ThinkServer RD430 Photography - 8 x 3.5" Disk Bays

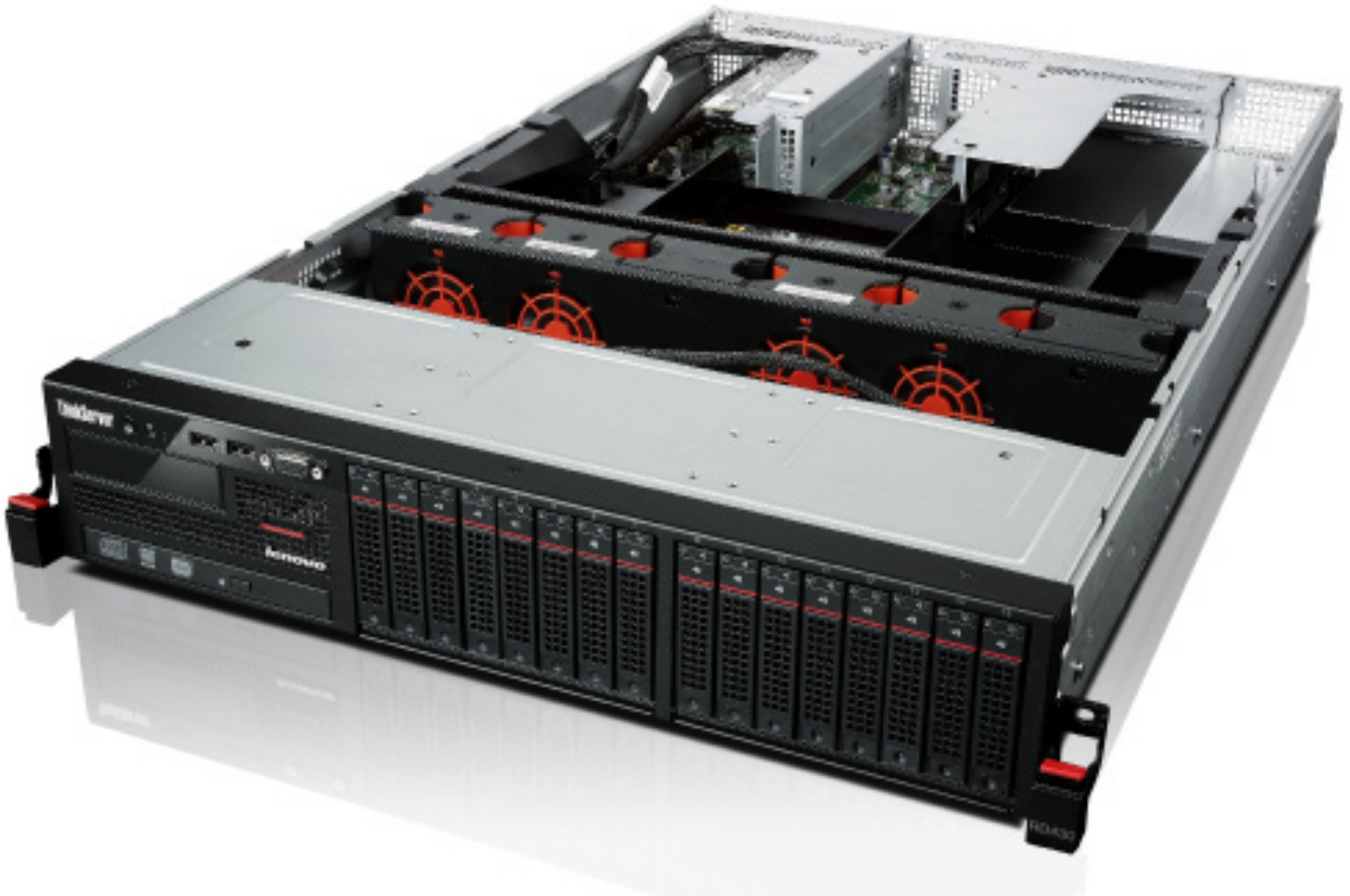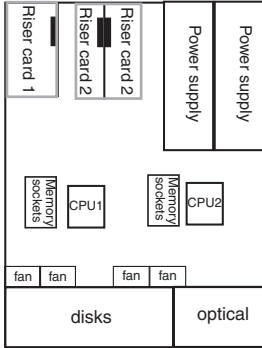**ThinkServer RD430 Photography - 12 x 3.5" Disk Bays**

* Some models in pictures above contain optional add-in ethernet adapter or RAID adapter; some RD430 with 2.5" disk bay models may come with 8 disk bays

ThinkServer RD430 with eight 3.5" Disk Bays (3064) - TopSeller

Type-model	Processor(s)	Memory (MHz/type)	Memory DIMMs	Pre-conf RAID	Disk controller	Disk(s)	Disk bays	Disk type	SATA optical	Intelligent Diagnostics	TPM	System mgmt	Cable mgmt	Preload OS	PSU qty
3064-G2G	1xE5-2407	1333MHz RDIMM	1x4GB	No	300	No	8xHS	SATA/SAS	DVD±RW	Basic	TPM	IPMI	No	No	1
3064-G4G	1xE5-2420	1333MHz RDIMM	1x8GB	No	300	No	8xHS	SATA/SAS	DVD±RW	Premium	TPM	IPMI	No	No	1
3064-G5G	1xE5-2450	1333MHz RDIMM	1x8GB	No	500+Upgrade	No	8xHS	SATA/SAS	DVD±RW	Premium	TPM	iKVM	No	No	2

Limited warranty	**3-year** parts and labor
Processor	Up to two Intel® Xeon® E5-2400 series processors, **Intel Xeon E5-2407 processor (4C/4T, 2.2GHz, 10MB, 6.4 GT/s QPI x1)**, 3-channel DDR3 memory controller (up to 1066MHz) **Intel Xeon E5-2420 processor (6C/12T, 1.9GHz, 15MB, 7.2 GT/s QPI x1)**, Turbo Boost 2.0 (up to 2.4GHz), 3-channel DDR3 memory controller (up to 1333MHz) **Intel Xeon E5-2450 processor (8C/16T, 2.1GHz, 20MB, 8.0 GT/s QPI x1)**, Turbo Boost 2.0 (up to 2.9GHz), 3-channel DDR3 memory controller (up to 1600MHz)
Implementation	Two LGA1356 sockets
Memory	UDIMM, RDIMM or LV RDIMM, DDR3, ECC, 3-channel per processor, 240-pin, 12 sockets (6 sockets per processor); 192GB max (RDIMM/LV RDIMM, 12x16GB) or 48GB max (UDIMM, 12x4GB)
Additional memory disclaimers	● *Actual memory operating speed depends on processor memory controller speed, installed memory speed, and quantity of memory DIMMs* ● *Over six DIMMs requires dual processors* ● *Mixing of UDIMM, RDIMM, or LV RDIMM is not supported*
Graphics	Onboard Aspeed AST2300 graphics/management processor, one VGA DB-15 on front, one VGA DB-15 on rear; Maximum resolution: 1920x1200@60Hz

Disk bays
Disk controller
	Eight 3.5" hot-swap SATA/SAS disk bays (see right)
	RAID 300: Onboard ThinkServer RAID 300 SATA/SAS controller,
	    SATA 3.0Gb/s, SAS 3.0Gb/s, RAID 0, 1, 10 support
	Upgrade for 300: Additional upgrade key for RAID 300,
	    add RAID 5 support
	RAID 500: ThinkServer RAID 500 adapter (LSI□ SAS 9240-8i),
	    PCI Express® bus, SATA 6.0Gb/s, SAS 6.0Gb/s,
	    RAID 0, 1, 10 support
	Upgrade for 500: Additional upgrade key for RAID 500 adapter,
	    add RAID 5, 50 support
	RAID 700: ThinkServer RAID 700 adapter (LSI SAS 9260-8i),
	    PCI Express bus, SATA 6.0Gb/s, SAS 6.0Gb/s,
	    RAID 0, 1, 5, 6, 10, 50, 60 support
	Battery for 700: Intelligent Battery Backup Unit (iBBU08) for RAID 700

RAID Support	Up to RAID 0, 1, 5, 6, 10, 50, 60 via ThinkServer RAID 700 adapter
Disk(s)	*3.5" SATA:* SATA 6.0Gb/s, 7200 rpm *3.5" SAS:* SAS 6.0Gb/s, 15000 rpm
Tape drive Optical Diskette	None DVD±RW or DVD ROM, slim None (use USB port)
Chipset	**Intel C606 Chipset**
Ethernet	Two Gigabit Ethernet ports by Intel i350, one Gigabit Ethernet port by Intel 82574L, dedicate/share management
Riser card Front ports Rear ports	(See Right) Riser card 1 for slot 1-2, riser card 2 for slot 3-5 One analog VGA DB-15 connector, two USB 2.0 Four USB 2.0, one serial (9-pin), two ethernet (RJ-45), one RJ-45 (dedicate/share mgmt), one analog VGA DB-15 connector
Intelligent Diagnostics Module (IDM)	Supports IDM or IDM Premium on selected models; *Basic:* IDM LED lights indicate failing component category *Premium:* IDM Premium LED lights indicate individual failing part
Systems mgmt	Onboard Aspeed AST2300 graphics/management processor, IPMI 2.0-compliant baseboard management controller (BMC); *iKVM:* add-on ThinkServer Management Module Premium for iKVM functions
Security chip	No onboard TPM chip; *TPM:* additional add-on card for TPM function, TCG 1.2-compliant
Prerequisites Keyboard/mouse Power supply	SATA/SAS disk, OS None (use USB port) One or two 800 watts standard, two maximum, rear access, hot-swap, 80 PLUS® Gold qualified, redundant with two power supplies
Rack kit Cable management Cooling	Includes rack kit Optional cable management arm on selected models Four fans, hot-swap

2U Rack top

Front

Disk Bay 2-9

Rear

Slot 4, 5 are available on dual processors models only

Mechanical

● 2U rack
● 19"W x 28.9"D x 3.45"H (with rack handles)
● 482.4mm W x 734mm D x 87.6mm H (with rack handles)
● 26.5 kg (58.42 lb) when fully configured

Disk Bays

Bay 1	5.25",	0.5" high,	external,	for optical
Bay 2-9	3.5",	1" high,	external,	for disk

Expansion Slots

Slot 1: half-length, full-height, PCI Express 3.0 x16
Slot 2: half-length, full-height, PCI Express 2.0 x8 (x4 elec)
Slot 3: Low Profile,   PCI Express 3.0 x8 (x4 elec)
Slot 4-5 are available on dual processors models:
Slot 4: half-length, full-height, PCI Express 3.0 x16 (x8 elec)
Slot 5: half-length, full-height, PCI Express 3.0 x8

Security

● Security chip (selected models, see information on left)
● Administrator password
● User password
● Boot sequence control
● Boot without keyboard, mouse, diskette
● Serial port I/O control
● USB port disablement (all)

Software Management Tools

● ThinkServer EasyStartup
● ThinkServer EasyManage

Energy Management Technology

● Lenovo® SmartGrid Manager

ENERGY STAR® Server 1.1-compliant
RoHS-compliant

ThinkServer RD430 with eight 3.5" Disk Bays (3064) - TopSeller (Sep 2012)

Type-model	Processor(s)	Memory (MHz/type)	Memory DIMMs	Pre-conf RAID	Disk controller	Disk(s)	Disk bays	Disk type	SATA optical	Intelligent Diagnostics	TPM	System mgmt	Cable mgmt	Preload OS	PSU qty
3064-A1G	1xE5-2450	1600MHz RDIMM	1x8GB	No	500+Upgrade	None	8xHS	SATA/SAS	DVD±RW	Premium	TPM	iKVM	No	No	2

Limited warranty	**3-year** parts and labor
Processor	Up to two Intel® Xeon® E5-2400 series processors, **Intel Xeon E5-2450 processor (8C/16T, 2.1GHz, 20MB, 8.0 GT/s QPI x1)**, Turbo Boost 2.0 (up to 2.9GHz), 3-channel DDR3 memory controller (up to 1600MHz)
Implementation	Two LGA1356 sockets
Memory	UDIMM, RDIMM or LV RDIMM, DDR3, ECC, 3-channel per processor, 240-pin, 12 sockets (6 sockets per processor); 192GB max (RDIMM/LV RDIMM, 12x16GB) or 48GB max (UDIMM, 12x4GB)
Additional memory disclaimers	● *Actual memory operating speed depends on processor memory controller speed, installed memory speed, and quantity of memory DIMMs* ● *Over six DIMMs requires dual processors* ● *Mixing of UDIMM, RDIMM, or LV RDIMM is not supported*
Graphics	Onboard Aspeed AST2300 graphics/management processor, one VGA DB-15 on front, one VGA DB-15 on rear; Maximum resolution: 1920x1200@60Hz
Disk bays Disk controller	Eight 3.5" hot-swap SATA/SAS disk bays (see right) *RAID 300*: Onboard ThinkServer RAID 300 SATA/SAS controller, SATA 3.0Gb/s, SAS 3.0Gb/s, RAID 0, 1, 10 support *Upgrade for 300*: Additional upgrade key for RAID 300, add RAID 5 support *RAID 500*: ThinkServer RAID 500 adapter (LSI□ SAS 9240-8i), PCI Express® bus, SATA 6.0Gb/s, SAS 6.0Gb/s, RAID 0, 1, 10 support *Upgrade for 500*: Additional upgrade key for RAID 500 adapter, add RAID 5, 50 support *RAID 700*: ThinkServer RAID 700 adapter (LSI SAS 9260-8i), PCI Express bus, SATA 6.0Gb/s, SAS 6.0Gb/s, RAID 0, 1, 5, 6, 10, 50, 60 support *Battery for 700*: Intelligent Battery Backup Unit (iBBU08) for RAID 700
RAID Support	Up to RAID 0, 1, 5, 6, 10, 50, 60 via ThinkServer RAID 700 adapter
Disk(s)	*3.5" SATA*: SATA 6.0Gb/s, 7200 rpm *3.5" SAS*: SAS 6.0Gb/s, 15000 rpm
Tape drive Optical Diskette	None DVD±RW or DVD ROM, slim None (use USB port)
Chipset	**Intel C606 Chipset**
Ethernet Riser card Front ports Rear ports	Two Gigabit Ethernet ports by Intel i350, one Gigabit Ethernet port by Intel 82574L, dedicate/share management (See Right) Riser card 1 for slot 1-2, riser card 2 for slot 3-5 One analog VGA DB-15 connector, two USB 2.0 Four USB 2.0, one serial (9-pin), two ethernet (RJ-45), one RJ-45 (dedicate/share mgmt), one analog VGA DB-15 connector
Intelligent Diagnostics Module (IDM)	Supports IDM or IDM Premium on selected models; *Basic*: IDM LED lights indicate failing component category *Premium*: IDM Premium LED lights indicate individual failing part
Systems mgmt	Onboard Aspeed AST2300 graphics/management processor, IPMI 2.0-compliant baseboard management controller (BMC); *iKVM*: add-on ThinkServer Management Module Premium for iKVM functions
Security chip	No onboard TPM chip; *TPM*: additional add-on card for TPM function, TCG 1.2-compliant
Prerequisites Keyboard/mouse Power supply	SATA/SAS disk, OS None (use USB port) One or two 800 watts standard, two maximum, rear access, hot-swap, 80 PLUS® Gold qualified, redundant with two power supplies
Rack kit Cable management Cooling	Includes rack kit Optional cable management arm on selected models Four fans, hot-swap

2U Rack top

Front

Rear

Slot 4, 5 are available on dual processors models only

Mechanical

- 2U rack
- 19"W x 28.9"D x 3.45"H (with rack handles)
- 482.4mm W x 734mm D x 87.6mm H (with rack handles)
- 26.5 kg (58.42 lb) when fully configured

Disk Bays

Bay 1   5.25", 0.5" high, external,   for optical
Bay 2-9 3.5",   1" high,   external,   for disk

Expansion Slots

Slot 1: half-length, full-height, PCI Express 3.0 x16
Slot 2: half-length, full-height, PCI Express 2.0 x8 (x4 elec)
Slot 3: Low Profile,   PCI Express 3.0 x8 (x4 elec)
Slot 4-5 are available on dual processors models:
Slot 4: half-length, full-height, PCI Express 3.0 x16 (x8 elec)
Slot 5: half-length, full-height, PCI Express 3.0 x8

Security

- Security chip (selected models, see information on left)
- Administrator password
- User password
- Boot sequence control
- Boot without keyboard, mouse, diskette
- Serial port I/O control
- USB port disablement (all)

Software Management Tools

- ThinkServer EasyStartup
- ThinkServer EasyManage

Energy Management Technology

- Lenovo® SmartGrid Manager

ENERGY STAR® Server 1.1-compliant
RoHS-compliant

© Lenovo

ThinkServer RD430 with eight 3.5" Disk Bays (3065)

Type-model	Processor(s)	Memory (MHz/type)	Memory DIMMs	Pre-conf RAID	Disk controller	Disk(s)	Disk bays	Disk type	SATA optical	Intelligent Diagnostics	TPM	System mgmt	Cable mgmt	Preload OS	PSU qty
3065-B4G	1xE5-2450	1333MHz RDIMM	1x16GB	No	700+Battery	No	8xHS	SATA/SAS	DVD±RW	Premium	TPM	iKVM	No	No	2
3065-B5G	1xE5-2420	1333MHz RDIMM	1x8GB	No	700+Battery	No	8xHS	SATA/SAS	DVD±RW	Premium	TPM	iKVM	No	No	2

Limited warranty	**3-year** parts and labor	
Processor	Up to two Intel® Xeon® E5-2400 series processors, **Intel Xeon E5-2420 processor (6C/12T, 1.9GHz, 15MB, 7.2 GT/s QPI x1)**, Turbo Boost 2.0 (up to 2.4GHz), 3-channel DDR3 memory controller (up to 1333MHz) **Intel Xeon E5-2450 processor (8C/16T, 2.1GHz, 20MB, 8.0 GT/s QPI x1)**, Turbo Boost 2.0 (up to 2.9GHz), 3-channel DDR3 memory controller (up to 1600MHz)	**2U Rack top**
Implementation	Two LGA1356 sockets	
Memory	UDIMM, RDIMM or LV RDIMM, DDR3, ECC, 3-channel per processor, 240-pin, 12 sockets (6 sockets per processor); 192GB max (RDIMM/LV RDIMM, 12x16GB) or 48GB max (UDIMM, 12x4GB)	
Additional memory disclaimers	● *Actual memory operating speed depends on processor memory controller speed, installed memory speed, and quantity of memory DIMMs* ● *Over six DIMMs requires dual processors* ● *Mixing of UDIMM, RDIMM, or LV RDIMM is not supported*	
Graphics	Onboard Aspeed AST2300 graphics/management processor, one VGA DB-15 on front, one VGA DB-15 on rear; Maximum resolution: 1920x1200@60Hz	**Front**
Disk bays Disk controller	Eight 3.5" hot-swap SATA/SAS disk bays (see right) *RAID 300*: Onboard ThinkServer RAID 300 SATA/SAS controller, SATA 3.0Gb/s, SAS 3.0Gb/s, RAID 0, 1, 10 support *Upgrade for 300*: Additional upgrade key for RAID 300, add RAID 5 support *RAID 500*: ThinkServer RAID 500 adapter (LSI□ SAS 9240-8i), PCI Express® bus, SATA 6.0Gb/s, SAS 6.0Gb/s, RAID 0, 1, 10 support *Upgrade for 500*: Additional upgrade key for RAID 500 adapter, add RAID 5, 50 support *RAID 700*: ThinkServer RAID 700 adapter (LSI SAS 9260-8i), PCI Express bus, SATA 6.0Gb/s, SAS 6.0Gb/s, RAID 0, 1, 5, 6, 10, 50, 60 support *Battery for 700*: Intelligent Battery Backup Unit (iBBU08) for RAID 700	**Rear**
RAID Support	Up to RAID 0, 1, 5, 6, 10, 50, 60 via ThinkServer RAID 700 adapter	*Slot 4, 5 are available on dual processors models only*
Disk(s)	*3.5" SATA:* SATA 6.0Gb/s, 7200 rpm *3.5" SAS:* SAS 6.0Gb/s, 15000 rpm	
Tape drive Optical Diskette	None DVD±RW or DVD ROM, slim None (use USB port)	
Chipset	**Intel C606 Chipset**	
Ethernet	Two Gigabit Ethernet ports by Intel i350, one Gigabit Ethernet port by Intel 82574L, dedicate/share management	**Mechanical**
Riser card Front ports Rear ports	(See Right) Riser card 1 for slot 1-2, riser card 2 for slot 3-5 One analog VGA DB-15 connector, two USB 2.0 Four USB 2.0, one serial (9-pin), two ethernet (RJ-45), one RJ-45 (dedicate/share mgmt), one analog VGA DB-15 connector	● 2U rack ● 19"W x 28.9"D x 3.45"H (with rack handles) ● 482.4mm W x 734mm D x 87.6mm H (with rack handles) ● 26.5 kg (58.42 lb) when fully configured
Intelligent Diagnostics Module (IDM)	Supports IDM or IDM Premium on selected models; *Basic:* IDM LED lights indicate failing component category *Premium:* IDM Premium LED lights indicate individual failing part	**Disk Bays** Bay 1 5.25", 0.5" high, external, for optical Bay 2-9 3.5", 1" high, external, for disk
Systems mgmt	Onboard Aspeed AST2300 graphics/management processor, IPMI 2.0-compliant baseboard management controller (BMC); *iKVM:* add-on ThinkServer Management Module Premium for iKVM functions	**Expansion Slots** Slot 1: half-length, full-height, PCI Express 3.0 x16 Slot 2: half-length, full-height, PCI Express 2.0 x8 (x4 elec) Slot 3: Low Profile, PCI Express 3.0 x8 (x4 elec)
Security chip	No onboard TPM chip; *TPM:* additional add-on card for TPM function, TCG 1.2-compliant	*Slot 4-5 are available on dual processors models:* Slot 4: half-length, full-height, PCI Express 3.0 x16 (x8 elec) Slot 5: half-length, full-height, PCI Express 3.0 x8
Prerequisites Keyboard/mouse Power supply	SATA/SAS disk, OS None (use USB port) One or two 800 watts standard, two maximum, rear access, hot-swap, 80 PLUS® Gold qualified, redundant with two power supplies	**Security** ● Security chip (selected models, see information on left) ● Administrator password ● User password
Rack kit Cable management Cooling	Includes rack kit Optional cable management arm on selected models Four fans, hot-swap	● Boot sequence control ● Boot without keyboard, mouse, diskette ● Serial port I/O control ● USB port disablement (all)

Software Management Tools
● ThinkServer EasyStartup
● ThinkServer EasyManage

Energy Management Technology
● Lenovo® SmartGrid Manager

ENERGY STAR® Server 1.1-compliant
RoHS-compliant

Type-model	Processor(s)	Memory (MHz/type)	Memory DIMMs	Pre-conf RAID	Disk controller	Disk(s)	Disk bays	Disk type	SATA optical	Intelligent Diagnostics	TPM	System mgmt	Cable mgmt	Preload OS	PSU qty
3065-B6G	1xE5-2450	1600MHz RDIMM	1x16GB	No	700+Battery	None	8xHS	SATA/SAS	DVD±RW	Premium	TPM	iKVM	No	No	2

Limited warranty	**3-year** parts and labor
Processor	Up to two Intel® Xeon® E5-2400 series processors, **Intel Xeon E5-2450 processor (8C/16T, 2.1GHz, 20MB, 8.0 GT/s QPI x1)**, Turbo Boost 2.0 (up to 2.9GHz), 3-channel DDR3 memory controller (up to 1600MHz)
Implementation	Two LGA1356 sockets
Memory	UDIMM, RDIMM or LV RDIMM, DDR3, ECC, 3-channel per processor, 240-pin, 12 sockets (6 sockets per processor); 192GB max (RDIMM/LV RDIMM, 12x16GB) or 48GB max (UDIMM, 12x4GB)
Additional memory disclaimers	● *Actual memory operating speed depends on processor memory controller speed, installed memory speed, and quantity of memory DIMMs* ● *Over six DIMMs requires dual processors* ● *Mixing of UDIMM, RDIMM, or LV RDIMM is not supported*
Graphics	Onboard Aspeed AST2300 graphics/management processor, one VGA DB-15 on front, one VGA DB-15 on rear; Maximum resolution: 1920x1200@60Hz
Disk bays Disk controller	Eight 3.5" hot-swap SATA/SAS disk bays (see right) *RAID 300*: Onboard ThinkServer RAID 300 SATA/SAS controller, SATA 3.0Gb/s, SAS 3.0Gb/s, RAID 0, 1, 10 support *Upgrade for 300*: Additional upgrade key for RAID 300, add RAID 5 support *RAID 500*: ThinkServer RAID 500 adapter (LSI□ SAS 9240-8i), PCI Express® bus, SATA 6.0Gb/s, SAS 6.0Gb/s, RAID 0, 1, 10 support *Upgrade for 500*: Additional upgrade key for RAID 500 adapter, add RAID 5, 50 support *RAID 700*: ThinkServer RAID 700 adapter (LSI SAS 9260-8i), PCI Express bus, SATA 6.0Gb/s, SAS 6.0Gb/s, RAID 0, 1, 5, 6, 10, 50, 60 support *Battery for 700*: Intelligent Battery Backup Unit (iBBU08) for RAID 700
RAID Support	Up to RAID 0, 1, 5, 6, 10, 50, 60 via ThinkServer RAID 700 adapter
Disk(s)	*3.5" SATA*: SATA 6.0Gb/s, 7200 rpm *3.5" SAS*: SAS 6.0Gb/s, 15000 rpm
Tape drive Optical Diskette	None DVD±RW or DVD ROM, slim None (use USB port)
Chipset	**Intel C606 Chipset**
Ethernet Riser card Front ports Rear ports	Two Gigabit Ethernet ports by Intel i350, one Gigabit Ethernet port by Intel 82574L, dedicate/share management (See Right) Riser card 1 for slot 1-2, riser card 2 for slot 3-5 One analog VGA DB-15 connector, two USB 2.0 Four USB 2.0, one serial (9-pin), two ethernet (RJ-45), one RJ-45 (dedicate/share mgmt), one analog VGA DB-15 connector
Intelligent Diagnostics Module (IDM)	Supports IDM or IDM Premium on selected models; *Basic*: IDM LED lights indicate failing component category *Premium*: IDM Premium LED lights indicate individual failing part
Systems mgmt Security chip	Onboard Aspeed AST2300 graphics/management processor, IPMI 2.0-compliant baseboard management controller (BMC); *iKVM*: add-on ThinkServer Management Module Premium for iKVM functions No onboard TPM chip; *TPM*: additional add-on card for TPM function, TCG 1.2-compliant
Prerequisites Keyboard/mouse Power supply	SATA/SAS disk, OS None (use USB port) One or two 800 watts standard, two maximum, rear access, hot-swap, 80 PLUS® Gold qualified, redundant with two power supplies
Rack kit Cable management Cooling	Includes rack kit Optional cable management arm on selected models Four fans, hot-swap

2U Rack top

Front

Disk Bay 2-9

Rear

Slot 4, 5 are available on dual processors models only

Mechanical
- 2U rack
- 19"W x 28.9"D x 3.45"H (with rack handles)
- 482.4mm W x 734mm D x 87.6mm H (with rack handles)
- 26.5 kg (58.42 lb) when fully configured

Disk Bays
Bay 1	5.25",	0.5" high,	external,	for optical
Bay 2-9	3.5",	1" high,	external,	for disk

Expansion Slots
Slot 1: half-length, full-height, PCI Express 3.0 x16
Slot 2: half-length, full-height, PCI Express 2.0 x8 (x4 elec)
Slot 3: Low Profile, PCI Express 3.0 x8 (x4 elec)
Slot 4-5 are available on dual processors models:
Slot 4: half-length, full-height, PCI Express 3.0 x16 (x8 elec)
Slot 5: half-length, full-height, PCI Express 3.0 x8

Security
- Security chip (selected models, see information on left)
- Administrator password
- User password
- Boot sequence control
- Boot without keyboard, mouse, diskette
- Serial port I/O control
- USB port disablement (all)

Software Management Tools
- ThinkServer EasyStartup
- ThinkServer EasyManage

Energy Management Technology
- Lenovo® SmartGrid Manager
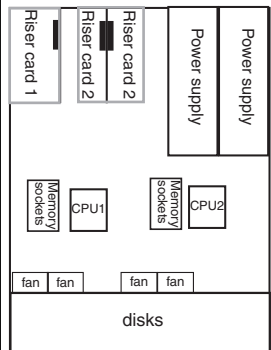
ENERGY STAR® Server 1.1-compliant
RoHS-compliant

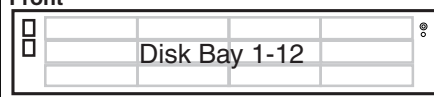# ThinkServer RD430 with twelve 3.5" Disk Bays (3059)

Type-model	Processor(s)	Memory (MHz/type)	Memory DIMMs	Pre-conf RAID	Disk controller	Disk(s)	Disk bays	Disk type	SATA optical	Intelligent Diagnostics	TPM	System mgmt	Cable mgmt	Preload OS	PSU qty
3059-F4G	2xE5-2450	1333MHz RDIMM	2x8GB	No	700+Battery	None	12xHS	SATA/SAS	No	No	TPM	iKVM	No	No	2

Limited warranty	**3-year** parts and labor
Processor	Up to two Intel® Xeon® E5-2400 series processors, **Intel Xeon E5-2450 processor (8C/16T, 2.1GHz, 20MB, 8.0 GT/s QPI x1)**, Turbo Boost 2.0 (up to 2.9GHz), 3-channel DDR3 memory controller (up to 1600MHz)
Implementation	Two LGA1356 sockets
Memory	UDIMM, RDIMM or LV RDIMM, DDR3, ECC, 3-channel per processor, 240-pin, 12 sockets (6 sockets per processor); 192GB max (RDIMM/LV RDIMM, 12x16GB) or 48GB max (UDIMM, 12x4GB)
Additional memory disclaimers	● *Actual memory operating speed depends on processor memory controller speed, installed memory speed, and quantity of memory DIMMs* ● *Over six DIMMs requires dual processors* ● *Mixing of UDIMM, RDIMM, or LV RDIMM is not supported*
Graphics	Onboard Aspeed AST2300 graphics/management processor, one VGA DB-15 on rear; Maximum resolution: 1920x1200@60Hz
Disk bays Disk controller	Twelve 3.5" hot-swap SATA/SAS disk bays (see right) *RAID 500*: ThinkServer RAID 500 adapter (LSI□ SAS 9240-8i), PCI Express® bus, SATA 6.0Gb/s, SAS 6.0Gb/s, RAID 0, 1, 10 support *Upgrade for 500*: Additional upgrade key for RAID 500 adapter, add RAID 5, 50 support *RAID 700*: ThinkServer RAID 700 adapter (LSI SAS 9260-8i), PCI Express bus, SATA 6.0Gb/s, SAS 6.0Gb/s, RAID 0, 1, 5, 6, 10, 50, 60 support *Battery for 700*: Intelligent Battery Backup Unit (iBBU08) for RAID 700
RAID Support	Up to RAID 0, 1, 5, 6, 10, 50, 60 via ThinkServer RAID 700 adapter
Disk(s)	*3.5" SATA*: SATA 6.0Gb/s, 7200 rpm *3.5" SAS*: SAS 6.0Gb/s, 15000 rpm
Tape drive	None
Optical	None (use USB port)
Diskette	None (use USB port)
Chipset	**Intel C606 Chipset**
Ethernet Riser card Front ports Rear ports	Two Gigabit Ethernet ports by Intel i350, one Gigabit Ethernet port by Intel 82574L, dedicate/share management (See Right) Riser card 1 for slot 1-2, riser card 2 for slot 3-5 Two USB 2.0 Four USB 2.0, one serial (9-pin), two ethernet (RJ-45), one RJ-45 (dedicate/share mgmt), one analog VGA DB-15 connector
Intelligent Diagnostics Module (IDM)	None
Systems mgmt	Onboard Aspeed AST2300 graphics/management processor, IPMI 2.0-compliant baseboard management controller (BMC); *iKVM*: add-on ThinkServer Management Module Premium for iKVM functions
Security chip	No onboard TPM chip; *TPM*: additional add-on card for TPM function, TCG 1.2-compliant
Prerequisites	SATA/SAS disk, OS
Keyboard/mouse	None (use USB port)
Power supply	One or two 800 watts standard, two maximum, rear access, hot-swap, 80 PLUS® Gold qualified, redundant with two power supplies
Rack kit	Includes rack kit
Cable management	Optional cable management arm on selected models
Cooling	Four fans, hot-swap

2U Rack top

Front

Disk Bay 1-12

Rear

Slot 4, 5 are available on dual processors models only

Mechanical
- 2U rack
- 19"W x 28.9"D x 3.45"H (with rack handles)
- 482.4mm W x 734mm D x 87.6mm H (with rack handles)
- 26.5 kg (58.42 lb) when fully configured

Disk Bays
Bay 1-12 3.5", 1" high, external, for disk

Expansion Slots
Slot 1: half-length, full-height, PCI Express 3.0 x16
Slot 2: half-length, full-height, PCI Express 2.0 x8 (x4 elec)
Slot 3: Low Profile, PCI Express 3.0 x8 (x4 elec)
Slot 4-5 are available on dual processors models:
Slot 4: half-length, full-height, PCI Express 3.0 x16 (x8 elec)
Slot 5: half-length, full-height, PCI Express 3.0 x8

Security
- Security chip (selected models, see information on left)
- Administrator password
- User password
- Boot sequence control
- Boot without keyboard, mouse, diskette
- Serial port I/O control
- USB port disablement (all)

Software Management Tools
- ThinkServer EasyStartup
- ThinkServer EasyManage

Energy Management Technology
- Lenovo® SmartGrid Manager

ENERGY STAR® Server 1.1-compliant
RoHS-compliant

© Lenovo
(G-RALB1-2) August 2012

Type-model	Processor(s)	Memory (MHz/type)	Memory DIMMs	Pre-conf RAID	Disk controller	Disk(s)	Disk bays	Disk type	SATA optical	Intelligent Diagnostics	TPM	System mgmt	Cable mgmt	Preload OS	PSU qty
3059-F5G	2xE5-2450	1600MHz RDIMM	2x8GB	No	700+Battery	None	12xHS	SATA/SAS	No	No	TPM	iKVM	No	No	2

Limited warranty	**3-year** parts and labor
Processor	Up to two Intel® Xeon® E5-2400 series processors, **Intel Xeon E5-2450 processor (8C/16T, 2.1GHz, 20MB, 8.0 GT/s QPI x1)**, Turbo Boost 2.0 (up to 2.9GHz), 3-channel DDR3 memory controller (up to 1600MHz)
Implementation	Two LGA1356 sockets
Memory	UDIMM, RDIMM or LV RDIMM, DDR3, ECC, 3-channel per processor, 240-pin, 12 sockets (6 sockets per processor); 192GB max (RDIMM/LV RDIMM, 12x16GB) or 48GB max (UDIMM, 12x4GB)
Additional memory disclaimers	● *Actual memory operating speed depends on processor memory controller speed, installed memory speed, and quantity of memory DIMMs* ● *Over six DIMMs requires dual processors* ● *Mixing of UDIMM, RDIMM, or LV RDIMM is not supported*
Graphics	Onboard Aspeed AST2300 graphics/management processor, one VGA DB-15 on rear; Maximum resolution: 1920x1200@60Hz
Disk bays Disk controller	Twelve 3.5" hot-swap SATA/SAS disk bays (see right) *RAID 500*: ThinkServer RAID 500 adapter (LSI□ SAS 9240-8i), PCI Express® bus, SATA 6.0Gb/s, SAS 6.0Gb/s, RAID 0, 1, 10 support *Upgrade for 500*: Additional upgrade key for RAID 500 adapter, add RAID 5, 50 support *RAID 700*: ThinkServer RAID 700 adapter (LSI SAS 9260-8i), PCI Express bus, SATA 6.0Gb/s, SAS 6.0Gb/s, RAID 0, 1, 5, 6, 10, 50, 60 support *Battery for 700*: Intelligent Battery Backup Unit (iBBU08) for RAID 700
RAID Support	Up to RAID 0, 1, 5, 6, 10, 50, 60 via ThinkServer RAID 700 adapter
Disk(s)	*3.5" SATA:* SATA 6.0Gb/s, 7200 rpm *3.5" SAS:* SAS 6.0Gb/s, 15000 rpm
Tape drive	None
Optical	None (use USB port)
Diskette	None (use USB port)
Chipset	**Intel C606 Chipset**
Ethernet	Two Gigabit Ethernet ports by Intel i350, one Gigabit Ethernet port by Intel 82574L, dedicate/share management
Riser card	(See Right) Riser card 1 for slot 1-2, riser card 2 for slot 3-5
Front ports	Two USB 2.0
Rear ports	Four USB 2.0, one serial (9-pin), two ethernet (RJ-45), one RJ-45 (dedicate/share mgmt), one analog VGA DB-15 connector
Intelligent Diagnostics Module (IDM)	None
Systems mgmt	Onboard Aspeed AST2300 graphics/management processor, IPMI 2.0-compliant baseboard management controller (BMC); *iKVM:* add-on ThinkServer Management Module Premium for iKVM functions
Security chip	No onboard TPM chip; *TPM:* additional add-on card for TPM function, TCG 1.2-compliant
Prerequisites	SATA/SAS disk, OS
Keyboard/mouse	None (use USB port)
Power supply	One or two 800 watts standard, two maximum, rear access, hot-swap, 80 PLUS® Gold qualified, redundant with two power supplies
Rack kit	Includes rack kit
Cable management	Optional cable management arm on selected models
Cooling	Four fans, hot-swap

2U Rack top

Front

Disk Bay 1-12

Rear

Slot 4, 5 are available on dual processors models only

Mechanical
- 2U rack
- 19"W x 28.9"D x 3.45"H (with rack handles)
- 482.4mm W x 734mm D x 87.6mm H (with rack handles)
- 26.5 kg (58.42 lb) when fully configured

Disk Bays

Bay 1-12 3.5", 1" high, external, for disk

Expansion Slots

Slot 1: half-length, full-height, PCI Express 3.0 x16
Slot 2: half-length, full-height, PCI Express 2.0 x8 (x4 elec)
Slot 3: Low Profile, PCI Express 3.0 x8 (x4 elec)
Slot 4-5 are available on dual processors models:
Slot 4: half-length, full-height, PCI Express 3.0 x16 (x8 elec)
Slot 5: half-length, full-height, PCI Express 3.0 x8

Security
- Security chip (selected models, see information on left)
- Administrator password
- User password
- Boot sequence control
- Boot without keyboard, mouse, diskette
- Serial port I/O control
- USB port disablement (all)

Software Management Tools
- ThinkServer EasyStartup
- ThinkServer EasyManage

Energy Management Technology
- Lenovo® SmartGrid Manager

ENERGY STAR® Server 1.1-compliant
RoHS-compliant