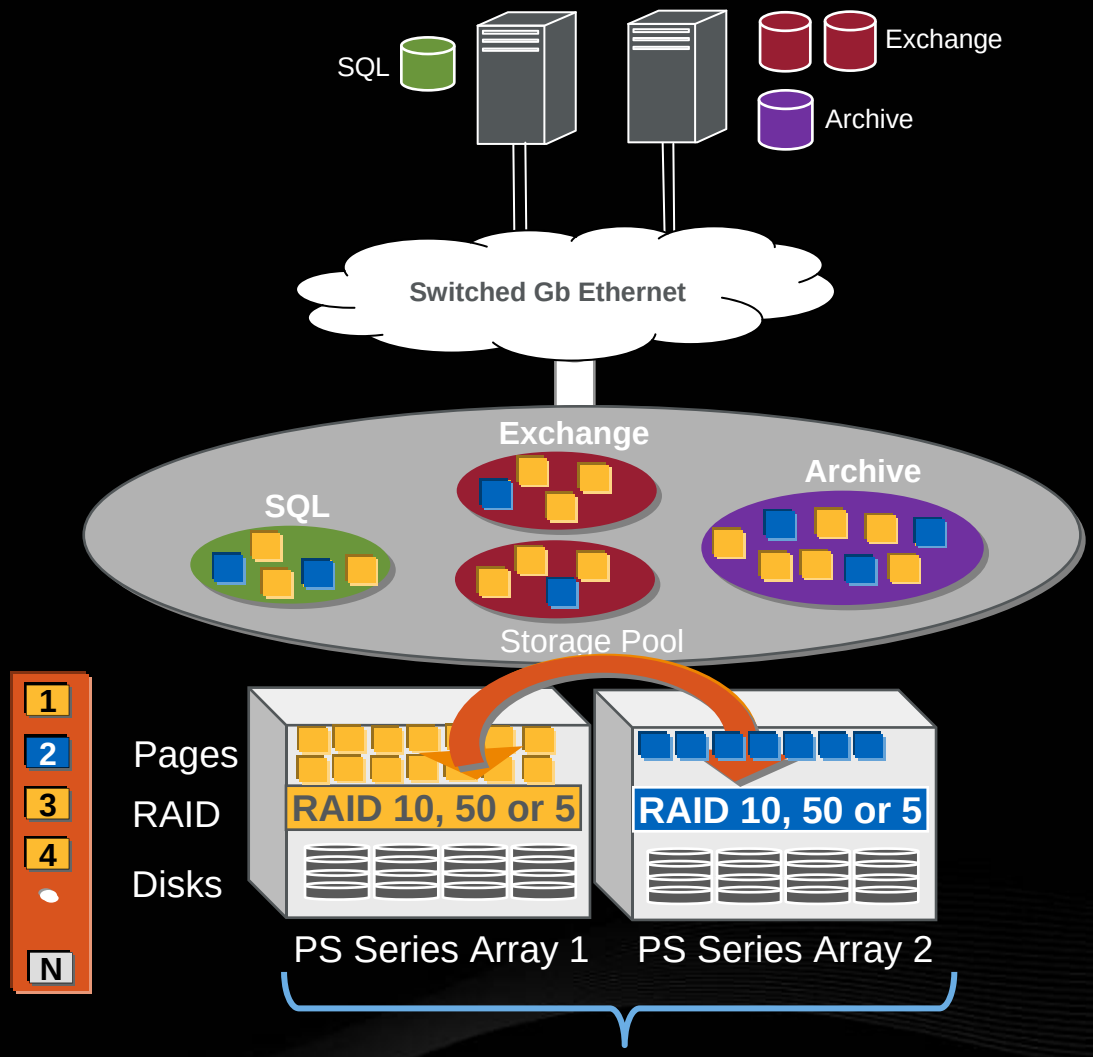
Flexible On-demand Growth

- A PS Storage Stack combines multiple PS Series arrays into a single SAN

SCALABILITY

- "Buy on demand" - flexible capacity & performance growth by adding PS Series arrays
- Single point of management – regardless of scale or array type
- Virtualized PS Series SAN can be scaled out to
  - 576 TB
  - 65,000 high transaction users

PS SERIES ARCHITECTURE

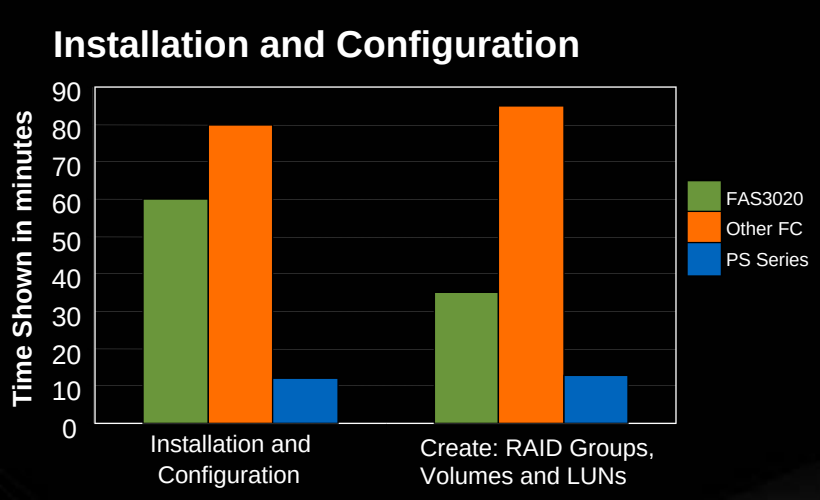


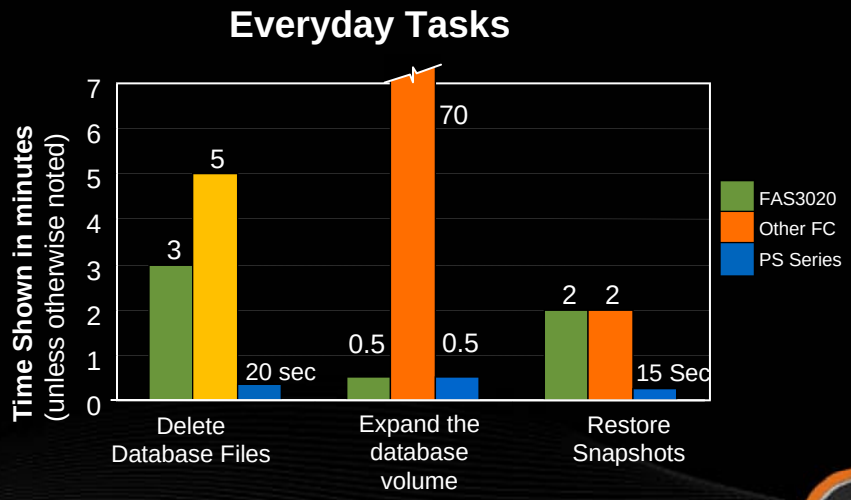
Automatic and transparent load balancing across arrays

USABILITY COMPARISON

EQUALLOGIC, NETAPP FAS3020, OTHER MID-RANGE FC

- Faster, Easier, and More Intuitive Setup
  - Install and configure a PS Series array in a fraction of the time
  - Everyday tasks take less time with EqualLogic
  - Less time means lower project costs and fewer headaches

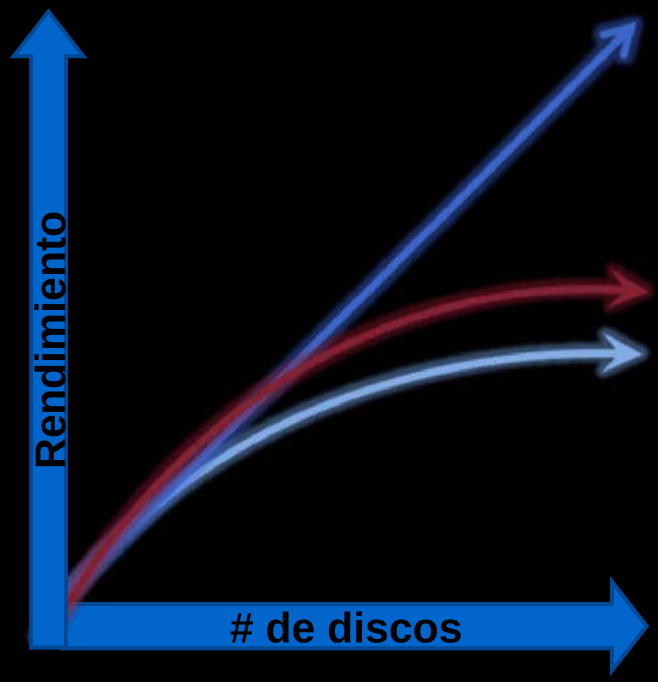




Data from: VeriTest report - "Network Appliance FAS3020 and [other FC array]: Comparison of Usability and Performance." May 2005
VeriTest report: "EqualLogic PS Series Usability and Performance," July 2006

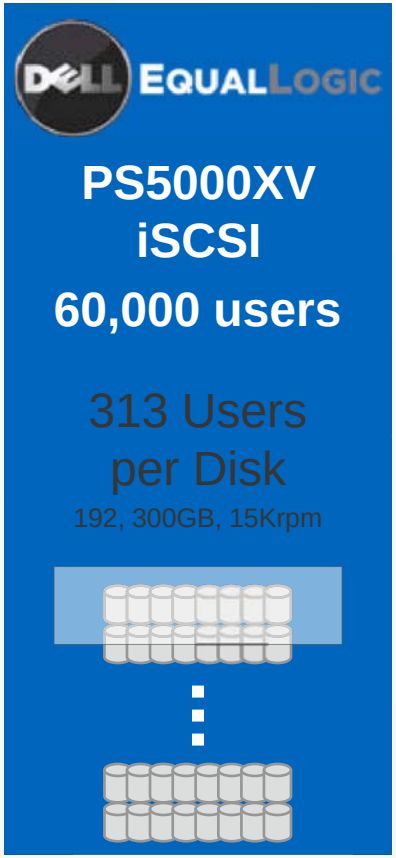
EQUALLOGIC VS. RENDIMIENTO TRADICIONAL

EqualLogic escala en capacidad y rendimiento linealmente

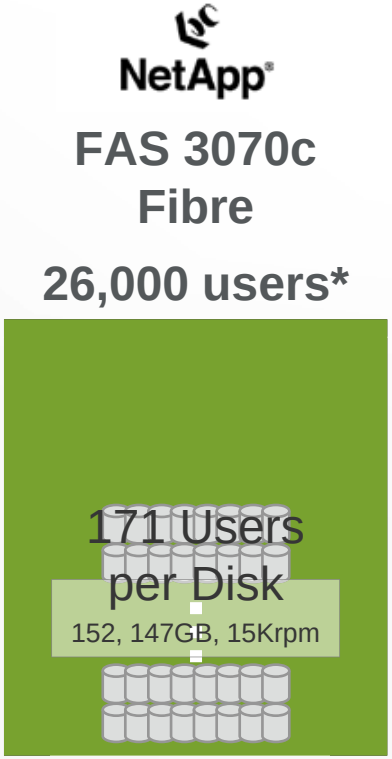


- **EqualLogic: mejor rendimiento en aplicaciones de negocio**
- **iSCSI Tradcional: rendimiento comparable a FC en aplicaciones de negocio**

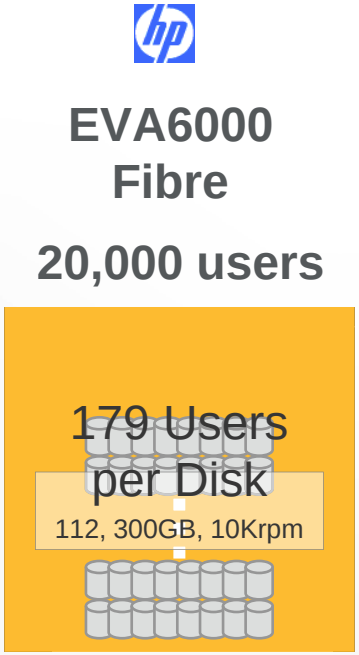
EXCHANGE 2007 PERFORMANCE LEADER
EQUALLOGIC SUPPORTS MORE USERS WITH FEWER DISKS



174 IOPs / Disk



115 IOPS/ Disk*



76 IOPS/ Disk

Data sources: EqualLogic ESRP Whitepaper and Microsoft ESRP Web site. Testing conducted on the EqualLogic PS3900XV, the former name for the PS5000XV.

* Performance not sustained over time and not sustained as raw capacity utilization increases above the 24% NetApp tested. (NetApp TR3521-3 “Cooking the Numbers“) Additional restrictions apply.

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PREGUNTAS

- MUCHAS GRACIAS