

ThinkServer RD330 Photography - 3.5" disk bays

ThinkServer™



ThinkServer RD330 Photography - 2.5" disk bays

ThinkServer™



# ThinkServer RD330 with 3.5" Disk Bay (4304) - TopSeller

Product Specifications Reference (PSREF)

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
4304-E1U	1xE5-2407	1333MHz RDIMM	1x4GB	No	300		4xHS	SATA/SAS DVD±RW	No	TPM	IPMI	No	No	No	1
4304-E2U	1xE5-2403	1333MHz RDIMM	1x4GB	No	300		4xHS	SATA/SAS DVD±RW	No	TPM	IPMI	No	No	No	1
4304-E3U	1xE5-2420	1333MHz RDIMM	1x8GB	No	500		4xHS	SATA/SAS DVD±RW	No	TPM	IPMI	No	No	No	1
4304-E4U	1xE5-2420	1333MHz RDIMM	1x8GB	No	500	4x1TB 3.5" SATA	4xHS	SATA/SAS DVD±RW	No	TPM	iKVM	No	No	No	2
4304-E5U	1xE5-2450	1333MHz RDIMM	1x8GB	No	500+Upgrade		4xHS	SATA/SAS DVD±RW	No	TPM	IPMI	No	No	No	2
4304-E6U	2xE5-2420	1333MHz RDIMM	2x8GB	No	500+Upgrade		4xHS	SATA/SAS DVD±RW	No	TPM	iKVM	No	No	No	1
4304-E7U	1xE5-2420	1333MHz RDIMM	1x16GB	No	500		4xHS	SATA/SAS DVD±RW	No	TPM	IPMI	No	No	No	2
4304-E8U	1xE5-2403	1333MHz RDIMM	1x4GB	No	500+Upgrade		4xHS	SATA/SAS DVD±RW	No	TPM	iKVM	No	No	No	1

Limited warranty **3-year** parts and labor; more services information see S-RAL sheet

**Processor**  
Up to two Intel® Xeon® E5-2400 series processors,  
**Intel Xeon E5-2403 processor (4C/4T, 1.8GHz, 10MB, 6.4 GT/s QPI x1),**  
3-channel DDR3 memory controller (up to 1066MHz)  
**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 DIMM 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**  
Four 3.5" hot-swap SATA/SAS disk bays (see right)

**Disk controller**  
**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 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 support  
**Battery for 700:** Intelligent Battery Backup Unit (iBBU08) for RAID 700

**RAID Support**  
Up to RAID 0, 1, 5, 6, 10 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**  
DVD±RW or DVD ROM, slim  
**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  
(See Right) Riser card 1 for slot 1, riser card 2 for slot 2  
Two USB 2.0  
**Riser card**  
Front ports  
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)**  
Supports IDM on selected models;  
**Basic:** IDM LED lights indicate failing component category

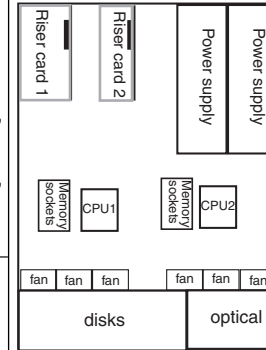
**Systems mgmt**  
Onboard Aspeed AST2300 graphics/management processor,  
IPMI 2.0-compliant baseboard management controller (BMC);  
**iKVM:** add-on ThinkServer Management Module Premium for iKVM  
functions

**Security chip**  
No onboard TPM chip;  
**TPM:** additional add-on card for TPM function, TCG 1.2-compliant

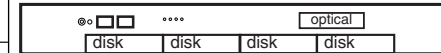
**Prerequisites**  
SATA/SAS disk, OS  
**Keyboard/mouse**  
None (use USB port)  
**Power supply**  
One or two 550 watts standard, two maximum, rear access, hot-swap,  
80 PLUS® Gold qualified, redundant with two power supplies

**Rack kit**  
Includes rack kit  
**Cable management**  
Optional cable management arm on selected models  
**Cooling**  
Six fans, non-hot swap

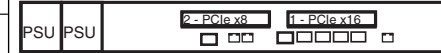
## 1U Rack top



## Front



## Rear



## Mechanical

- 1U rack
- 19"W x 28.9"D x 1.72"H (with rack handles)
- 482.4mm W x 734mm D x 43.6mm H (with rack handles)
- 17kg (37.5 lb) when fully configured

## Disk Bays

Bay 1 5.25", 0.5" high, external, for optical  
Bay 2-5 3.5", 1" high, external, for disk

## Expansion Slots

Slot 1: half-length, full-height, PCI Express 3.0 x16  
Slot 2: Low Profile, PCI Express 3.0 x8\*  
\* x4 elec for single processor model, x8 elec for dual processors model

## 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

For more accessories, see O-RAL sheet

# ThinkServer RD330 with 3.5" Disk Bay (4304) - TopSeller (June 2013)

Product Specifications Reference (PSREF)

Type-model	Processor(s)	Memory (MHz/type)	Memory Pre-conf DIMMs	RAID	Disk controller	Disk(s)	Disk bays	Disk type	SATA optical	Intelligent Diagnostics	TPM	System mgmt	Cable mgmt	Preload OS	PSU qty
4304-F5U	1x E5-2407	1600MHz RDIMM	1x8GB	No	300	2x1TB 3.5" SATA	4xHS	SATA/SAS	DVD±RW	No	TPM	IPMI	No	No	1

Limited warranty	<b>3-year</b> parts and labor; more services information see S-RAL sheet		<b>1U Rack top</b>																								
Processor	Up to two Intel® Xeon® E5-2400 series processors, <b>Intel Xeon E5-2407 processor (4C/4T, 2.2GHz, 10MB, 6.4 GT/s QPI x1)</b> , 3-channel DDR3 memory controller (up to 1066MHz)																										
Implementation	Two LGA1356 sockets																										
Memory	UDIMM, RDIMM or LV RDIMM, DDR3, ECC, 3-channel per processor, 240-pin, 12 DIMM sockets (6 sockets per processor); 192GB max (RDIMM/LV RDIMM, 12x16GB) or 48GB max (UDIMM, 12x4GB)																										
Additional memory disclaimers	<ul style="list-style-type: none"> <li>Actual memory operating speed depends on processor memory controller speed, installed memory speed, and quantity of memory DIMMs</li> <li>Over six DIMMs requires dual processors</li> <li>Mixing of UDIMM, RDIMM, or LV RDIMM is not supported</li> </ul>																										
Graphics	Onboard Aspeed AST2300 graphics/management processor, one VGA DB-15 on rear; Maximum resolution: 1920x1200@60Hz																										
Disk bays	Four 3.5" hot-swap SATA/SAS disk bays (see right)																										
Disk controller	<b>RAID 300:</b> Onboard ThinkServer RAID 300 SATA/SAS controller, SATA 3.0Gb/s, SAS 3.0Gb/s, RAID 0, 1, 10 support <b>Upgrade for 300:</b> Additional upgrade key for RAID 300, add RAID 5 support <b>RAID 500:</b> ThinkServer RAID 500 adapter (LSI SAS9240-8i), PCI Express bus, SATA 6.0Gb/s, SAS 6.0Gb/s, RAID 0, 1, 10 support <b>Upgrade for 500:</b> Additional upgrade key for RAID 500 adapter, add RAID 5 support <b>RAID 700:</b> ThinkServer RAID 700 adapter (LSI SAS9260-8i), PCI Express bus, SATA 6.0Gb/s, SAS 6.0Gb/s, RAID 0, 1, 5, 6, 10 support <b>Battery for 700:</b> Intelligent Battery Backup Unit (iBBU08) for RAID 700		<b>Front</b>  <b>Rear</b> 																								
RAID Support	Up to RAID 0, 1, 5, 6, 10 via ThinkServer RAID 700 adapter																										
Disk(s)	<b>3.5" SATA:</b> SATA 6.0Gb/s, 7200 rpm <b>3.5" SAS:</b> SAS 6.0Gb/s, 15000 rpm																										
Tape drive	None																										
Optical	DVD±RW or DVD ROM, slim																										
Diskette	None (use USB port)																										
Chipset	<b>Intel C606 Chipset</b>																										
Ethernet	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, riser card 2 for slot 2																										
Riser card	Two USB 2.0																										
Front 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																										
Rear ports	Supports IDM on selected models; <b>Basic:</b> IDM LED lights indicate failing component category																										
Intelligent Diagnostics Module (IDM)	Onboard Aspeed AST2300 graphics/management processor, IPMI 2.0-compliant baseboard management controller (BMC); <b>iKVM:</b> add-on ThinkServer Management Module Premium for iKVM functions																										
Systems mgmt	No onboard TPM chip; <b>TPM:</b> additional add-on card for TPM function, TCG 1.2-compliant																										
Security chip	SATA/SAS disk, OS																										
Prerequisites	None (use USB port)																										
Keyboard/mouse	One or two 550 watts standard, two maximum, rear access, hot-swap, 80 PLUS® Gold qualified, redundant with two power supplies																										
Power supply	Includes rack kit																										
Rack kit	Optional cable management arm on selected models																										
Cable management	Six fans, non-hot swap																										
Cooling			<b>Mechanical</b> <ul style="list-style-type: none"> <li>1U rack</li> <li>19"W x 28.9"D x 1.72"H (with rack handles)</li> <li>482.4mm W x 734mm D x 43.6mm H (with rack handles)</li> <li>17kg (37.5 lb) when fully configured</li> </ul> <b>Disk Bays</b> <table border="1"> <tr> <td>Bay 1</td> <td>5.25"</td> <td>0.5" high, external,</td> <td>for optical</td> </tr> <tr> <td>Bay 2-5</td> <td>3.5"</td> <td>1" high, external,</td> <td>for disk</td> </tr> </table> <b>Expansion Slots</b> <table border="1"> <tr> <td>Slot 1:</td> <td>half-length, full-height, PCI Express 3.0 x16</td> </tr> <tr> <td>Slot 2:</td> <td>Low Profile, PCI Express 3.0 x8*</td> </tr> </table> <p>* x4 elec for single processor model, x8 elec for dual processors model</p> <b>Security</b> <ul style="list-style-type: none"> <li>Security chip (selected models, see information on left)</li> <li>Administrator password</li> <li>User password</li> <li>Boot sequence control</li> <li>Boot without keyboard, mouse, diskette</li> <li>Serial port I/O control</li> <li>USB port disablement (all)</li> </ul> <b>Software Management Tools</b> <ul style="list-style-type: none"> <li>ThinkServer EasyStartup</li> <li>ThinkServer EasyManage</li> </ul> <b>Energy Management Technology</b> <ul style="list-style-type: none"> <li>Lenovo® SmartGrid Manager</li> </ul> <b>ENERGY STAR® Server 1.1-compliant</b> RoHS-compliant													Bay 1	5.25"	0.5" high, external,	for optical	Bay 2-5	3.5"	1" high, external,	for disk	Slot 1:	half-length, full-height, PCI Express 3.0 x16	Slot 2:	Low Profile, PCI Express 3.0 x8*
Bay 1	5.25"	0.5" high, external,	for optical																								
Bay 2-5	3.5"	1" high, external,	for disk																								
Slot 1:	half-length, full-height, PCI Express 3.0 x16																										
Slot 2:	Low Profile, PCI Express 3.0 x8*																										
	For more accessories, see O-RAL sheet																										

See footnotes for important warranty information  
US model(s) announced June 18, 2013

# ThinkServer RD330 with 3.5" Disk Bay (4305)

Product Specifications Reference (PSREF)

Type-model	Processor(s)	Memory (MHz/type)	Memory DIMMs	Memory Pre-conf RAID	Disk controller	Disk(s)	Disk bays	Disk type	SATA optical	Intelligent Diagnostics	System TPM	Cable mgmt	Preload OS	PSU qty
4305-B1U	1xE5-2407	1333MHz RDIMM	1x4GB	No	300	No	4xHS	SATA/SAS DVD±RW	No	TPM	IPMI	No	No	1
4305-B2U	1xE5-2403	1333MHz RDIMM	1x8GB	No	300	No	4xHS	SATA/SAS DVD±RW	No	TPM	IPMI	No	No	1
4305-B3U	1xE5-2420	1333MHz RDIMM	1x8GB	No	300	No	4xHS	SATA/SAS DVD±RW	No	TPM	IPMI	No	No	1
4305-B4U	1xE5-2450	1333MHz RDIMM	1x8GB	No	500+Upgrade	No	4xHS	SATA/SAS DVD±RW	No	TPM	iKVM	No	No	1
4305-B5U	1xE5-2450	1333MHz RDIMM	1x16GB	No	500+Upgrade	No	4xHS	SATA/SAS DVD±RW	No	TPM	iKVM	No	No	2

Limited warranty	<b>3-year</b> parts and labor; more warranty information see S-RAL sheet	
Processor	Up to two Intel® Xeon® E5-2400 series processors, <b>Intel Xeon E5-2403 processor (4C/4T, 1.8GHz, 10MB, 6.4 GT/s QPI x1)</b> , 3-channel DDR3 memory controller (up to 1066MHz) <b>Intel Xeon E5-2407 processor (4C/4T, 2.2GHz, 10MB, 6.4 GT/s QPI x1)</b> , 3-channel DDR3 memory controller (up to 1066MHz) <b>Intel Xeon E5-2420 processor (6C/12T, 1.9GHz, 15MB, 7.2 GT/s QPI x1)</b> , Turbo Boost 2.0 (up to 2.4GHz), 3-channel DDR3 memory controller (up to 1333MHz) <b>Intel Xeon E5-2450 processor (8C/16T, 2.1GHz, 20MB, 8.0 GT/s QPI x1)</b> , 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	<ul style="list-style-type: none"> <li>Actual memory operating speed depends on processor memory controller speed, installed memory speed, and quantity of memory DIMMs</li> <li>Over six DIMMs requires dual processors</li> <li>Mixing of UDIMM, RDIMM, or LV RDIMM is not supported</li> </ul>	
Graphics	Onboard Aspeed AST2300 graphics/management processor, one VGA DB-15 on rear; Maximum resolution: 1920x1200@60Hz	
Disk bays	Four 3.5" hot-swap SATA/SAS disk bays (see right)	
Disk controller	<b>RAID 300:</b> Onboard ThinkServer RAID 300 SATA/SAS controller, SATA 3.0Gb/s, SAS 3.0Gb/s, RAID 0, 1 support <b>Upgrade for 300:</b> Additional upgrade key for RAID 300, add RAID 5 support <b>RAID 500:</b> ThinkServer RAID 500 adapter (LSI SAS 9240-8i), PCI Express bus, SATA 6.0Gb/s, SAS 6.0Gb/s, RAID 0, 1, 10 support <b>Upgrade for 500:</b> Additional upgrade key for RAID 500 adapter, add RAID 5 support <b>RAID 700:</b> 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 support <b>Battery for 700:</b> Intelligent Battery Backup Unit (iBBU08) for RAID 700	
RAID Support	Up to RAID 0, 1, 5, 6, 10 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	DVD±RW or DVD ROM, slim	
Diskette	None (use USB port)	
Chipset	<b>Intel C606 Chipset</b>	
Ethernet	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, riser card 2 for slot 2	
Riser card	Two USB 2.0	
Front 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	
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)	Supports IDM on selected model; <b>Basic:</b> IDM LED lights indicate failing component category	
Systems mgmt	Onboard Aspeed AST2300 graphics/management processor, IPMI 2.0-compliant baseboard management controller (BMC); <b>iKVM:</b> add-on ThinkServer Management Module Premium for iKVM functions	
Security chip	No onboard TPM chip; <b>TPM:</b> 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 550 watts standard, two maximum, rear access, hot-swap, 80 PLUS® Gold qualified, redundant with two power supplies	
Rack kit	Includes rack kit	
Cable management	<b>Cable:</b> contains cable management arm	
Cooling	Six fans, non-hot swap	

**1U Rack top**

**Front**

**Rear**

**Mechanical**

- 1U rack
- 19"W x 28.9"D x 1.72"H (with rack handles)
- 482.4mm W x 734mm D x 43.6mm H (with rack handles)
- 17kg (37.5 lb) when fully configured

**Disk Bays**

Bay 1 5.25", 0.5" high, external, for optical  
 Bay 2-5 3.5", 1" high, external, for disk

**Expansion Slots**

Slot 1: half-length, full-height, PCI Express 3.0 x16  
 Slot 2: Low Profile, PCI Express 3.0 x8\*  
 \* x4 elec for single processor model, x8 elec for dual processors model

**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

For more accessories, see O-RAL sheet

See footnotes for important warranty information  
US model(s) announced August 14, 2012

# ThinkServer RD330 with 3.5" Disk Bay (4305) - September 2012

Product Specifications Reference (PSREF)

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
4305-F2U	1xE5-2407	1600MHz RDIMM	1x4GB	No	300		4xHS	SATA/SAS	DVD±RW	No	TPM	IPMI	No	No	1
4305-F3U	1xE5-2407	1600MHz RDIMM	4x8GB	No	700+Battery	3x500GB 3.5" SATA	4xHS	SATA/SAS	DVD±RW	No	TPM	iKVM	No	No	2
4305-F4U	1xE5-2420	1600MHz RDIMM	6x8GB	No	700+Battery	3x300GB 3.5" SAS	4xHS	SATA/SAS	DVD±RW	No	TPM	iKVM	No	No	2

Limited warranty	<b>3-year</b> parts and labor; more services information see S-RAL sheet	
Processor	Up to two Intel® Xeon® E5-2400 series processors, <b>Intel Xeon E5-2407 processor (4C/4T, 2.2GHz, 10MB, 6.4 GT/s QPI x1)</b> , 3-channel DDR3 memory controller (up to 1066MHz) <b>Intel Xeon E5-2420 processor (6C/12T, 1.9GHz, 15MB, 7.2 GT/s QPI x1)</b> , Turbo Boost 2.0 (up to 2.4GHz), 3-channel DDR3 memory controller (up to 1333MHz)	
Implementation	Two LGA1356 sockets	
Memory	UDIMM, RDIMM or LV RDIMM, DDR3, ECC, 3-channel per processor, 240-pin, 12 DIMM sockets (6 sockets per processor); 192GB max (RDIMM/LV RDIMM, 12x16GB) or 48GB max (UDIMM, 12x4GB)	
Additional memory disclaimers	<ul style="list-style-type: none"> <li>Actual memory operating speed depends on processor memory controller speed, installed memory speed, and quantity of memory DIMMs</li> <li>Over six DIMMs requires dual processors</li> <li>Mixing of UDIMM, RDIMM, or LV RDIMM is not supported</li> </ul>	
Graphics	Onboard Aspeed AST2300 graphics/management processor, one VGA DB-15 on rear; Maximum resolution: 1920x1200@60Hz	
Disk bays	Four 3.5" hot-swap SATA/SAS disk bays (see right)	
Disk controller	<b>RAID 300:</b> Onboard ThinkServer RAID 300 SATA/SAS controller, SATA 3.0Gb/s, SAS 3.0Gb/s, RAID 0, 1, 10 support <b>Upgrade for 300:</b> Additional upgrade key for RAID 300, add RAID 5 support <b>RAID 500:</b> ThinkServer RAID 500 adapter (LSI SAS 9240-8i), PCI Express bus, SATA 6.0Gb/s, SAS 6.0Gb/s, RAID 0, 1, 10 support <b>Upgrade for 500:</b> Additional upgrade key for RAID 500 adapter, add RAID 5 support <b>RAID 700:</b> 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 support <b>Battery for 700:</b> Intelligent Battery Backup Unit (iBBU08) for RAID 700	
RAID Support	Up to RAID 0, 1, 5, 6, 10 via ThinkServer RAID 700 adapter	
Disk(s)	<b>3.5" SATA:</b> SATA 6.0Gb/s, 7200 rpm <b>3.5" SAS:</b> SAS 6.0Gb/s, 15000 rpm	
Tape drive	None	
Optical	DVD±RW or DVD ROM, slim	
Diskette	None (use USB port)	
Chipset	<b>Intel C606 Chipset</b>	
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, riser card 2 for slot 2	
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)	Supports IDM on selected models; <b>Basic:</b> IDM LED lights indicate failing component category	
Systems mgmt	Onboard Aspeed AST2300 graphics/management processor, IPMI 2.0-compliant baseboard management controller (BMC); <b>iKVM:</b> add-on ThinkServer Management Module Premium for iKVM functions	
Security chip	No onboard TPM chip; <b>TPM:</b> 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 550 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	Six fans, non-hot swap	

**1U Rack top**

**Front**

**Rear**

<b>Mechanical</b>	
<ul style="list-style-type: none"> <li>1U rack</li> <li>19"W x 28.9"D x 1.72"H (with rack handles)</li> <li>482.4mm W x 734mm D x 43.6mm H (with rack handles)</li> <li>17kg (37.5 lb) when fully configured</li> </ul>	
<b>Disk Bays</b>	
Bay 1	5.25", 0.5" high, external, for optical
Bay 2-5	3.5", 1" high, external, for disk
<b>Expansion Slots</b>	
Slot 1:	half-length, full-height, PCI Express 3.0 x16
Slot 2:	Low Profile, PCI Express 3.0 x8*
* x4 elec for single processor model, x8 elec for dual processors model	
<b>Security</b>	
<ul style="list-style-type: none"> <li>Security chip (selected models, see information on left)</li> <li>Administrator password</li> <li>User password</li> <li>Boot sequence control</li> <li>Boot without keyboard, mouse, diskette</li> <li>Serial port I/O control</li> <li>USB port disablement (all)</li> </ul>	
<b>Software Management Tools</b>	
<ul style="list-style-type: none"> <li>ThinkServer EasyStartup</li> <li>ThinkServer EasyManage</li> </ul>	
<b>Energy Management Technology</b>	
<ul style="list-style-type: none"> <li>Lenovo® SmartGrid Manager</li> </ul>	
<b>ENERGY STAR® Server 1.1-compliant</b> RoHS-compliant	
For more accessories, see O-RAL sheet	

See footnotes for important warranty information  
US model(s) announced September 11, 2012

# ThinkServer RD330 with 2.5" Disk Bay (3073) - TopSeller

Product Specifications Reference (PSREF)

Type-model	Processor(s)	Memory (MHz/type)	Memory DIMMs	Memory Pre-conf RAID	Disk controller	Disk(s)	Disk bays	Disk type	SATA optical	Intelligent Diagnostics	System TPM mgmt	Cable mgmt	Preload OS	PSU qty
3073-C1U	1xE5-2403	1333MHz	RDIMM 1x4GB	No	300		6xHS	SATA/SAS DVD±RW	No	TPM	IPMI	No	No	1
3073-C2U	1xE5-2407	1333MHz	RDIMM 1x4GB	No	300		6xHS	SATA/SAS DVD±RW	No	TPM	IPMI	No	No	1
3073-C3U	1xE5-2420	1333MHz	RDIMM 1x8GB	No	500		6xHS	SATA/SAS DVD±RW	No	TPM	IPMI	No	No	1
3073-C4U	1xE5-2450	1333MHz	RDIMM 1x8GB	No	500+Upgrade		6xHS	SATA/SAS DVD±RW	No	TPM	IPMI	No	No	2
3073-C5U	2xE5-2420	1333MHz	RDIMM 2x8GB	No	500+Upgrade		6xHS	SATA/SAS DVD±RW	No	TPM	iKVM	No	No	1
3073-C6U	2xE5-2420	1333MHz	RDIMM 2x8GB	No	500+Upgrade	2x200G SSD	6xHS	SATA/SAS DVD±RW	No	TPM	iKVM	No	No	2
3073-C7U	1xE5-2420	1333MHz	RDIMM 1x16GB	No	500		6xHS	SATA/SAS DVD±RW	No	TPM	IPMI	No	No	2
3073-C8U	1xE5-2450	1333MHz	RDIMM 1x8GB	No	300		6xHS	SATA/SAS DVD±RW	No	TPM	IPMI	No	No	1

Limited warranty **3-year** parts and labor; more services information see S-RAL sheet

**Processor**  
Up to two Intel® Xeon® E5-2400 series processors,  
**Intel Xeon E5-2403 processor (4C/4T, 1.8GHz, 10MB, 6.4 GT/s QPI x1),**  
3-channel DDR3 memory controller (up to 1066MHz)  
**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 DIMM 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**  
Six 2.5" hot-swap SATA/SAS disk bays (see right)

**Disk controller**  
**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 support  
**Battery for 700:** Intelligent Battery Backup Unit (iBBU08) for RAID 700

**RAID Support**  
Up to RAID 0, 1, 5, 6, 10, 50 via ThinkServer RAID 700 adapter

**Disk(s)**  
2.5" SAS: SAS 6.0Gb/s, 10000 rpm  
SSD: Solid State Drive, 2.5"

**Tape drive**  
None

**Optical**  
DVD±RW or DVD ROM, slim

**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  
(See Right) Riser card 1 for slot 1, riser card 2 for slot 2

**Riser card**  
One analog VGA DB-15 connector, two USB 2.0

**Front 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)**  
Supports IDM on selected models;  
**Basic:** IDM LED lights indicate failing component category

**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)

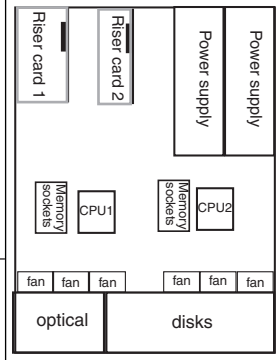
**Power supply**  
One or two 550 watts standard, two maximum, rear access, hot-swap,  
80 PLUS® Gold qualified, redundant with two power supplies

**Rack kit**  
Includes rack kit

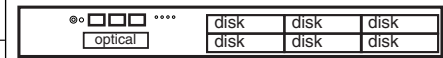
**Cable management**  
Optional cable management arm on selected models

**Cooling**  
Six fans, non-hot swap

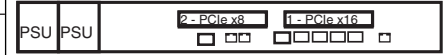
## 1U Rack top



## Front



## Rear



## Mechanical

- 1U rack
- 19"W x 28.9"D x 1.72"H (with rack handles)
- 482.4mm W x 734mm D x 43.6mm H (with rack handles)
- 17kg (37.5 lb) when fully configured

## Disk Bays

Bay 1 5.25", 0.5" high, external, for optical  
Bay 2-7 2.5", 0.6" high, external, for disk

## Expansion Slots

Slot 1: half-length, full-height, PCI Express 3.0 x16  
Slot 2: Low Profile, PCI Express 3.0 x8\*  
\* x4 elec for single processor model, x8 elec for dual processors model

## 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

For more accessories, see O-RAL sheet

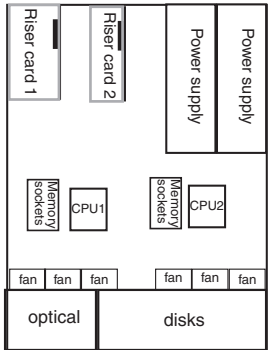
See footnotes for important warranty information  
US model(s) announced August 14, 2012

# ThinkServer RD330 with 2.5" Disk Bay (3074)

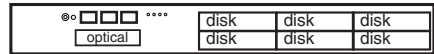
Product Specifications Reference (PSREF)

Type-model	Processor(s)	Memory (MHz/type)	Memory DIMMs	Memory Pre-conf RAID	Disk controller	Disk(s)	Disk bays	Disk type	SATA optical	Intelligent Diagnostics	TPM	System mgmt	Cable mgmt	Preload OS	PSU qty
3074-D1U	1xE5-2407	1333MHz RDIMM	1x4GB	No	300	None	6xHS	SATA/SAS DVD±RW	No	TPM	IPMI	No	No	No	1
3074-D2U	1xE5-2403	1333MHz RDIMM	1x8GB	No	300	None	6xHS	SATA/SAS DVD±RW	No	TPM	IPMI	No	No	No	1
3074-D3U	1xE5-2420	1333MHz RDIMM	1x8GB	No	300	None	6xHS	SATA/SAS DVD±RW	No	TPM	IPMI	No	No	No	2
3074-D4U	1xE5-2450	1333MHz RDIMM	1x8GB	No	500+Upgrade	None	6xHS	SATA/SAS DVD±RW	No	TPM	iKVM	No	No	No	1
3074-D5U	1xE5-2450	1333MHz RDIMM	1x16GB	No	500+Upgrade	None	6xHS	SATA/SAS DVD±RW	No	TPM	iKVM	No	No	No	2

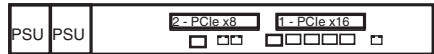
Limited warranty	<b>3-year</b> parts and labor; more services information see S-RAL sheet	
Processor	Up to two Intel® Xeon® E5-2400 series processors, <b>Intel Xeon E5-2403 processor (4C/4T, 1.8GHz, 10MB, 6.4 GT/s QPI x1),</b> 3-channel DDR3 memory controller (up to 1066MHz) <b>Intel Xeon E5-2407 processor (4C/4T, 2.2GHz, 10MB, 6.4 GT/s QPI x1),</b> 3-channel DDR3 memory controller (up to 1066MHz) <b>Intel Xeon E5-2420 processor (6C/12T, 1.9GHz, 15MB, 7.2 GT/s QPI x1),</b> Turbo Boost 2.0 (up to 2.4GHz), 3-channel DDR3 memory controller (up to 1333MHz) <b>Intel Xeon E5-2450 processor (8C/16T, 2.1GHz, 20MB, 8.0 GT/s QPI x1),</b> 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 DIMM sockets (6 sockets per processor); 192GB max (RDIMM/LV RDIMM, 12x16GB) or 48GB max (UDIMM, 12x4GB)	
Additional memory disclaimers	<ul style="list-style-type: none"> <li>Actual memory operating speed depends on processor memory controller speed, installed memory speed, and quantity of memory DIMMs</li> <li>Over six DIMMs requires dual processors</li> <li>Mixing of UDIMM, RDIMM, or LV RDIMM is not supported</li> </ul>	
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	Six 2.5" hot-swap SATA/SAS disk bays (see right)	
Disk controller	<b>RAID 300:</b> Onboard ThinkServer RAID 300 SATA/SAS controller, SATA 3.0Gb/s, SAS 3.0Gb/s, RAID 0, 1, 10 support <b>Upgrade for 300:</b> Additional upgrade key for RAID 300, add RAID 5 support <b>RAID 500:</b> ThinkServer RAID 500 adapter (LSI® SAS 9240-8i), PCI Express bus, SATA 6.0Gb/s, SAS 6.0Gb/s, RAID 0, 1, 10 support <b>Upgrade for 500:</b> Additional upgrade key for RAID 500 adapter, add RAID 5, 50 support <b>RAID 700:</b> 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 support <b>Battery for 700:</b> Intelligent Battery Backup Unit (iBBU08) for RAID 700	
RAID Support	Up to RAID 0, 1, 5, 6, 10, 50 via ThinkServer RAID 700 adapter	
Disk(s)	2.5" SAS: SAS 6.0Gb/s, 10000 rpm SSD: Solid State Drive, 2.5"	
Tape drive	None	
Optical	DVD±RW or DVD ROM, slim	
Diskette	None (use USB port)	
Chipset	<b>Intel C606 Chipset</b>	
Ethernet	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, riser card 2 for slot 2	
Riser card	One analog VGA DB-15 connector, two USB 2.0	
Front 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	
Rear ports		
Intelligent Diagnostics Module (IDM)	Supports IDM on selected models; <b>Basic:</b> IDM LED lights indicate failing component category	
Systems mgmt	Onboard Aspeed AST2300 graphics/management processor, IPMI 2.0-compliant baseboard management controller (BMC); <b>iKVM:</b> add-on ThinkServer Management Module Premium for iKVM functions	
Security chip	No onboard TPM chip; <b>TPM:</b> 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 550 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	Six fans, non-hot swap	



**1U Rack top**



**Front**



**Rear**

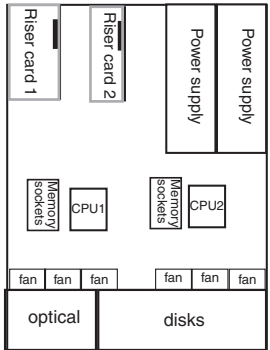
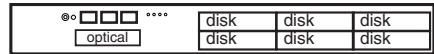
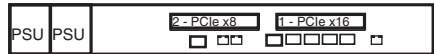
<b>Mechanical</b>	
<ul style="list-style-type: none"> <li>1U rack</li> <li>19"W x 28.9"D x 1.72"H (with rack handles)</li> <li>482.4mm W x 734mm D x 43.6mm H (with rack handles)</li> <li>17kg (37.5 lb) when fully configured</li> </ul>	
<b>Disk Bays</b>	
Bay 1	5.25", 0.5" high, external, for optical
Bay 2-7	2.5", 0.6" high, external, for disk
<b>Expansion Slots</b>	
Slot 1:	half-length, full-height, PCI Express 3.0 x16
Slot 2:	Low Profile, PCI Express 3.0 x8*
* x4 elec for single processor model, x8 elec for dual processors model	
<b>Security</b>	
<ul style="list-style-type: none"> <li>Security chip (selected models, see information on left)</li> <li>Administrator password</li> <li>User password</li> <li>Boot sequence control</li> <li>Boot without keyboard, mouse, diskette</li> <li>Serial port I/O control</li> <li>USB port disablement (all)</li> </ul>	
<b>Software Management Tools</b>	
<ul style="list-style-type: none"> <li>ThinkServer EasyStartup</li> <li>ThinkServer EasyManage</li> </ul>	
<b>Energy Management Technology</b>	
<ul style="list-style-type: none"> <li>Lenovo® SmartGrid Manager</li> </ul>	
<b>ENERGY STAR® Server 1.1-compliant</b> RoHS-compliant	
For more accessories, see O-RAL sheet	



# ThinkServer RD330 with 2.5" Disk Bay (3074) - September 2012

Product Specifications Reference (PSREF)

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
3074-D6U	1xE5-2407	1600MHz RDIMM	1x4GB	No	300		6xHS	SATA/SAS DVD±RW	No	TPM	IPMI	No	No	No	1
3074-D7U	1xE5-2407	1600MHz RDIMM	4x8GB	No	700+Battery	3x300GB 2.5" SAS	6xHS	SATA/SAS DVD±RW	No	TPM	iKVM	No	No	No	2
3074-D8U	1xE5-2420	1600MHz RDIMM	6x8GB	No	700+Battery	3x300GB 2.5" SAS	6xHS	SATA/SAS DVD±RW	No	TPM	iKVM	No	No	No	2

Limited warranty	<b>3-year</b> parts and labor; more services information see S-RAL sheet	
Processor	Up to two Intel® Xeon® E5-2400 series processors, <b>Intel Xeon E5-2407 processor (4C/4T, 2.2GHz, 10MB, 6.4 GT/s QPI x1)</b> , 3-channel DDR3 memory controller (up to 1066MHz) <b>Intel Xeon E5-2420 processor (6C/12T, 1.9GHz, 15MB, 7.2 GT/s QPI x1)</b> , Turbo Boost 2.0 (up to 2.4GHz), 3-channel DDR3 memory controller (up to 1333MHz)	
Implementation	Two LGA1356 sockets	
Memory	UDIMM, RDIMM or LV RDIMM, DDR3, ECC, 3-channel per processor, 240-pin, 12 DIMM sockets (6 sockets per processor); 192GB max (RDIMM/LV RDIMM, 12x16GB) or 48GB max (UDIMM, 12x4GB)	
Additional memory disclaimers	<ul style="list-style-type: none"> <li>Actual memory operating speed depends on processor memory controller speed, installed memory speed, and quantity of memory DIMMs</li> <li>Over six DIMMs requires dual processors</li> <li>Mixing of UDIMM, RDIMM, or LV RDIMM is not supported</li> </ul>	
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	Six 2.5" hot-swap SATA/SAS disk bays (see right)	
Disk controller	<b>RAID 300:</b> Onboard ThinkServer RAID 300 SATA/SAS controller, SATA 3.0Gb/s, SAS 3.0Gb/s, RAID 0, 1, 10 support <b>Upgrade for 300:</b> Additional upgrade key for RAID 300, add RAID 5 support <b>RAID 500:</b> ThinkServer RAID 500 adapter (LSI SAS 9240-8i), PCI Express bus, SATA 6.0Gb/s, SAS 6.0Gb/s, RAID 0, 1, 10 support <b>Upgrade for 500:</b> Additional upgrade key for RAID 500 adapter, add RAID 5, 50 support <b>RAID 700:</b> 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 support <b>Battery for 700:</b> Intelligent Battery Backup Unit (iBBU08) for RAID 700	
RAID Support	Up to RAID 0, 1, 5, 6, 10, 50 via ThinkServer RAID 700 adapter	
Disk(s)	2.5" SAS: SAS 6.0Gb/s, 10000 rpm SSD: Solid State Drive, 2.5"	
Tape drive	None	
Optical	DVD±RW or DVD ROM, slim	
Diskette	None (use USB port)	
Chipset	<b>Intel C606 Chipset</b>	
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, riser card 2 for slot 2	
Front ports	One analog VGA DB-15 connector, 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)	Supports IDM on selected models; <b>Basic:</b> IDM LED lights indicate failing component category	
Systems mgmt	Onboard Aspeed AST2300 graphics/management processor, IPMI 2.0-compliant baseboard management controller (BMC); <b>iKVM:</b> add-on ThinkServer Management Module Premium for iKVM functions	
Security chip	No onboard TPM chip; <b>TPM:</b> 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 550 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	Six fans, non-hot swap	
<div style="display: flex; justify-content: space-between;"> <div style="width: 60%;"> <p><b>1U Rack top</b></p>  <p><b>Front</b></p>  <p><b>Rear</b></p>  </div> <div style="width: 35%;"> <p><b>Mechanical</b></p> <ul style="list-style-type: none"> <li>1U rack</li> <li>19"W x 28.9"D x 1.72"H (with rack handles)</li> <li>482.4mm W x 734mm D x 43.6mm H (with rack handles)</li> <li>17kg (37.5 lb) when fully configured</li> </ul> <p><b>Disk Bays</b></p> <p>Bay 1 5.25", 0.5" high, external, for optical Bay 2-7 2.5", 0.6" high, external, for disk</p> <p><b>Expansion Slots</b></p> <p>Slot 1: half-length, full-height, PCI Express 3.0 x16 Slot 2: Low Profile, PCI Express 3.0 x8* * x4 elec for single processor model, x8 elec for dual processors model</p> <p><b>Security</b></p> <ul style="list-style-type: none"> <li>Security chip (selected models, see information on left)</li> <li>Administrator password</li> <li>User password</li> <li>Boot sequence control</li> <li>Boot without keyboard, mouse, diskette</li> <li>Serial port I/O control</li> <li>USB port disablement (all)</li> </ul> <p><b>Software Management Tools</b></p> <ul style="list-style-type: none"> <li>ThinkServer EasyStartup</li> <li>ThinkServer EasyManage</li> </ul> <p><b>Energy Management Technology</b></p> <ul style="list-style-type: none"> <li>Lenovo® SmartGrid Manager</li> </ul> <p><b>ENERGY STAR® Server 1.1-compliant</b> RoHS-compliant</p> <p>For more accessories, see O-RAL sheet</p> </div> </div>		

See footnotes for important warranty information  
US model(s) announced September 11, 2012