HP ProLiant blade planning and deployment

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Agenda

- Prerequisites and expectations
- HP server blade portfolio
- ProLiant BL p-Class technology overview
- Basic server deployment and management
- Classroom setup and configuration overview
- Labs and demos
  - GbE2 interconnect switch configuration (demo, 30 minutes)
  - Scripted installation of Microsoft Windows Server 2003 with SAN connectivity and boot from SAN (lab, 2 hours)
  - HP SIM 4.1 discovery and basic management (lab, 30 minutes)

Prerequisites

- Training
  - ProLiant Systems Technologies
  - SAN Fundamentals
  - Microsoft Windows Server 2003 Administration and Troubleshooting
- Basic knowledge
  - ProLiant Essentials Rapid Deployment Pack (RDP)
  - HP Systems Insight Manager 4.1 (HP SIM)

Expectations

- Session goal
  - Introduction to installing, configuring, and deploying HP ProLiant BL p-Class server blades
  - Less than 10% lecture; remaining time spent on hands-on labs
- Initial student station configuration
  - Microsoft Windows Server 2003 with:
    - Active Directory
    - DNS
    - DHCP
  - Microsoft SQL Server 2000
  - RDP 1.60 (deployment server)
  - HP SIM 4.1

HP server blade portfolio

HP server blade portfolio

1P

BL10e (BL e-Class)
- Maximum density blades for scale-out solutions
- Front-end web and infrastructure applications

2P

BL20p (BL p-Class)
- Performance 2P blade designed with enterprise availability
- Mid-tier applications server blade

New

BL30p (BL p-Class)
- Optimized for compute density & external storage solutions
- Mid-tier applications server blade

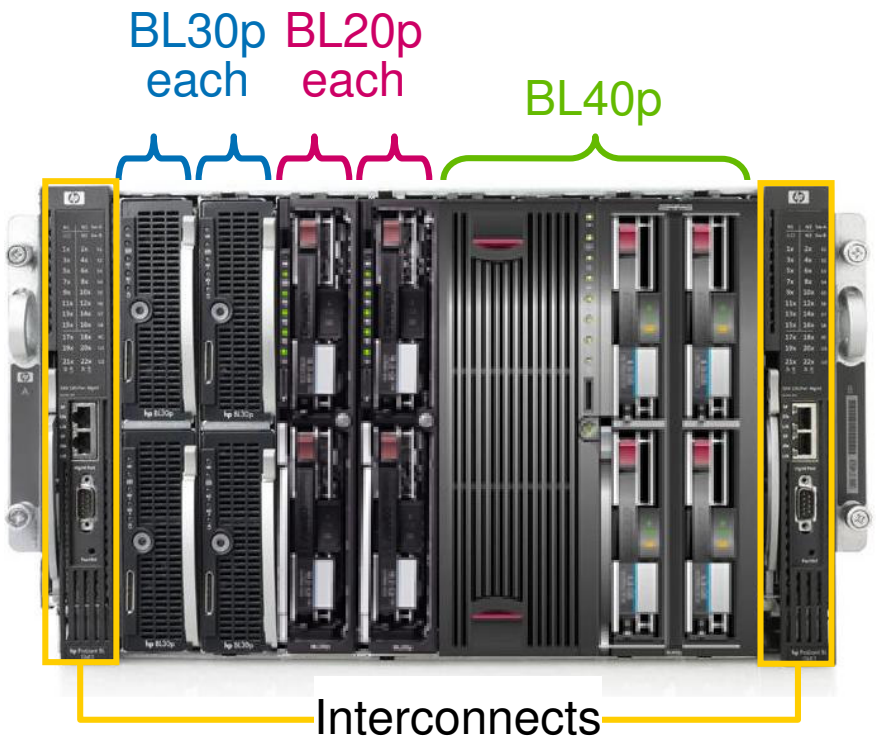
4P

BL40p (BL p-Class)
- High-performance 4P blade designed for mission-critical applications
- Back-end server blade

HP ProLiant BL p-Class technology overview

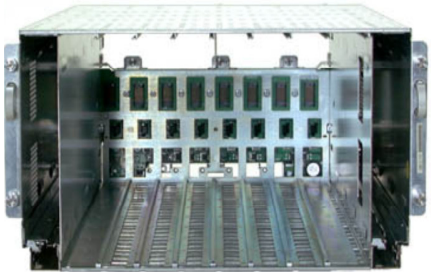
ProLiant BL p-Class technology

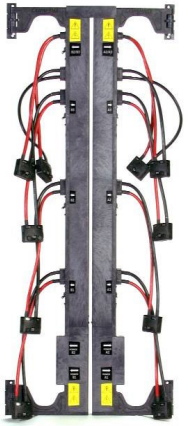
- Dual- and quad-processor server blade
- BL p-Class infrastructure
  - Server blade enclosures
  - Centralized power enclosures
- integrated Lights-Out (iLO) Advanced management
- Modularized network options



ProLiant BL p-Class anatomy

- Server blade enclosure
- Power delivery
- Management tools
- Interconnects



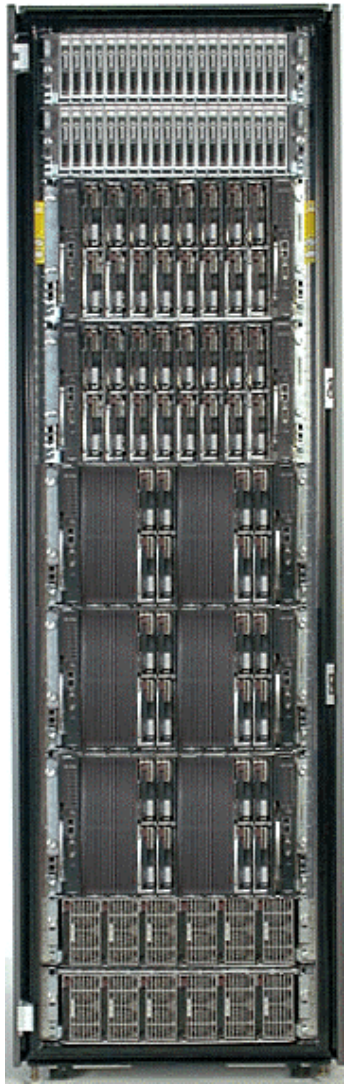


ProLiant BL p-Class model comparison

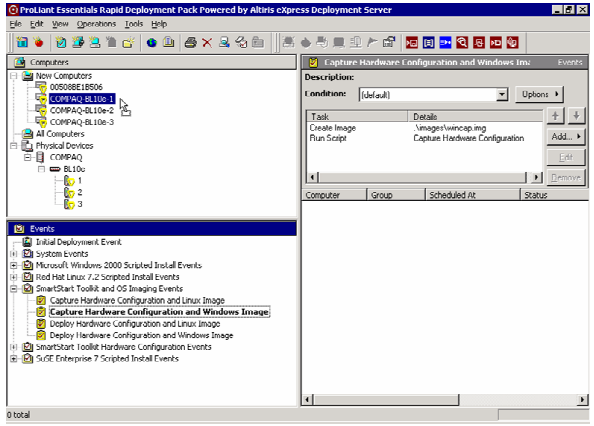
	BL20p G2	BL30p	BL40p
Processor	▪ Xeon 3.2GHz/1MB L3 cache ▪ Xeon 3.06GHz/512KB L2 cache or 1MB L3 cache ▪ Xeon 2.80GHz/512KB L2 cache ▪ 533MHz bus	▪ Xeon 3.2GHz/2MB L3 cache ▪ Xeon 3.2GHz/1MB L3 cache ▪ Xeon 3.06GHz/512KB L2 cache ▪ 533MHz bus	▪ Xeon MP 3.0GHz/4MB L3 cache ▪ Xeon 2.8GHz/2MB L3 cache ▪ Xeon 2.2GHz/2MB L3 cache ▪ Xeon 2.0GHz/1MB L3 cache ▪ 400MHz bus
Multiprocessing	Up to 2 processors	Up to 2 processors	Up to 4 processors
RAM Std/Max	512MB ECC PC2100 DDR std 8GB max	1GB PC2100 ECC DDR std 4GB max	1GB PC2100 ECC DDR std 12GB max
Drive controller	Integrated Smart Array 5i Plus with optional BBWC	Integrated with chipset	Integrated Smart Array 5i Plus with optional BBWC
NIC	(3) 10/100/1000T NICs (1) Dedicated iLO port	(2) 10/100/1000T NICs (1) Dedicated iLO port	(5) 10/100/1000T NICs (1) Dedicated iLO port
Hard drive bays	(2) 3.5” SCSI hot plug drive bays	(2) 2.5” ATA drive bays	(4) 3.5” SCSI hot plug drive bays
Slots	None	None	(2) PCI-X slots for SAN
Chassis	1U x 6U form factor – plugs vertically into 6U server enclosure	1U x 3U form factor – plugs vertically into 6U server enclosure using blade sleeve	4 bays wide x 6U high form factor – plugs vertically into 6U server enclosure
Server management	Integrated Lights-Out Advanced	Integrated Lights-Out Advanced	Integrated Lights-Out Advanced
Power	Rack-centralized hot-plug	Rack-centralized hot-plug	Rack-centralized hot-plug
Connects to SAN?	Yes	Yes	Yes

Basic server deployment and management

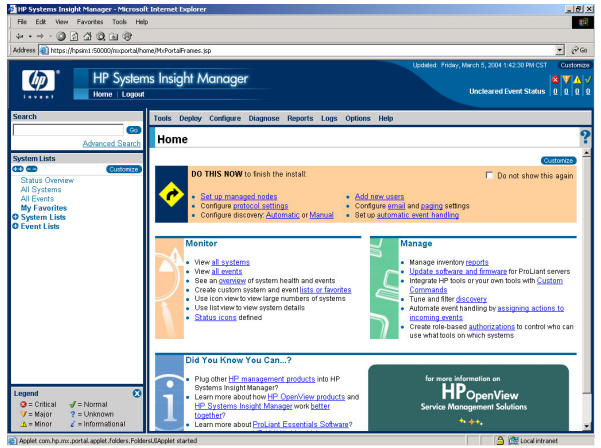
Basic server deployment and management



- Initial deployment
- Redeployment
- Disaster recovery

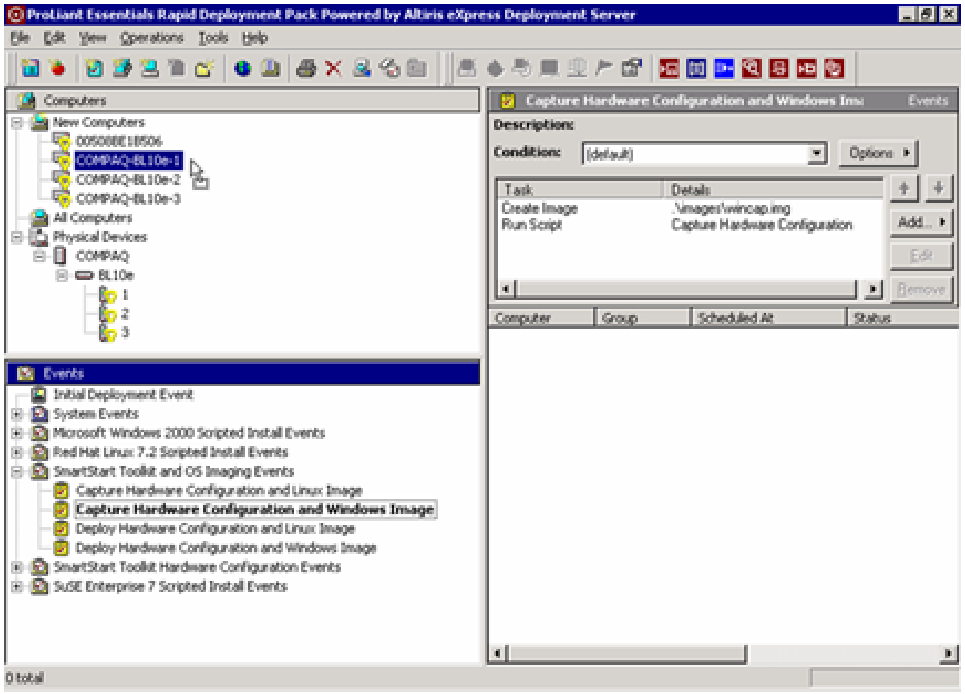


- Change management
- Version control

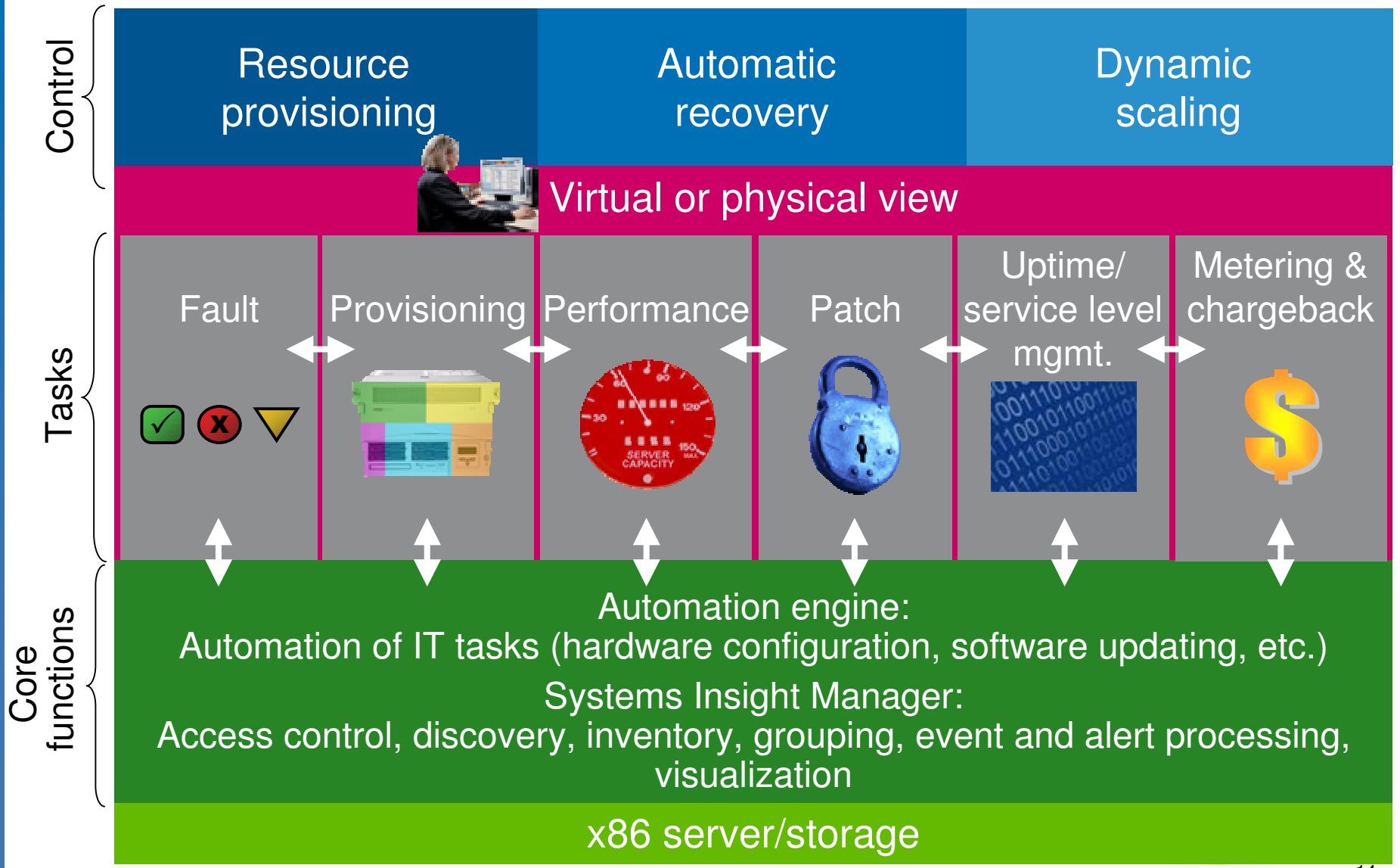


Server deployment tools

- SmartStart Scripting Toolkit
- ProLiant Essentials RDP



Systems Insight Manager – Now and in the future



Classroom setup and configuration overview

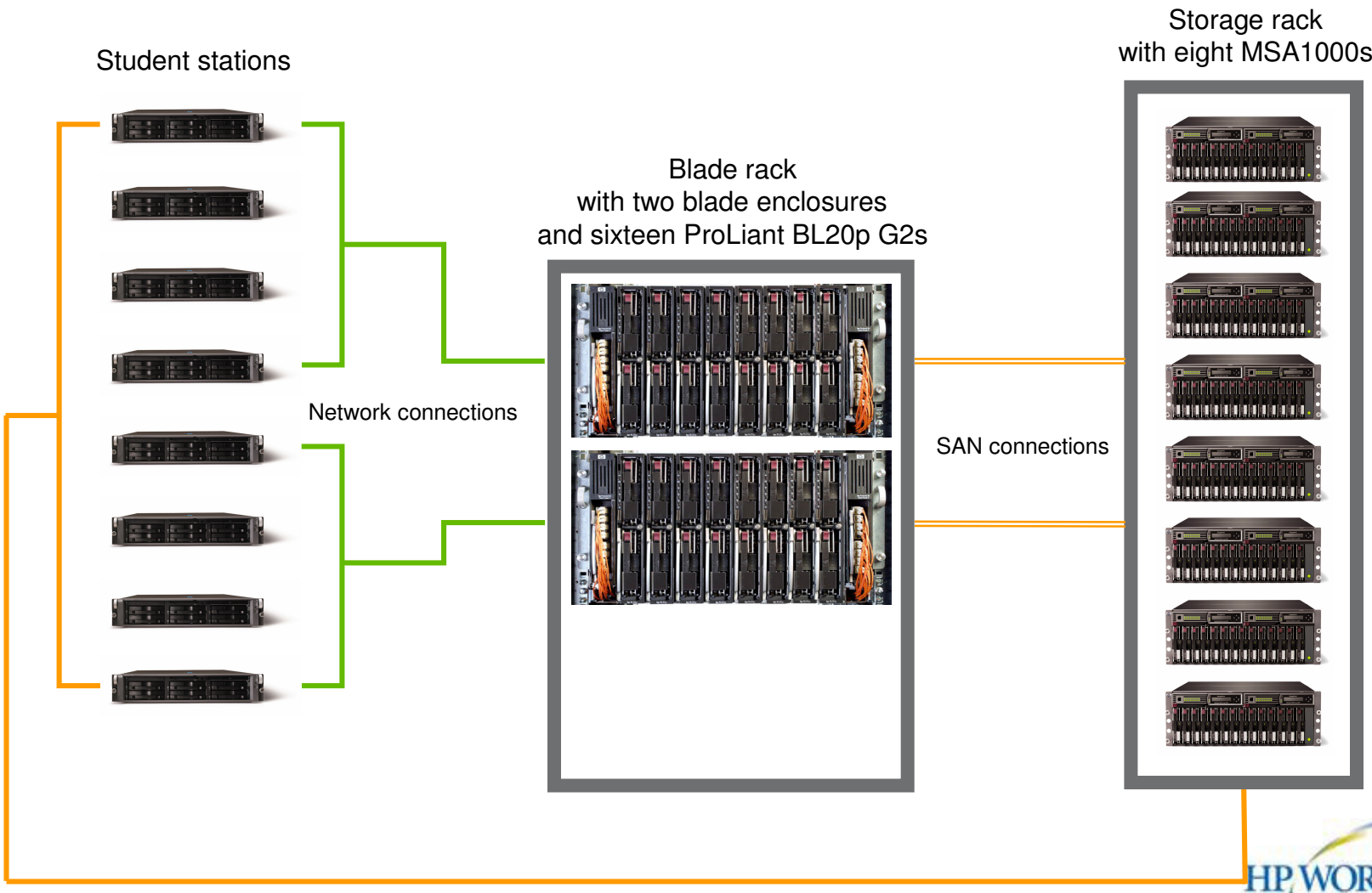
Classroom setup and configuration (1 of 2)

- Blades
  - Two p-Class blade enclosures
  - Eight ProLiant BL20p G2 blades in each enclosure
  - Each blade server with:
    - Two disk drives
    - Fibre Channel mezzanine
  - One BL p-Class power enclosure with four power supplies
- Storage rack
  - Eight MSA1000s
  - Each MSA1000 with a SAN switch and two disk drives

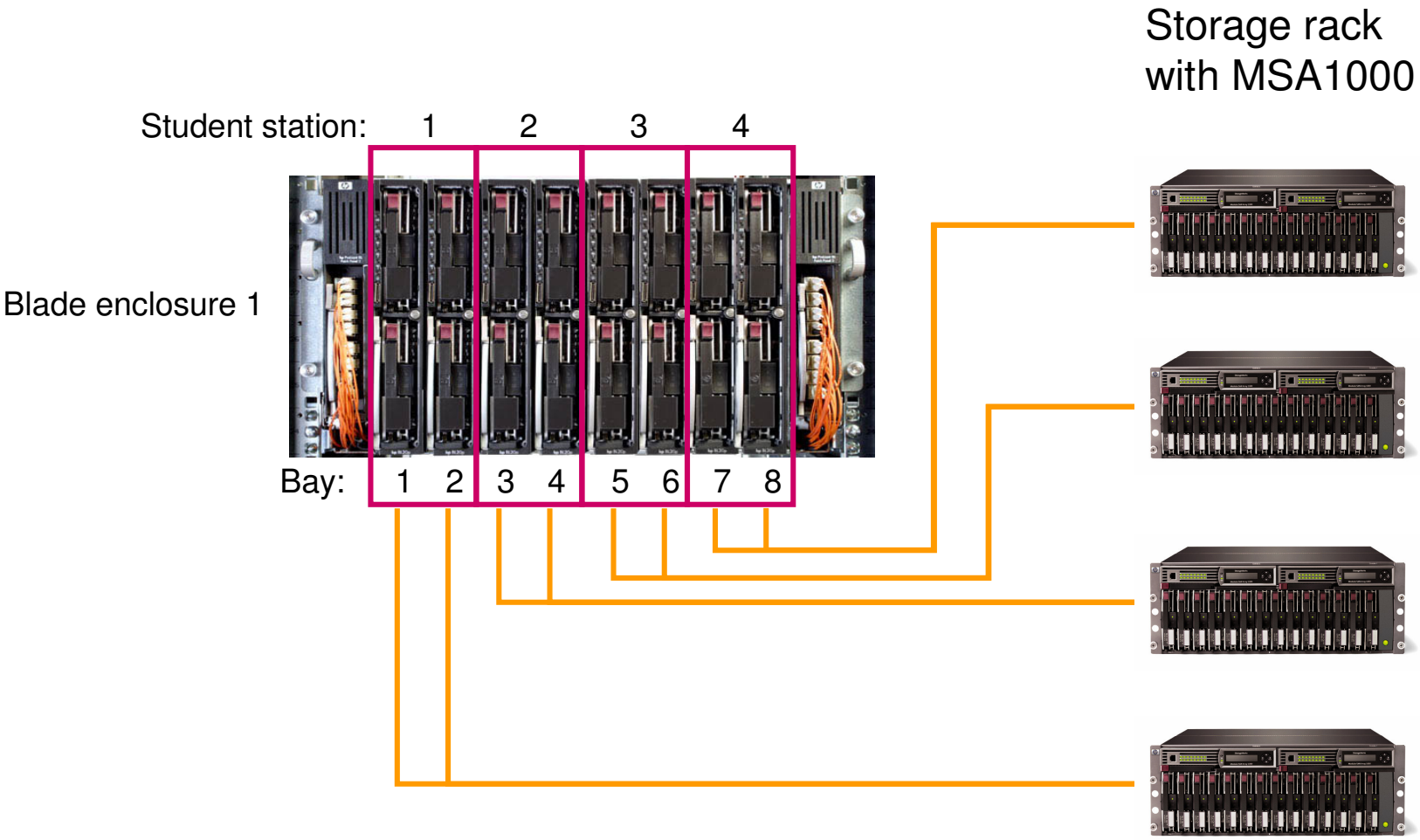
Classroom setup and configuration (2 of 2)

- Interconnect
  - Two C-GbE2 switch interconnects in each blade enclosure
  - GbE2 Storage Connectivity Kit
- Student stations
  - Eight ProLiant servers
  - Each with:
    - 512MB of memory
    - Emulex HBA
    - Array controller
    - Two disk drives

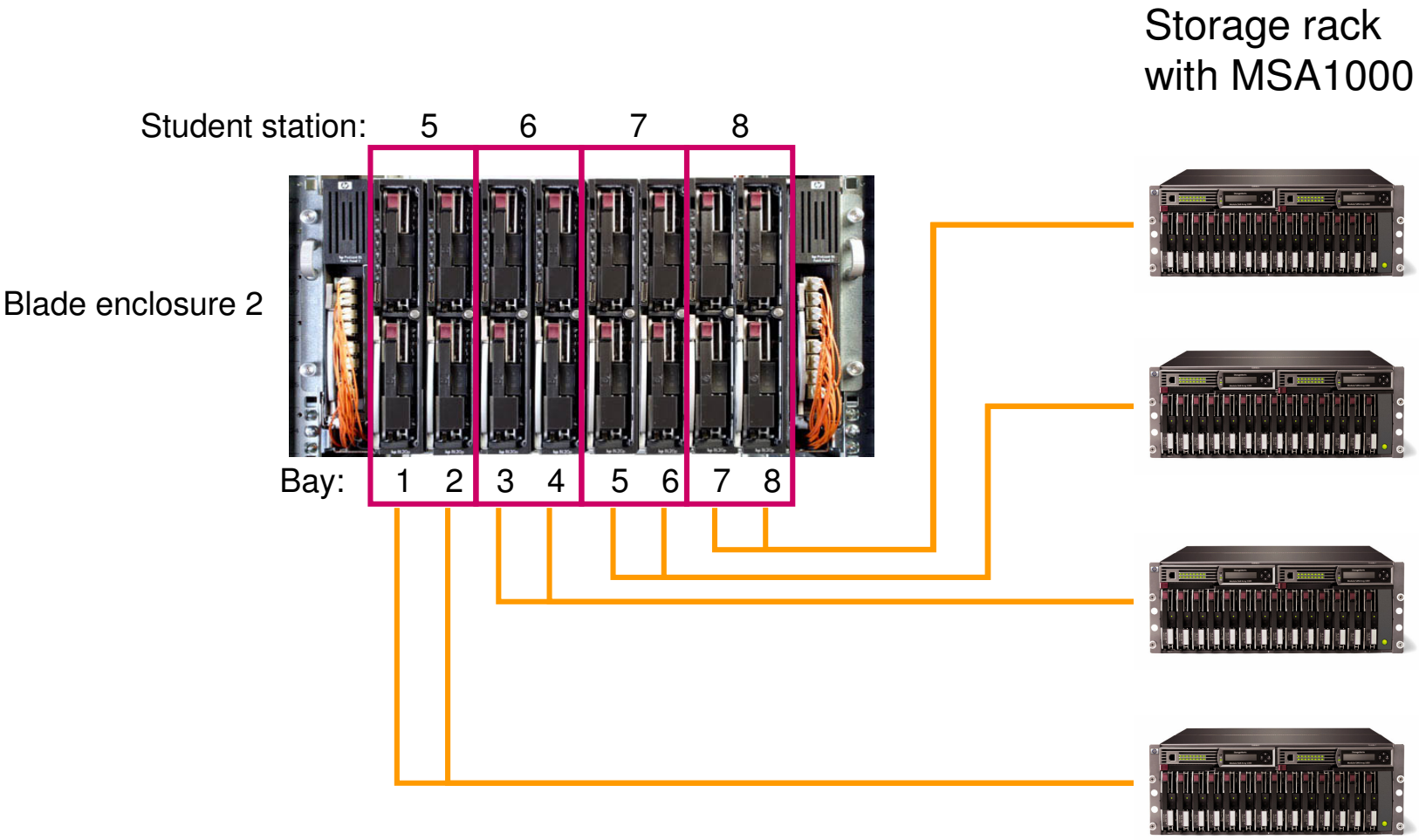
Hardware layout diagram



Hardware layout diagram
Blade server assignments – enclosure 1



Hardware layout diagram
Blade server assignments – enclosure 2



Classroom setup and configuration

- Initial configuration of student stations
  - Windows Server 2003 with Active Directory, DNS, and DHCP
  - RDP 1.60 Deployment Server
  - HP SIM 4.1
- User names and passwords
- Software repository location
- Student stations and assignments

Labs and demos: GbE2 interconnect switch configuration (demo, 30 minutes)

GbE2 switch summary

- 2nd generation integrated Ethernet switch offering
- Gigabit Ethernet performance standard on all ports
  - 24 GbE ports per switch (6 external for customer use)
- Unparalleled investment protection to support network requirements today and tomorrow
  - Future 10GbE uplink and layer 3-7 switching options
  - BL20p G2 FC pass-through option
  - Same form factor as GbE, fully supported on p-Class system
- Advanced network functionality
  - Multiple STP, RADIUS, L3-7, 9K jumbo frames, etc.
- End-to-end redundant architecture maximizing network availability
- Unmatched management and user friendly serviceability features

Introduction of BL switches into an existing network

- Firmware
  - Always upgrade BOTH BL switches in each chassis to latest version
- Spanning Tree
  - In most cases, it's best to set the Bridge Priority on both BL switches very high (e.g. 65000) to prevent them from becoming the Root Bridge. Lowest Bridge ID becomes the root.
  - In many cases it may be safer to initially disable the cross connect ports and only plug in one uplink for each switch.
- VLANs
  - Make sure native VLANs match on Core switches for all uplink ports.
  - Consider STP's behavior when assigning VLAN membership to uplinks.
- Management
  - In most cases, it's best to manually set the IP address on the management interface instead of using BOOTP/DHCP.
  - Be sure and assign a management interface to the management VLAN if it is separate from the data VLAN.

Labs and demos: Scripted installation of Microsoft Windows Server 2003 with SAN connectivity and boot from SAN (lab, 2 hours)

Labs and demos: HP SIM 4.1 discovery and basic management (lab, 30 minutes)

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