IBM xSeries x346

LAB Guide

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Overview

n **Microprocessor**
- n Intel Xeon 2.8 and higher (Nocona)
- n 800 MHz front-side bus
- n Support for up to 2 CPU's with Hyper-Threading Technology (One physical processor looks like 2 logical processors to the OS and applications
- n 1MB L2 on-die cache

n **Memory**
- n 8 DIMM sockets
- n Min: 512 MB
- n Max: 16GB
- n Type: 2-way interleaved PC2-3200, ECC DDR II SDRAM, registered DIMMs only
- n Sizes: 256 MB, 512 MB, 1 GB, or 2 GB (2 GB not available at GA)

n **PCI Slots**
- n 2 PCI-X non-hot-plug 100 MHz/64-bit (low profile)
- n 2 PCI-X non-hot-plug 133 MHz/64-bit (or 2 PCI Express option: x4 non-hot-plug, accepts x8 type card, replaces PCI-X riser card)

n **HostRAID**
- n Adaptec AIC-7902 dual channel Ultra320 SCSI controller with integrated RAID 0 and 1 (1 internal and 1 external Ultra 320 SCSI ports)
- n Optional ServeRAID 7K provides additional RAID operation on a reserved connector (6i is not supported)

n **Expansion bays**
- n 6 hot-swap, 3.5" drive bays
- n 5.25" bay (DVD-ROM installed)
- n 3.5" removable-media bay (1.44 MB diskette drive installed)
- n Future 2.5" Serial Attached SCSI

n **Hot-swap fans**
- n Std: 6
- n Max: 12 – provides redundant cooling

n **Hot-swap power supplies**
- n Min: 1
- n Max: 2 – provides redundant power
- n 625 watts
- n 2nd power supply option includes 6 fans

Overview - cont

- Service Processor
  - Baseboard management controller (BMC)
  - Monitors temperature, voltage, fan failure, power supply failure
  - System error log and local BMC code flash
  - Intelligent Platform Management Interface Specification (IPMI) V 1.5
  - Add RSA-II slim card to a reserved connector to support full system management features
  - Light Path to report fans, power supplies, CPU, VRM, and system errors

- RSA II slim card Ethernet connector
  - Active only when RSA II slim card is installed

- ASM connectors
  - Use either of these connectors to connect server to an Integrated xSeries Adapter (IXA) which is in the same box

- VRM
  - Integrated one CPU VRM

- Optional DDS5 Internal Tape

- IA-32e mode
  - A 64-bit extension Technology is an enhancement to Intel IA-32 architecture
  - Compatible with existing IA-32 software
  - Enables a 64-bit OS to rum most existing legacy 32-bit software unmodified
  - 64-bit mode enables a 64-bit OS to rum applications written to access 64-bit address space

- Serial port
  - Shared between system and BMC

Overview - cont

n Memory mirroring

- n Keeps a real-time copy of data in memory
- n Enable via Configuration/Setup utility
- n Stores data in two pairs of DIMMs simultaneously
- n Stores data in 2 pairs of DIMMs simultaneously
- n Must install 2 pairs of DIMMs at a time and 4 DIMMs in each group must be identical
- n Hot spare and mirroring are mutually exclusive of one another

Group	DIMM Pairs
1	1,2,3,4
2	5,6,7,8

n Online spare

- n Provides spare memory for a failing or failed DIMM
- n Enable via Configuration/Setup Utility
- n BIOS assigns online-spare memory DIMM pair according to your DIMM configuration
- n Online-spare DIMM pair must be the same speed, type, and same size or larger than the active DIMM pair

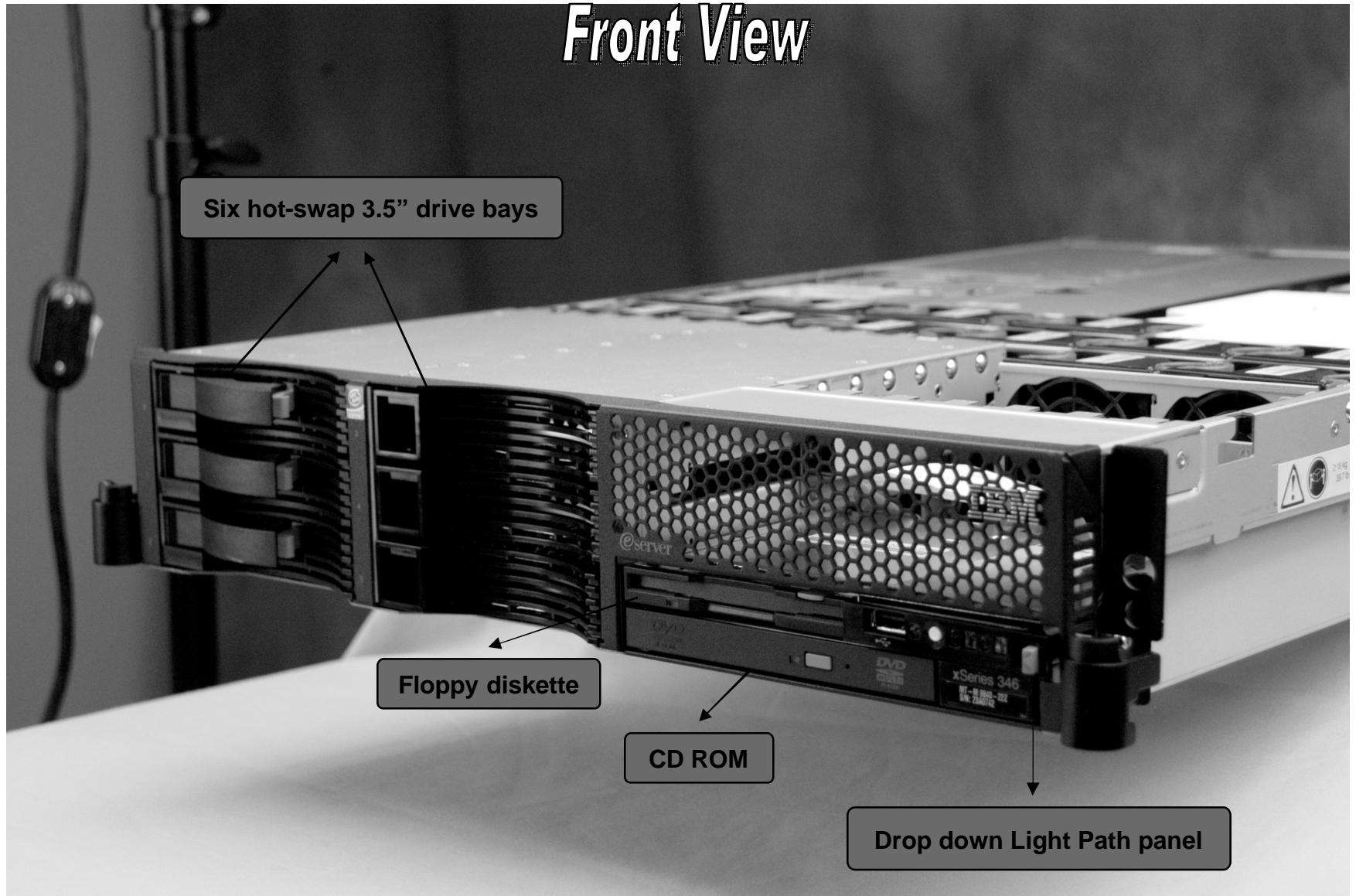| Active DIMM connectors	Online-spare DIMM connectors
1 and 2	3 and 4
1 and 2 3 and 4	5 and 6
1 and 2 3 and 4 5 and 6	7 and 8

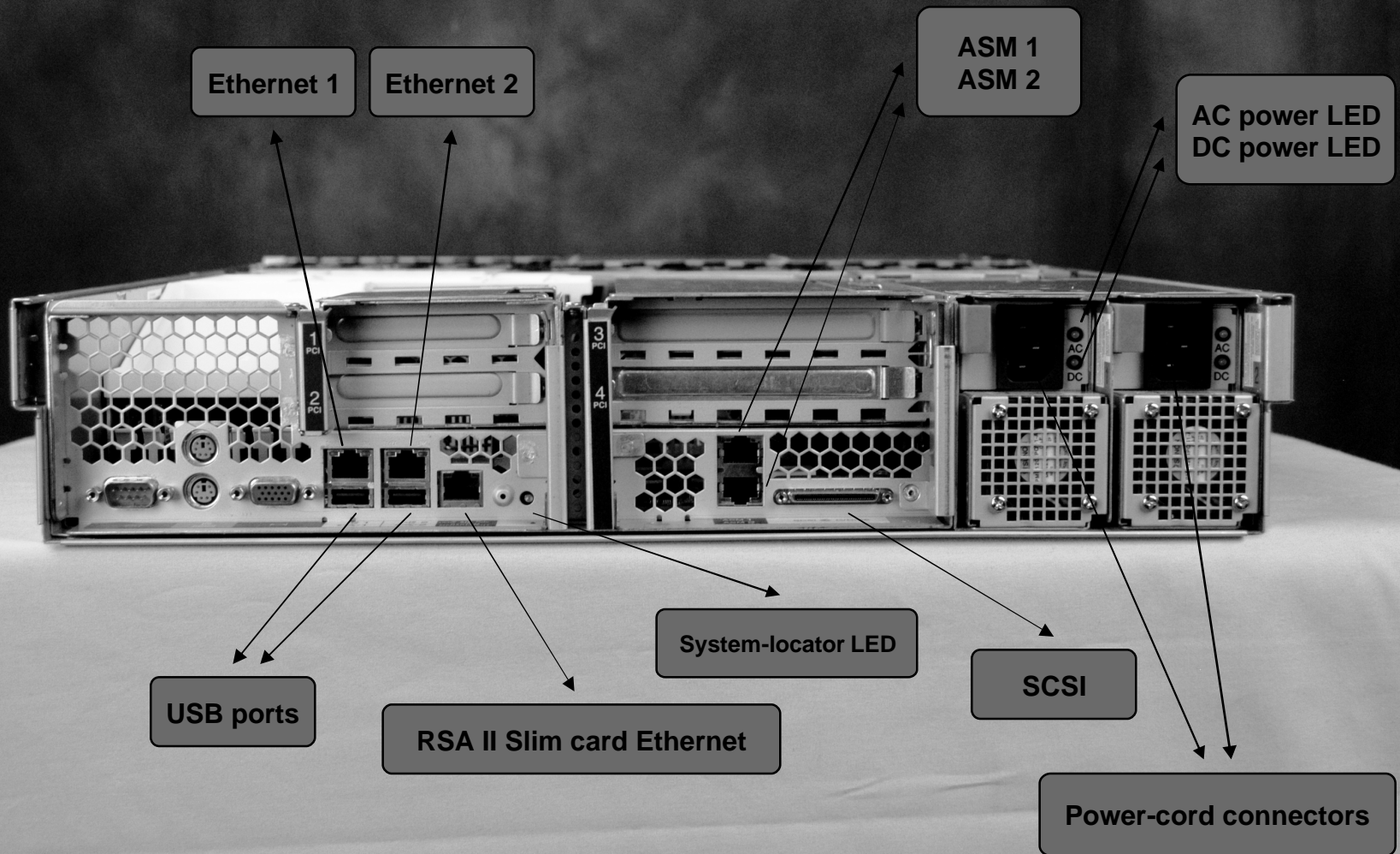# Front View

Six hot-swap 3.5" drive bays

Floppy diskette

CD ROM

Drop down Light Path panel

Light Path Panel

Drop down Light Path panel

Light Path panel eject button

Power-on LED

Power-control button

SCSI activity LED

System-locator LED

Information LED

System error LED

Rear View

Ethernet 1

Ethernet 2

ASM 1
ASM 2

AC power LED
DC power LED

System-locator LED

SCSI

USB ports

RSA II Slim card Ethernet

Power-cord connectors

PCI riser-card cage

PCI low-profile card cage

Two hot-plug power supplies

Twelve hot-swap fans

Air baffle
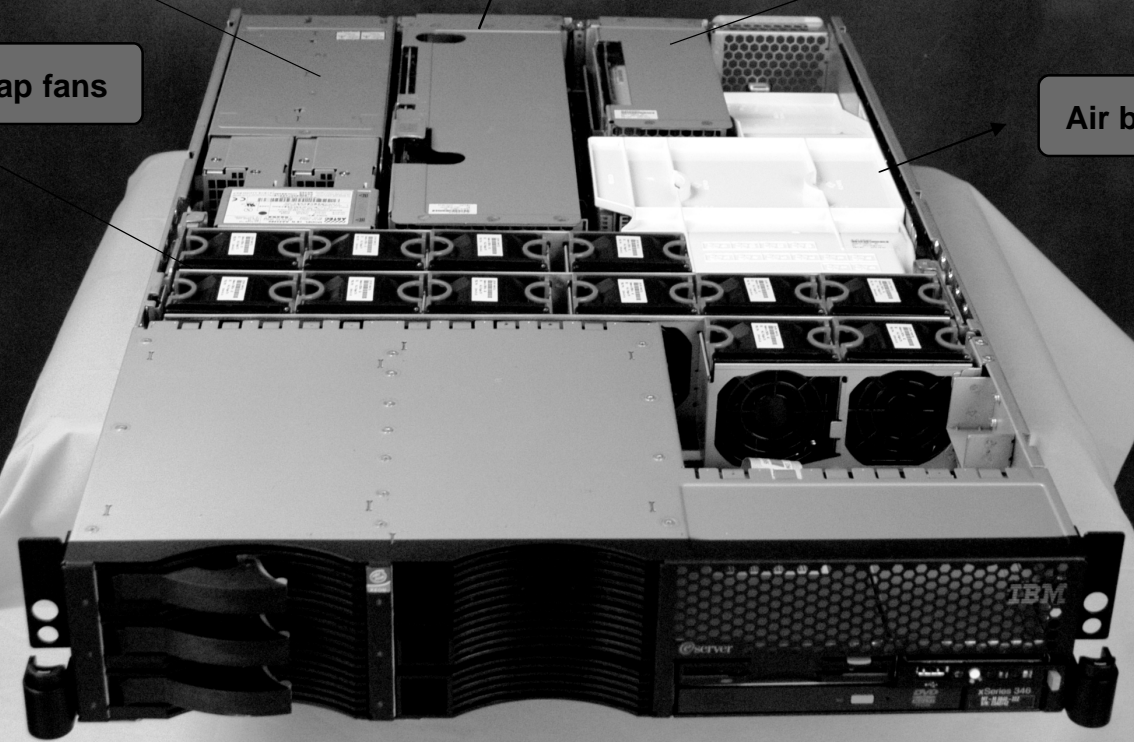
Top View
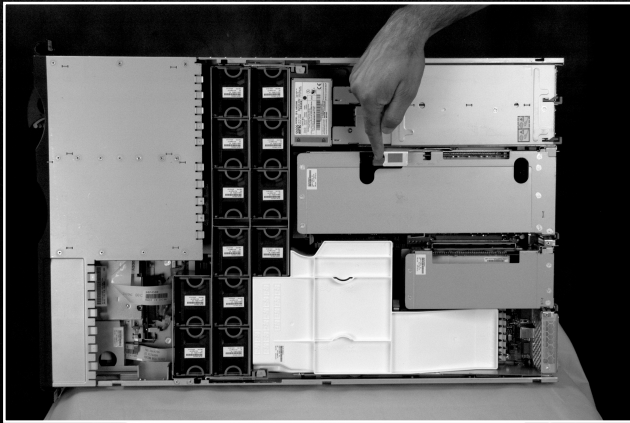
Lift the retention latch all the way up
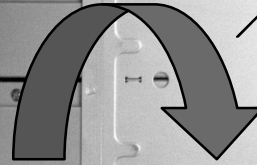
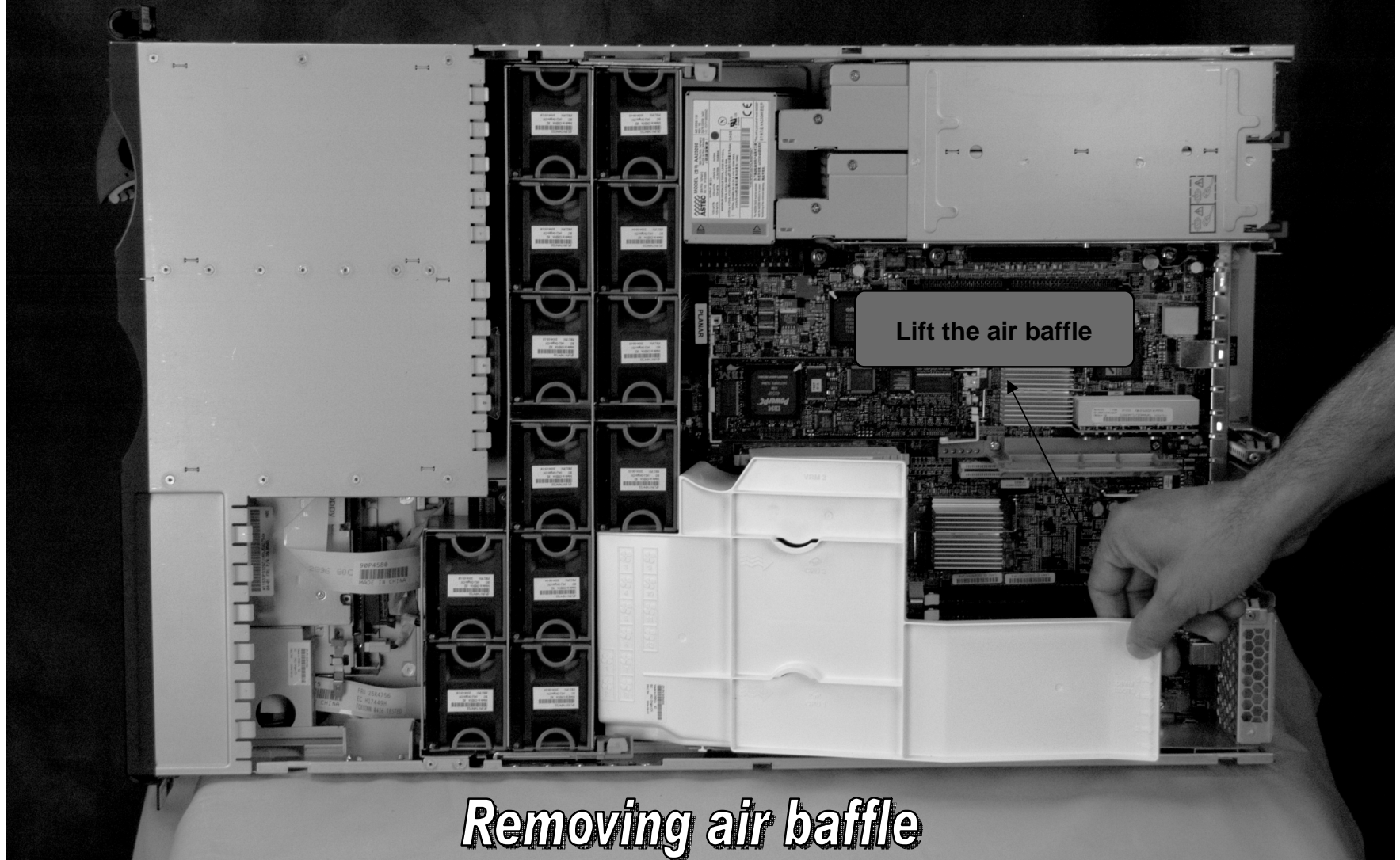**and then lift the PCI riser-card cage up wards**

Removing PCI riser-card cage
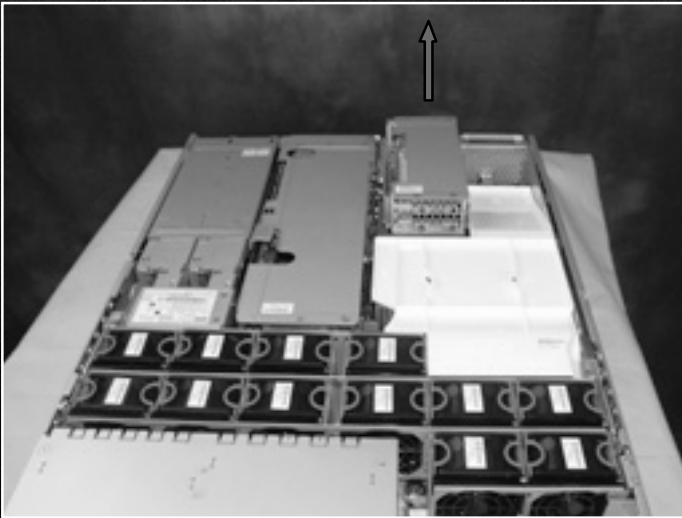
Push blue latch towards power supplies with your thumbs and hold it there while pulling the low-profile card cage upwards with your fingers
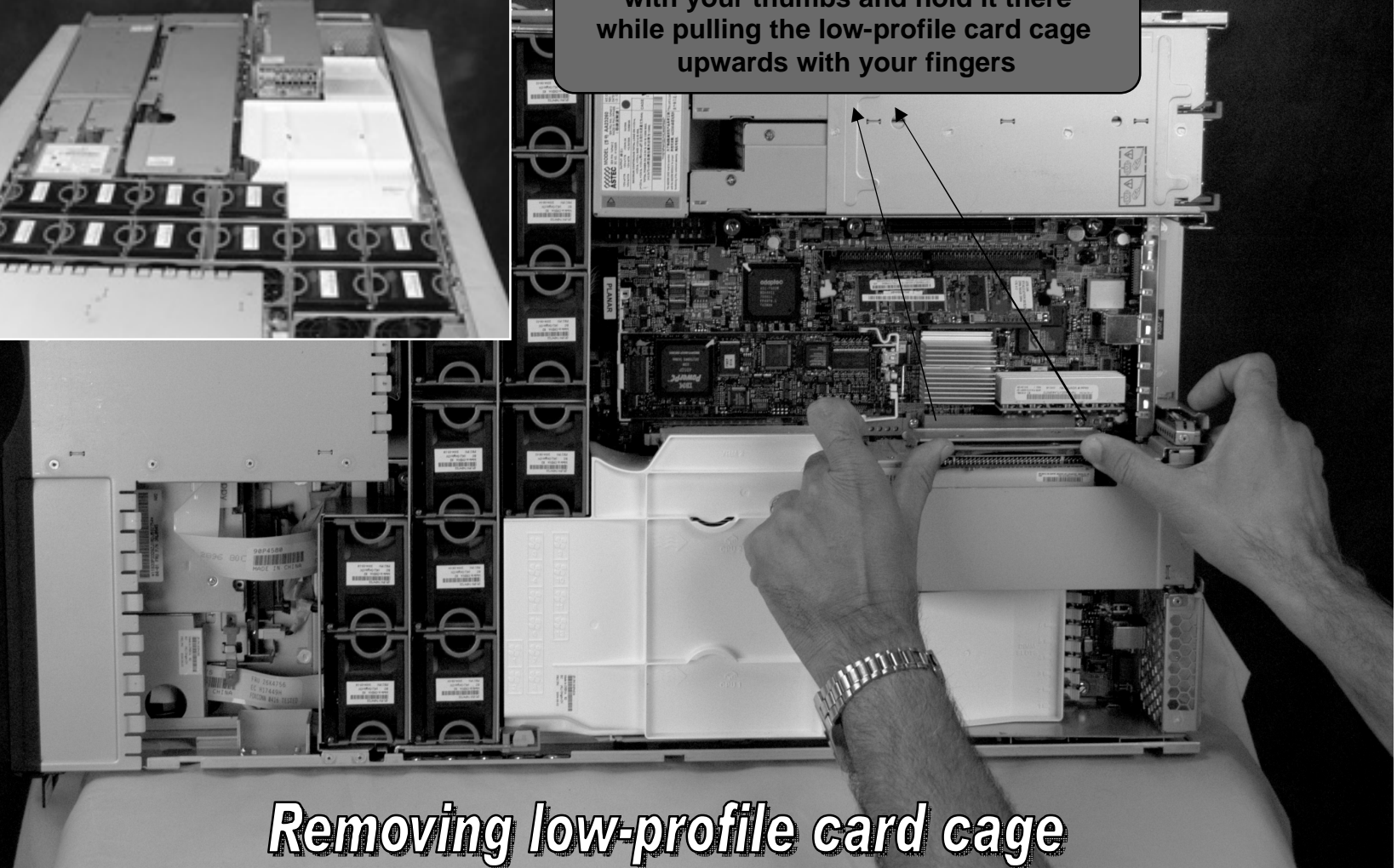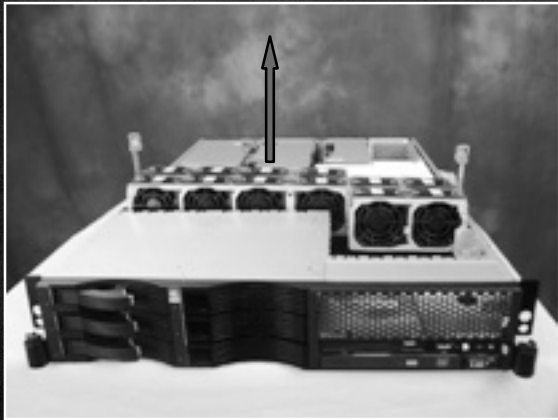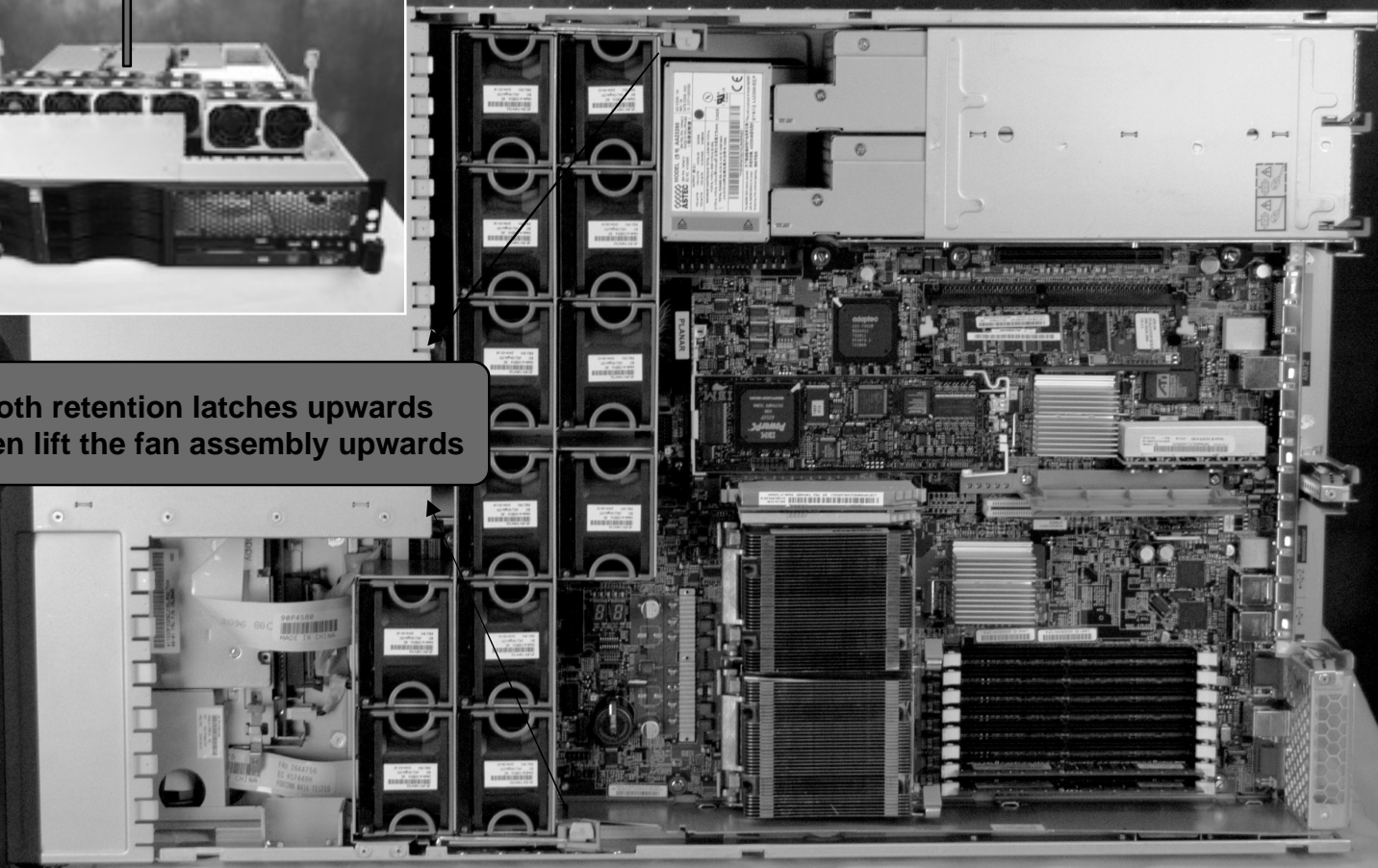
Removing low-profile card cage
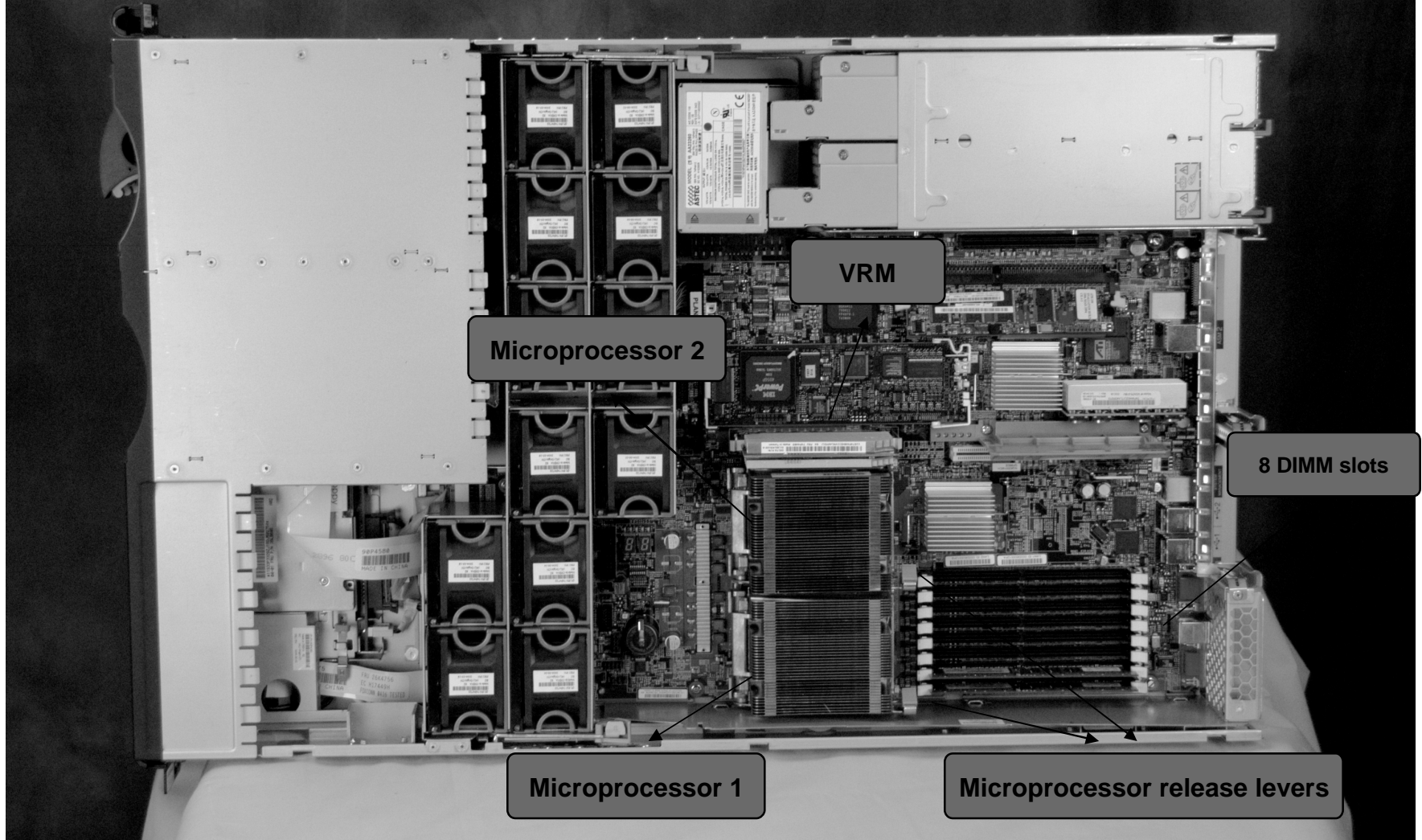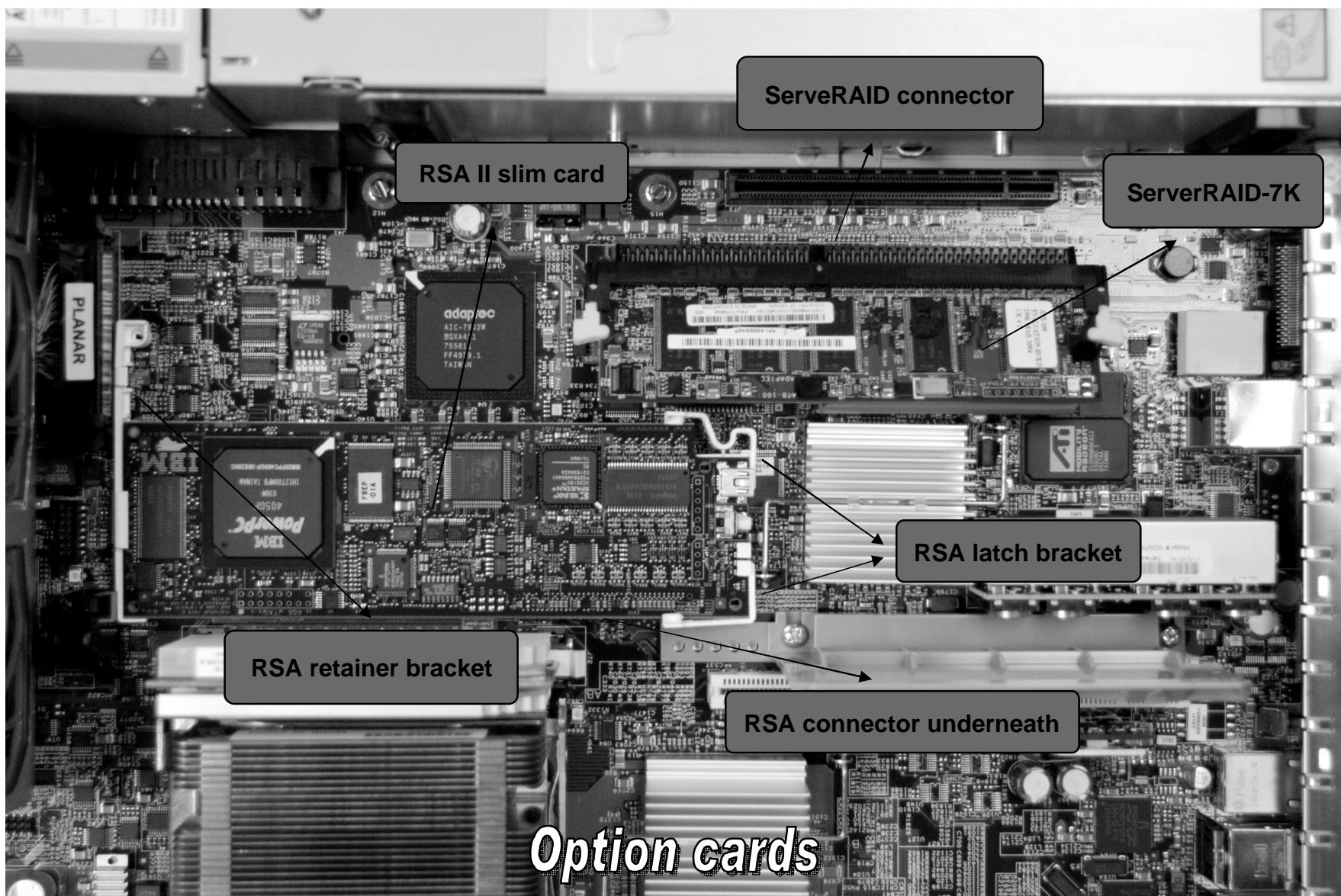
Lift the air baffle

Removing air baffle

Lift both retention latches upwards and then lift the fan assembly upwards

Removing fan assembly

Major components

VRM

Microprocessor 2

8 DIMM slots

Microprocessor 1

Microprocessor release levers

Option cards

Removing Power Supply

**Press inwards
and push the lever downwards
while
pulling the power supply out**

AC

DC

Overview - cont

- Miscellaneous
    - 2 Broadcom 10/100/1000 Ethernet ports (Broadcom 5721)
    - 3 USB ports v 1.1 0r 2.0 / 1 Serial port
    - ATI Radeon IGP 7000M video controller / 16 MB
- Operating System support
    - Windows 2000 (Server and advanced server)
    - Windows 2003 (Standard, enterprise and web editions)
    - Linux Red Hat Enterprise 3 AS and ES
    - Linux SUSE Enterprise server 8
    - Novell NetWare 5.1 and 6.5
- Footprint – 2U, Rack-optimized
- Ship Support – Aug 27, 2004
- GA scheduled – Sep 27, 2004