























<sup>\*</sup> 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

| Type-    |              | Memory        | Memory | Pre-conf | Disk        |         | Disk | Disk     | SATA    | Intelligent |     | System | Cable | Preload | PSU |
|----------|--------------|---------------|--------|----------|-------------|---------|------|----------|---------|-------------|-----|--------|-------|---------|-----|
| model    | Processor(s) | (MHz/type)    | DIMMs  | RAID     | controller  | Disk(s) | bays | type     | optical | Diagnostics | TPM | mgmt   | mgmt  | os      | 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  | 2U Rack top  |
|---|---|--|
| 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)   | Power supply Power supply Riser card 2 Riser card 2  |
| Implementation                                  | Two LGA1356 sockets   | SOCHETIC CPU1 CPU2   |
| Memory  Additional memory disclaimers           | 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)  • 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   | fan fan fan fan optical  Front   |
| Graphics  | Onboard Aspeed AST2300 graphics/management processor, one VGA DB-15 on front, one VGA DB-15 on rear; Maximum resolution: 1920x1200@60Hz   | Disk Bay 2-9   |
| Disk bays<br>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  4-PClexi6 5-PClex8 PSU PSU 3-PClex8 PSU PSU 9-DD - DD - DD - DD - DD - DD - DD - D   |
| 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<br>3.5" SAS: SAS 6.0Gb/s, 15000 rpm   |  |
| Tape drive<br>Optical<br>Diskette               | None<br>DVD±RW or DVD ROM, slim<br>None (use USB port)  | Mechanical  • 2U rack  |
| Chipset   | Intel C606 Chipset  | • 19"W x 28.9"D x 3.45"H (with rack handles)<br>• 482.4mm W x 734mm D x 87.6mm H (with rack handles)   |
| 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   | Disk Bays  Bay 1 5.25", 0.5" high, external, for optical Bay 2-9 3.5", 1" high, external, for disk  - 26.5 kg (58.42 lb) when fully configured  Disk Bays  Disk Bays  For optical for disk                               |
| Intelligent<br>Diagnostics Module<br>(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  | 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)  |
| 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   | 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 chip                                   | No onboard TPM chip; TPM: additional add-on card for TPM function, TCG 1.2-compliant  | Security  • Security chip (selected models, see information on left)   |
| Prerequisites<br>Keyboard/mouse<br>Power supply | SATA/SAS disk, OS<br>None (use USB port)<br>One or two 800 watts standard, two maximum, rear access, hot-swap,<br>80 PLUS® Gold qualified, redundant with two power supplies  | Security crip (selected models, see information on left)     Administrator password     User password     Boot sequence control     Boot without keyboard, mouse, diskette     Serial port I/O control                   |
| Rack kit Cable management                       | Includes rack kit Optional cable management arm on selected models  | USB port disablement (all)   |
| Cooling   | Four fans, hot-swap   | 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)

Product Specifications Reference (PSREF)

| Type-    |              | Memory        | Memory | Pre-conf | Disk        |         | Disk | Disk     | SATA    | Intelligent |     | System | Cable | Preload | PSU |
|----------|--------------|---------------|--------|----------|-------------|---------|------|----------|---------|-------------|-----|--------|-------|---------|-----|
| model    | Processor(s) | (MHz/type)    | DIMMs  | RAID     | controller  | Disk(s) | bays | type     | optical | Diagnostics | TPM | mgmt   | mgmt  | os      | qty |
| 3064-A10 | 3 1xE5-2450  | 1600MHz RDIMM | 1x8GB  | No       | 500+Upgrade | None    | 8xHS | SATA/SAS | DVD±RW  | Premium     | TPM | iKVM   | No    | No      | 2   |

| Up to two Intel® Xeon® 15-2400 series processors. Intel Xeon Ex-5450 processor (8C/16T, 2.1GHz, 20MB, 8.0 GT/6 QPI x1), Turbo Boost 2.0 (up to 2.9GHz). The Boost 2.0 (up to 2.9GHz). The Coll 1365 society of the College of t   |   |   |   |
|--|---|---|---|
| Intel Xson E5-2450 processor (BC/16T, 2.10Hz, 20MB, 8.0 G7/s QPL x1) Implementation Implementati | Limited warranty                        |   | 2U Rack top   |
| Memory  Valdyn, 12 Action  Additional memory disclaimers  Additional memory disclaimers  Action memory genetic genetic graves processor; Action memory genetic genetic graves are processor; or valdyness of the processor of the p | Processor                               | 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)  | Power su<br>Power su<br>Riser card  |
| 240-pin. 12 sockets (6 sockets per processor).  240-pin. 12 sockets (6 sockets |   |   |   |
| disclaimers  **Owner Speaks, assistant memory, speaks, and quartiely of memory Unitins  **Alting of UDMM, ROMM, and USMDM is not supported  Onboard Aspeed A ST2300 graphics/management processor, new YGA DB-15 on frost, new | Memory                                  | 240-pin, 12 sockets (6 sockets per processor);<br>192GB max (RDIMM/LV RDIMM, 12x16GB) or 48GB max (UDIMM,<br>12x4GB)  |   |
| one VGA DB-15 on front, one VGA DB-15 on rear; Maximum resolution: 1250-1250-1260 @Gottz  Bisk bays  Eight 1,5° hot-swap SATA/SAS disk sys (see right) Onboard ThinkServer RAID 500 SATA/SAS controller, ARIA 30Gus, SAS 30Gus, RAID 300, 1, 10 support add RAID 500.  FRAID 500.  Front ThinkServer RAID 500 adapter (LSI SAS 924-8), PCI Express 5us. SATA 6.05ks, SAS 6.05ks, RAID 500.  Front Description of ThinkServer RAID 500 adapter, add RAID 1, 10 support ARID 700:  FRAID 700:  FRAID 700:  FRAID 700:  FRAID 700:  FRAID 500, FOI Express 5us. SATA 6.05ks, SAS 6.05ks, RAID 0, 1, 5, 6, 10, 50, 60 support Intelligent Battery Backup Unit (BBUs) for RAID 700 Disk(6)  3.5° SATA: SAT 6.05ks, SAD 50.05ks, SAS 6.05ks, RAID 0, 1, 5, 6, 10, 50, 60 support Tened frive Opicial  ThinkServer RAID 700 adapter Disk(6)  3.5° SATA: SAT 6.05ks, SAD 50.05ks, SAS 6.05ks, RAID 0, 1, 5, 6, 10, 50, 60 support ThinkServer RAID 700 adapter Disk(6)  3.5° SATA: SAT 6.05ks, SAD 50.05ks, SAS 6.05ks, SAS 6.05ks, RAID 0, 1, 5, 6, 10, 50, 60 support ThinkServer RAID 700 adapter Disk(6)  3.5° SATA: SAT 6.05ks, SATA 6.05ks, SAS 6.05ks, SAS 6.05ks, RAID 0, 1, 5, 6, 10, 50, 60 support Tened drive Opicial Disk(6)  3.5° SATA: SAT 6.05ks, SATA 6.05ks, SAS 6.05ks, RAID 0, 1, 5, 6, 10, 50, 60 support Tened drive Opicial Disk(6)  3.5° SATA: SAT 6.05ks, SATA 6.05ks, SAS 6.05ks, S  | Additional memory disclaimers           | controller speed, installed memory speed, and quantity of memory DIMMs  • Over six DIMMs requires dual processors   |   |
| Disk controller  AAID 300: Onboard ThinkServer RAID 300 SATA/SAS controller, SATA 3.06(bis, SAS 10.06b)s, RAID 0.1, 10 support add RAID 500: ThinkServer RAID 500 adapter (LSI SAS 220-8), RAID 0.1, 10 support AID 500 sections and RAID 700 adapter (LSI SAS 220-8), RAID 0.1, 10 support AID 700 adapter (LSI SAS 220-8), RAID 0.1, 10 support Disk (SAS 230-8), POI Express bus, SATA 6.0Gb/s, SAS 0.06b/s, SAS 0.06 | Graphics                                | one VGA DB-15 on front, one VGA DB-15 on rear;  |   |
| HAID 500. ThinkServer RAÍD 500 adapter (LSI SAS 9240-8), PCI Express² bus, SATA 6.00b/s, SAS 6.0db/s, RAID 0, 1, 10 support  ### PAID 700: Touris Server RAID 700 adapter (LSI SAS 9260-8), PCI Express bus, SATA 6.00b/s, SAS 6.0db/s, RAID 0, 1, 5, 6, 10, 50, 60 support  ### PAID 700: Intelligent Battery Backup Unit (IBBUD8) for RAID 700  ### PAID 500 (RAID 0, 1, 5, 6, 10, 50, 60 via ThinkServer RAID 700 adapter (LSI SAS 9260-8)), PCI Express bus, SATA 6.00b/s, SAS 6.0db/s, RAID 0, 1, 5, 6, 10, 50, 60 via ThinkServer RAID 700 adapter (Disks)  ### PAID 500 (Point Server RAID 700 adapter (Disks)  ### PAID 500 (P  | Disk bays<br>Disk controller            | AAID 300: Onboard ThinkServer AAID 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,  | ®∘□□□ :::: optical  |
| Bull   Comparison   Compariso   |   | RAID 500: ThinkServer RAID 500 adapter (LSI SAS 9240-8i), PCI Express® bus, SATA 6.0Gb/s, SAS 6.0Gb/s,  | 4 - PCle x16 1 - PCle x16   |
| RAID Support  Battery for 700: Intelligent Battery Backbuy Unit (BBBU08) for RAID 700  RAID Support  Up to RAID 0, 1, 5, 6, 10, 50, 60 support Battery for 700: Intelligent Battery Backbuy Unit (BBBU08) for RAID 700  RAID Support  Up to RAID 0, 1, 5, 6, 10, 50, 60 support Battery Backbuy Unit (BBBU08) for RAID 700  RAID Support  Up to RAID 0, 1, 5, 6, 10, 50, 60 via ThinkServer RAID 700 adapter  3.5° SAT3: SAT4 SAT4 6, OGDbs, 7200 rpm  3.5° SAT5: SAT6 6, OGDbs, 15000 rpm  Tape drive Optical  DVD-IFW or DVD ROM, slim None (use USB port)  Intel C606 Chipset  Eithernet  Two Gigabit Ethernet port by Intel 350, one Gigabit Ethernet port by Inte |   | Upgrade for 500: Additional upgrade key for RAID 500 adapter.   | 3 - PCle x8 2 - PCle x8   |
| 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 Optical Diskette None (use USB port) Chipset Ethernet Two Gigabit Ethernet ports by Intel 1350, one Gigabit Ethernet port by Intel 82574L, dedicate/share management Riser card Gee 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, one RU-154 (dedicate/share mgml), one analog VGA DB-15 connector Intelligent Diagnostics Model Basic: IDM LED lights indicate failing component category (IDM) Premium: IDM Premium LED lights indicate individual failing part Systems mgmt Onbard Aspeed AST-2300 graphics/management processor, IfWI 2.0-compliant baseboard management Module Premium for iKVM functions Security chip Prerrequisites Security chip Prerrequisites Sexurity chip Security chip For Intelligent Cable management Optional cable management arm on selected models Four fans, hot-swap  Administrator password Optional cable management arm on selected models Four fans, hot-swap  Four fans, hot-swap  Administrator password  Security ThinkServer EasyStartup ThinkSe |   | 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   | PSU PSU - DD -  |
| Disk(s) 3.5" SAIX 6.0Gb/s, 7200 rpm 3.5" SAIS SAS 6.0Gb/s, 15000 rpm 3.5" SAIS SAS 6.0Gb/s, 15000 rpm 3.5" SAIS SAIS 6.0Gb/s, 15000 rpm 3.5" SAIS SAIS 6.0Gb/s, 15000 rpm 4.00 cybical DVD-RW or DVD ROM, slim None (use USB port)  Chipset Intel C606 Chipset Ethernet port by Intel I350, one Gigabit Ethernet port by Intel 82574L, dedicate/share management (See Right) Riser card 1 for slot 1-z, riser card 2 for slot 3-5 connector, two USB 2.0 search of the profit one RJ-45 (dedicate/share management one RJ-45 (dedicate/share mgmt), one analog VGA DB-15 connector one RJ-45 (dedicate/share mgmt), one analog VGA DB-15 connector one RJ-45 (dedicate/share mgmt), one analog VGA DB-15 connector libeling to make the profit of the profit one RJ-45 (dedicate/share mgmt), one analog VGA DB-15 connector libeling to make the profit of the profit one RJ-45 (dedicate/share mgmt), one analog VGA DB-15 connector libeling to make the profit of the profit one RJ-45 (dedicate/share mgmt), one analog VGA DB-15 connector libeling to make the profit of the profit one RJ-45 (dedicate/share mgmt), one analog VGA DB-15 connector libeling to make the profit one RJ-45 (dedicate/share mgmt), one analog VGA DB-15 connector libeling to make the profit one RJ-45 (dedicate/share mgmt), one analog VGA DB-15 connector libeling to make the profit of the RJ-45 (dedicate/share mgmt), one analog VGA DB-15 connector libeling to make the profit of the RJ-45 (dedicate/share mgmt), one analog VGA DB-15 connector libeling to make the profit of the RJ-45 (dedicate/share mgmt), one analog VGA DB-15 connector libeling the rate and the RJ-45 (dedicate/share mgmt), one analog VGA DB-15 connector libeling the RJ-45 (dedicate/share mgmt), one analog VGA DB-15 connector libeling the RJ-45 (dedicate/share mgmt), one analog VGA DB-15 connector libeling the RJ-45 (dedicate/share mgmt) and the R | DAID Cumport                            |   |   |
| Tape drive Optical Diskette None (use USB port) Ohipset Intel C606 Chipset Ethernet Two Gigabit Ethernet port by Intel 350, 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 Front ports One analog VGA DB-15 connector, two USB 2.0 Rear ports One RJ-45 (dedicate/share mgmt), one analog VGA DB-15 connector one RJ-45 (dedicate/share mgmt), one analog VGA DB-15 connector one RJ-45 (dedicate/share mgmt), one analog VGA DB-15 connector one RJ-45 (dedicate/share mgmt), one analog VGA DB-15 connector lintelligent Diagnostics Module (IDM) Systems mgmt Onbard Aspeed AST2300 graphics/management processor, IPML 20-compliant baseboard management module Premium for iKVM functions Security chip No onboard TPM chip: TPM: additional add-on card for TPM function, TCG 1.2-compliant SATA/SAS disk, OS None (use USB port) One or two 800 watts standard, two maximum, rear access, hot-swap. Rack kit Cable management or two 800 watts standard, two maximum, rear access, hot-swap. Rack kit Cable management or two 800 watts standard, two maximum, rear access, hot-swap. Rack kit Cable management or two 800 watts standard, two maximum, rear access, hot-swap. Rack kit Cable management or two 800 watts standard, two maximum, rear access, hot-swap. Rack kit Cable management or two 800 watts standard, two maximum, rear access, hot-swap. Rack kit Cable management or two 800 watts standard, two maximum, rear access, hot-swap. Rack kit Cable management or two 800 watts standard, two maximum, rear access, hot-swap. Rack kit Cable management or two 800 watts standard, two maximum, rear access, hot-swap. Rack kit Cable management or two 800 watts standard, two maximum, rear access, hot-swap. Rack kit Cable management or two 800 watts standard, two maximum, rear access, hot-swap. Rack kit Cable management or two 800 watts standard, two maximum, rear access, hot-swap. Rack kit Cable management or two 800 watts standard, two maximum, rear access, hot-swap. Rack kit Cable m | Disk(s)                                 |   |   |
| Optical DVD±RW or DVD ROM, slim None (use USB port)  Chipset Intel C606 Chipset Intel C606 Chipset Two Glgabit Ethernet port by Intel 3257, one Glgabit Ethernet port by Intel 32574L, 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, one serial (9-pin), two ethernet (RJ-45) one RJ-45 (dedicate/share mgmit), one analog VGA DB-15 connector intelligent Diagnostics Module Baize: IDM LED lights indicate failing component category (IDM) or IDM Premium on selected models: IDM Premium: IDM Premium intel Dights indicate individual failing part Systems mgmt Orboard Aspeed AST2300 graphics/management processor, IPMI 2.0-compliant baseboard management Controller (BMC); IVM: add-on ThinkServer Management Module Premium for iKVM functions (No noboard TPM chip; PTM: additional add-on card for TPM function, TCG 1.2-compliant SATX/SAS disk, OS SATX/SAS disk, OS Nackyboard/mouse Power supply One or two 800 watts standard, two maximum, rear access, hot-swap, 80 PLUS** Gold qualified, redundant with two power supplies Four fans, hot-swap  Rack kit Includes rack kit Cable management Optional cable management arm on selected models Four fans, hot-swap  Rack kit Includes rack kit Cable management Optional cable management arm on selected models Four fans, hot-swap  Rack kit Includes rack kit Includes rack kit Cable management Tools and the processor should be accessed by the processor  |   | 3.5" SAS: SAS 6.0Gb/s, 15000 rpm  |   |
| Ethernet Two Gigabit Ethernet ports by Intel i350, one Gigabit Ethernet port by Intel is intel is intelled in the Gigabit Ethernet port by Intel is intelled in the Gigabit Ethernet port by Intel is intelled in the Gigabit Ethernet port by Intel is intelled in the Gigabit Ethernet port by Intel is intelled in the Gigabit Ethernet port by Intel is intelled in the Gigabit Ethernet port in the Gigabit Ethernet port in Use Intelled in the Gigabit Ethernet port in Use Intelled in the Gigabit Ethernet port in Use Intelled in the Gigabit Ethernet port in the Gigabit Ethernet port in Use Intelled in the Gigabit Ethernet port in the Gigabit Ethernet port in Use Intelled in the Gigabit Ethernet  | Tape drive<br>Optical<br>Diskette       | DVD±RW or DVD ROM, slim   |   |
| intelligent Diagnostics Module Bystems mgmt Onboard Aspeed AST2300 graphics/management controller Security chip Prerequisites Reack kit Cable management Cooling  One type Aspecta for the Cooling  One type Aspecta for the Cooling  One analog WGA DB-15 connector, two USB 2.0  One analog WGA DB-15 connector  Intelligent Diagnostics Module Basic: IDM LED lights indicate failing component category (IDM) 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); IfVW: add-on ThinkServer Management Module Premium for ikVM functions  Security chip Prerequisites  Keyboard/mouse 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 Cable management Cooling  One or two 800 watts standard, two maximum, rear access, hot-swap, 80 PLUS® Gold qualified, redundant with two power supplies  Four fans, hot-swap  One or two 800 watts standard, two maximum, rear access, hot-swap, 80 PLUS® Gold qualified, redundant with two power supplies  Four fans, hot-swap  One or two 800 watts standard, two maximum, rear access, hot-swap, 80 PLUS® Gold qualified, redundant with two power supplies  Four fans, hot-swap  One or two 800 watts standard, two maximum, rear access, hot-swap, 80 PLUS® Gold qualified, redundant with two power supplies  Four fans, hot-swap  One or two 800 watts standard, two maximum, rear access, hot-swap, 80 PLUS® Gold qualified, redundant with two power supplies  Four fans, hot-swap  One or two 800 watts standard, two maximum, rear access, hot-swap, 80 PLUS® Gold qualified, redundant with two powers supplies  One or two 800 watts standard, two maximum on selected models  One or  | Chipset                                 | •   |   |
| Intelligent Supports IDM or IDM Premium on selected models; Diagnostics Module Basic: IDM LED lights indicate failing component category (IDM) 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); iKVW: 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 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  Four fans, hot-swap  - 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 (84 elec) Slot 3: Low Profile, PCI Express 3.0 x8 (x4 elec) Slot 4: half-length, full-height, PCI Express 3.0 x8 (x4 elec) Slot 4: half-length, full-height, PCI Express 3.0 x8 (x4 elec) Slot 5: half-length, full-height, PCI Express 3.0 x8 (x4 elec) Slot 5: half-length, full-height, PCI Express 3.0 x8 (x4 elec) Slot 5: half-length, full-height, PCI Express 3.0 x8 (x4 elec) Slot 5: half-length, full-height, PCI Express 3.0 x8 (x4 elec) Slot 5: half-length, full-height, PCI Express 3.0 x8 (x4 elec) Slot 5: half-length, full-height, PCI Express 3.0 x8 (x4 elec) Slot 5: half-length, full-height, PCI Express 3.0 x8 (x4 elec) Slot 5: half-length, full-height, PCI Express 3.0 x8 (x4 elec) Slot 5: half-length, full-height, PCI Express 3.0 x8 (x4 elec) Slot 5: half-length, full-height, PCI Express 3.0 x8 (x4 elec) Slot 5: half-length, full-height, PCI Express 3.0 x8 (x4 elec) Slot 5: half-length, full-height, PCI Express 3.0 x8 (x4 elec) Slot 4: half-length, full-height, PCI Express 3.0 x8 (x4 elec) Slot 4: half-length, full-height, PCI Express 3.0 x8 (x4 elec) Slot 4: half-length, f | Riser card<br>Front ports<br>Rear ports | 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), | 2U rack     19"W x 28.9"D x 3.45"H (with rack handles)  |
| Diagnostics Module (IDM) Systems mgmt Onboard Aspeed AST2300 graphics/management processor, IPMI 2.0-compliant baseboard management controller (BMC); IKVW. add-on ThinkServer Management Module Premium (EMC); IKVW. 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 One or two 800 watts standard, two maximum, rear access, hot-swap, 80 PLUS® Gold qualified, redundant with two power supplies  Bay 1 5.25", 0.5" high, external, for otisk  Expansion Slots  Slot 1: half-length, full-height, PCI Express 3.0 x16 Slot 2: half-length, full-height, PCI Express 3.0 x8 (x4 elec) Slot 4: half-length, full-height, PCI Express 3.0 x8 (x4 elec) Slot 4: half-length, full-height, PCI Express 3.0 x8 (x4 elec) Slot 4: half-length, full-height, PCI Express 3.0 x8 (x4 elec) Slot 4: half-length, full-height, PCI Express 3.0 x8 (x4 elec) Slot 4: half-length, full-height, PCI Express 3.0 x8 (x4 elec) Slot 4: half-length, full-height, PCI Express 3.0 x8 (x4 elec) Slot 4: half-length, full-height, PCI Express 3.0 x8 (x4 elec) Slot 4: half-length, full-height, PCI Express 3.0 x8 (x4 elec) Slot 4: half-length, full-height, PCI Express 3.0 x16 (x8 elec) Slot 5: half-length, full-height, PCI Express 3.0 x16 (x8 elec) Slot 5: half-length, full-height, PCI Express 3.0 x16 (x8 elec) Slot 5: half-length, full-height, PCI Express 3.0 x16 (x8 elec) Slot 4: half-length, full-height, PCI Express 3.0 x16 (x8 elec) Slot 4: half-length, full-height, PCI Express 3.0 x16 (x8 elec) Slot 4: half-length, full-height, PCI Express 3.0 x16 (x8 elec) Slot 4: half-length, full-height, PCI Express 3.0 x16 (x8 elec) Slot 4: half-length, full-height, PCI Express 3.0 x16 (x8 elec) Slot 4: half-length, full-height, PCI Express 3.0 x16 (x8 elec) Slot 4: half-length, full-height, PCI Express 3.0 x16 (x8 elec) Slot 4: half-length, full-height, PCI Express 3.0 x16 (x8 elec) Slot 4: half-length, full-height, PCI Express 3 | Intelligent                             |   |   |
| IPMI 2.0-compliant baseboard management controller (BMC);  | Diagnostics Module (IDM)                | Basic: IDM LED lights indicate failing component category Premium: IDM Premium LED lights indicate individual failing part  | Bay 1 5.25", 0.5" high, external, for optical   |
| Prerequisites Royboard/mouse Power supply Rolling Royboard/mouse Power supply Royboard/mouse Power supply Royboard/mouse Rack kit Cable management Cooling Royboard/mouse Cooling Royboard/mouse Power supply Royboard/mouse Royboard/ Royboard/mouse Royboard/ Royboard/mouse Royboard/ Roybo | , ,                                     | 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   |
| 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  |   | TPM: additional add-on card for TPM function, TCG 1.2-compliant   | Slot 3: Low Profile, PCI Express 3.0 x8 (x4 elec) Slot 4-5 are available on dual processors models:                                       |
| Rack kit Includes rack kit Cable management Cooling  Four fans, hot-swap  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  | Keyboard/mouse                          | None (use USB port)   | Slot 4: half-length, full-height, PCI Express 3.0 x16 (x8 elec) Slot 5: half-length, full-height, PCI Express 3.0 x8                      |
| Rack kit Cable management Cooling  Optional cable management arm on selected models Four fans, hot-swap  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   | rower suppry                            | 80 PLUS® Gold qualified, redundant with two power supplies  | ,   |
| ThinkServer EasyStartup     ThinkServer EasyManage     Energy Management Technology     Lenovo® SmartGrid Manager  ENERGY STAR® Server 1.1-compliant   | Rack kit<br>Cable management<br>Cooling | Optional cable management arm on selected models  | Administrator password     User password     Boot sequence control     Boot without keyboard, mouse, diskette     Serial port I/O control |
| Lenovo® SmartGrid Manager  ENERGY STAR® Server 1.1-compliant   |   |   | ThinkServer EasyStartup   |
|  |   |   | · · · · · · · · · · · · · · · · · · ·   |
|  |   |   |   |

## ThinkServer RD430 with eight 3.5" Disk Bays (3065)

| Type-<br>model | Processor(s) | Memory<br>(MHz/type) | Memory<br>DIMMs | Pre-conf<br>RAID | Disk controller | Disk(s) | Disk<br>bays | Disk<br>type | SATA optical | Intelligent<br>Diagnostics | ТРМ | System<br>mgmt | Cable mgmt | Preload<br>OS | PSU<br>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          |

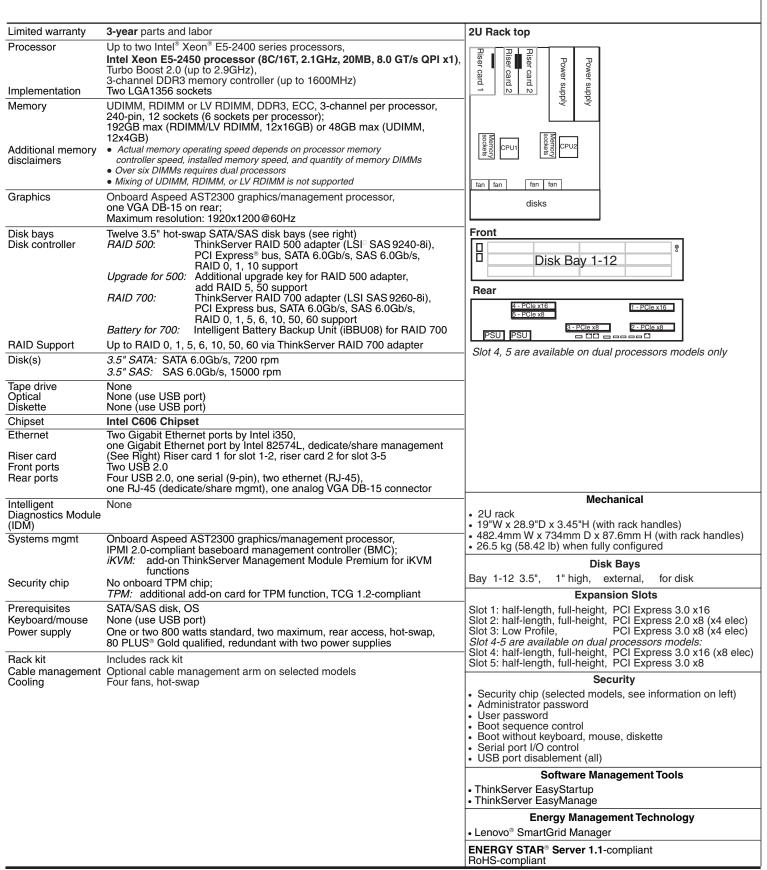
| Limited warranty                           | 3-year parts and labor  | 2U Rack top  |
|--|---|--|
| Processor  Implementation                  | Up to two Intel® Xeon® E5-2400 series processors, Intel Xeon E5-2420 processor (6C/12T, 1.9GHz, 15MB, 7.2 GT/s QPI x1), Turbo Boost 2.0 (up to 2.4GHz), 3-channel 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) Two LGA1356 sockets   | Power supply Power supply Riser card 2 Riser card 2  |
| 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)  | Memory Sockets   |
| 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   | fan fan fan optical  |
| Graphics                                   | Onboard Aspeed AST2300 graphics/management processor, one VGA DB-15 on front, one VGA DB-15 on rear; Maximum resolution: 1920x1200@60Hz   | Front  Optical   |
| Disk bays<br>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  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  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 | Rear  4-PCle x16 5-PCle x8 PSU PSU SION 4, 5 are available on dual processors models only  |
| RAID Support                               | Battery for 700: Intelligent Battery Backup Unit (iBBU08) for RAID 700 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<br>3.5" SAS: SAS 6.0Gb/s, 15000 rpm   |  |
| Tape drive<br>Optical<br>Diskette          | None<br>DVD±RW or DVD ROM, slim<br>None (use USB port)  | Machania   |
| Chipset                                    | Intel C606 Chipset  | - Mechanical   |
| 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   | 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   |
| 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  | Baý 2-9 3.5", 1" high, external, for disk  Expansion Slots   |
| 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:  | 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) |
|  | TPM: additional add-on card for TPM function, TCG 1.2-compliant   | Slot 5: half-length, full-height, PCI Express 3.0 x8  Security   |
| Prerequisites Keyboard/mouse Power supply  | SATA/SAS disk, OS<br>None (use USB port)<br>One or two 800 watts standard, two maximum, rear access, hot-swap,<br>80 PLUS® Gold qualified, redundant with two power supplies  | Security     Security chip (selected models, see information on left)     Administrator password     User password     Boot sequence control   |
| Rack kit<br>Cable management<br>Cooling    | Includes rack kit Optional cable management arm on selected models Four fans, hot-swap  | 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   |
|  |   | A Langua   |

| Type-    |              | Memory        | Memory | Pre-conf | Disk        | -       | Disk | Disk     | SATA    | Intelligent |     | System | Cable | Preload | PSU |
|----------|--------------|---------------|--------|----------|-------------|---------|------|----------|---------|-------------|-----|--------|-------|---------|-----|
| model    | Processor(s) | (MHz/type)    | DIMMs  | RAID     | controller  | Disk(s) | bays | type     | optical | Diagnostics | TPM | mgmt   | mgmt  | os      | qty |
| 3065-B6C | 1xE5-2450    | 1600MHz RDIMM | 1x16GB | No       | 700+Battery | None    | 8xHS | SATA/SAS | DVD±RW  | Premium     | TPM | iKVM   | No    | No      | 2   |

| Up to two Intel® Xeon® 15-2400 series processors. Intel Xeon Ex-5450 processor (8C/16T, 2.1GHz, 20MB, 8.0 GT/6 QPI x1), Turbo Boost 2.0 (up to 2.9GHz). The Boost 2.0 (up to 2.9GHz). The Coll 1365 society of the College of t   |   |   |   |
|--|---|---|---|
| Intel Xson E5-2450 processor (BC/16T, 2.10Hz, 20MB, 8.0 G7/s QPL x1) Implementation Implementati | Limited warranty                        |   | 2U Rack top   |
| Memory  Valdyn, 12 Action  Additional memory disclaimers  Additional memory disclaimers  Action memory genetic genetic graves processor; Action memory genetic genetic graves are processor; or valdyness of the processor of the p | Processor                               | 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)  | Power su<br>Power su<br>Riser card  |
| 240-pin. 12 sockets (6 sockets per processor).  240-pin. 12 sockets (6 sockets |   |   |   |
| disclaimers  **Owner Speaks, assistant memory, speaks, and quartiely of memory Unitins  **Alting of UDMM, ROMM, and USMDM is not supported  Onboard Aspeed A ST2300 graphics/management processor, new YGA DB-15 on frost, new | Memory                                  | 240-pin, 12 sockets (6 sockets per processor);<br>192GB max (RDIMM/LV RDIMM, 12x16GB) or 48GB max (UDIMM,<br>12x4GB)  |   |
| one VGA DB-15 on front, one VGA DB-15 on rear; Maximum resolution: 1250-1250-1260 @Gottz  Bisk bays  Eight 1,5° hot-swap SATA/SAS disk sys (see right) Onboard ThinkServer RAID 500 SATA/SAS controller, ARIA 30Gus, SAS 30Gus, RAID 300, 1, 10 support add RAID 500.  FRAID 500.  Front ThinkServer RAID 500 adapter (LSI SAS 924-8), PCI Express 5us. SATA 6.05ks, SAS 6.05ks, RAID 500.  Front Description of ThinkServer RAID 500 adapter, add RAID 1, 10 support ARID 700:  FRAID 700:  FRAID 700:  FRAID 700:  FRAID 700:  FRAID 500, FOI Express 5us. SATA 6.05ks, SAS 6.05ks, RAID 0, 1, 5, 6, 10, 50, 60 support Intelligent Battery Backup Unit (BBUs) for RAID 700 Disk(6)  3.5° SATA: SAT 6.05ks, SAD 50.05ks, SAS 6.05ks, RAID 0, 1, 5, 6, 10, 50, 60 support Tened frive Opicial  ThinkServer RAID 700 adapter Disk(6)  3.5° SATA: SAT 6.05ks, SAD 50.05ks, SAS 6.05ks, RAID 0, 1, 5, 6, 10, 50, 60 support ThinkServer RAID 700 adapter Disk(6)  3.5° SATA: SAT 6.05ks, SAD 50.05ks, SAS 6.05ks, SAS 6.05ks, RAID 0, 1, 5, 6, 10, 50, 60 support ThinkServer RAID 700 adapter Disk(6)  3.5° SATA: SAT 6.05ks, SATA 6.05ks, SAS 6.05ks, SAS 6.05ks, RAID 0, 1, 5, 6, 10, 50, 60 support Tened drive Opicial Disk(6)  3.5° SATA: SAT 6.05ks, SATA 6.05ks, SAS 6.05ks, RAID 0, 1, 5, 6, 10, 50, 60 support Tened drive Opicial Disk(6)  3.5° SATA: SAT 6.05ks, SATA 6.05ks, SAS 6.05ks, S  | Additional memory disclaimers           | controller speed, installed memory speed, and quantity of memory DIMMs  • Over six DIMMs requires dual processors   |   |
| Disk controller  AAID 300: Onboard ThinkServer RAID 300 SATA/SAS controller, SATA 3.06(bis, SAS 10.06b)s, RAID 0.1, 10 support add RAID 500: ThinkServer RAID 500 adapter (LSI SAS 220-8), RAID 0.1, 10 support AID 500 sections and RAID 700 adapter (LSI SAS 220-8), RAID 0.1, 10 support AID 700 adapter (LSI SAS 220-8), RAID 0.1, 10 support Disk (SAS 230-8), POI Express bus, SATA 6.0Gb/s, SAS 0.06b/s, SAS 0.06 | Graphics                                | one VGA DB-15 on front, one VGA DB-15 on rear;  |   |
| HAID 500. ThinkServer RAÍD 500 adapter (LSI SAS 9240-8), PCI Express² bus, SATA 6.00b/s, SAS 6.0db/s, RAID 0, 1, 10 support  ### PAID 700: Touris Server RAID 700 adapter (LSI SAS 9260-8), PCI Express bus, SATA 6.00b/s, SAS 6.0db/s, RAID 0, 1, 5, 6, 10, 50, 60 support  ### PAID 700: Intelligent Battery Backup Unit (IBBUD8) for RAID 700  ### PAID 500 (RAID 0, 1, 5, 6, 10, 50, 60 via ThinkServer RAID 700 adapter (LSI SAS 9260-8)), PCI Express bus, SATA 6.00b/s, SAS 6.0db/s, RAID 0, 1, 5, 6, 10, 50, 60 via ThinkServer RAID 700 adapter (Disks)  ### PAID 500 (Point Server RAID 700 adapter (Disks)  ### PAID 500 (P  | Disk bays<br>Disk controller            | AAID 300: Onboard ThinkServer AAID 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,  | ®∘□□□ :::: optical  |
| Bull   Comparison   Compariso   |   | RAID 500: ThinkServer RAID 500 adapter (LSI SAS 9240-8i), PCI Express® bus, SATA 6.0Gb/s, SAS 6.0Gb/s,  | 4 - PCle x16 1 - PCle x16   |
| RAID Support  Battery for 700: Intelligent Battery Backbuy Unit (BBBU08) for RAID 700  RAID Support  Up to RAID 0, 1, 5, 6, 10, 50, 60 support Battery for 700: Intelligent Battery Backbuy Unit (BBBU08) for RAID 700  RAID Support  Up to RAID 0, 1, 5, 6, 10, 50, 60 support Battery Backbuy Unit (BBBU08) for RAID 700  RAID Support  Up to RAID 0, 1, 5, 6, 10, 50, 60 via ThinkServer RAID 700 adapter  3.5° SAT3: SAT4 SAT4 6, OGDbs, 7200 rpm  3.5° SAT5: SAT6 6, OGDbs, 15000 rpm  Tape drive Optical  DVD-IFW or DVD ROM, slim None (use USB port)  Intel C606 Chipset  Eithernet  Two Gigabit Ethernet port by Intel 350, one Gigabit Ethernet port by Inte |   | Upgrade for 500: Additional upgrade key for RAID 500 adapter.   | 3 - PCle x8 2 - PCle x8   |
| 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 Optical Diskette None (use USB port) Chipset Ethernet Two Gigabit Ethernet ports by Intel 1350, one Gigabit Ethernet port by Intel 82574L, dedicate/share management Riser card Gee 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, one RU-154 (dedicate/share mgml), one analog VGA DB-15 connector Intelligent Diagnostics Model Basic: IDM LED lights indicate failing component category (IDM) Premium: IDM Premium LED lights indicate individual failing part Systems mgmt Onbard Aspeed AST-2300 graphics/management processor, IfWI 2.0-compliant baseboard management Module Premium for iKVM functions Security chip Prerrequisites Security chip Prerrequisites Sexurity chip Security chip For Intelligent Cable management Optional cable management arm on selected models Four fans, hot-swap  Administrator password Optional cable management arm on selected models Four fans, hot-swap  Four fans, hot-swap  Administrator password  Security ThinkServer EasyStartup ThinkSe |   | 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   | PSU PSU - DD -  |
| Disk(s) 3.5" SAIX 6.0Gb/s, 7200 rpm 3.5" SAIS SAS 6.0Gb/s, 15000 rpm 3.5" SAIS SAS 6.0Gb/s, 15000 rpm 3.5" SAIS SAIS 6.0Gb/s, 15000 rpm 3.5" SAIS SAIS 6.0Gb/s, 15000 rpm 4.00 cybical DVD-RW or DVD ROM, slim None (use USB port)  Chipset Intel C606 Chipset Ethernet port by Intel I350, one Gigabit Ethernet port by Intel 82574L, dedicate/share management (See Right) Riser card 1 for slot 1-z, riser card 2 for slot 3-5 connector, two USB 2.0 search of the profit one RJ-45 (dedicate/share management one RJ-45 (dedicate/share mgmt), one analog VGA DB-15 connector one RJ-45 (dedicate/share mgmt), one analog VGA DB-15 connector one RJ-45 (dedicate/share mgmt), one analog VGA DB-15 connector libeling to make the profit of the profit one RJ-45 (dedicate/share mgmt), one analog VGA DB-15 connector libeling to make the profit of the profit one RJ-45 (dedicate/share mgmt), one analog VGA DB-15 connector libeling to make the profit of the profit one RJ-45 (dedicate/share mgmt), one analog VGA DB-15 connector libeling to make the profit of the profit one RJ-45 (dedicate/share mgmt), one analog VGA DB-15 connector libeling to make the profit one RJ-45 (dedicate/share mgmt), one analog VGA DB-15 connector libeling to make the profit one RJ-45 (dedicate/share mgmt), one analog VGA DB-15 connector libeling to make the profit of the RJ-45 (dedicate/share mgmt), one analog VGA DB-15 connector libeling to make the profit of the RJ-45 (dedicate/share mgmt), one analog VGA DB-15 connector libeling to make the profit of the RJ-45 (dedicate/share mgmt), one analog VGA DB-15 connector libeling the rate and the RJ-45 (dedicate/share mgmt), one analog VGA DB-15 connector libeling the RJ-45 (dedicate/share mgmt), one analog VGA DB-15 connector libeling the RJ-45 (dedicate/share mgmt), one analog VGA DB-15 connector libeling the RJ-45 (dedicate/share mgmt) and the R | DAID Cumport                            |   |   |
| Tape drive Optical Diskette None (use USB port) Ohipset Intel C606 Chipset Ethernet Two Gigabit Ethernet port by Intel 350, 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 Front ports One analog VGA DB-15 connector, two USB 2.0 Rear ports One RJ-45 (dedicate/share mgmt), one analog VGA DB-15 connector one RJ-45 (dedicate/share mgmt), one analog VGA DB-15 connector one RJ-45 (dedicate/share mgmt), one analog VGA DB-15 connector one RJ-45 (dedicate/share mgmt), one analog VGA DB-15 connector lintelligent Diagnostics Module (IDM) Systems mgmt Onbard Aspeed AST2300 graphics/management processor, IPML 20-compliant baseboard management module Premium for iKVM functions Security chip No onboard TPM chip: TPM: additional add-on card for TPM function, TCG 1.2-compliant SATA/SAS disk, OS None (use USB port) One or two 800 watts standard, two maximum, rear access, hot-swap. Rack kit Cable management or two 800 watts standard, two maximum, rear access, hot-swap. Rack kit Cable management or two 800 watts standard, two maximum, rear access, hot-swap. Rack kit Cable management or two 800 watts standard, two maximum, rear access, hot-swap. Rack kit Cable management or two 800 watts standard, two maximum, rear access, hot-swap. Rack kit Cable management or two 800 watts standard, two maximum, rear access, hot-swap. Rack kit Cable management or two 800 watts standard, two maximum, rear access, hot-swap. Rack kit Cable management or two 800 watts standard, two maximum, rear access, hot-swap. Rack kit Cable management or two 800 watts standard, two maximum, rear access, hot-swap. Rack kit Cable management or two 800 watts standard, two maximum, rear access, hot-swap. Rack kit Cable management or two 800 watts standard, two maximum, rear access, hot-swap. Rack kit Cable management or two 800 watts standard, two maximum, rear access, hot-swap. Rack kit Cable management or two 800 watts standard, two maximum, rear access, hot-swap. Rack kit Cable m | Disk(s)                                 |   |   |
| Optical DVD±RW or DVD ROM, slim None (use USB port)  Chipset Intel C606 Chipset Intel C606 Chipset Two Glgabit Ethernet port by Intel 3257, one Glgabit Ethernet port by Intel 32574L, 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, one serial (9-pin), two ethernet (RJ-45) one RJ-45 (dedicate/share mgmit), one analog VGA DB-15 connector intelligent Diagnostics Module Baize: IDM LED lights indicate failing component category (IDM) or IDM Premium on selected models: IDM Premium: IDM Premium intel Dights indicate individual failing part Systems mgmt Orboard Aspeed AST2300 graphics/management processor, IPMI 2.0-compliant baseboard management Controller (BMC); IVM: add-on ThinkServer Management Module Premium for iKVM functions (No noboard TPM chip; PTM: additional add-on card for TPM function, TCG 1.2-compliant SATX/SAS disk, OS SATX/SAS disk, OS Nackyboard/mouse Power supply One or two 800 watts standard, two maximum, rear access, hot-swap, 80 PLUS** Gold qualified, redundant with two power supplies Four fans, hot-swap  Rack kit Includes rack kit Cable management Optional cable management arm on selected models Four fans, hot-swap  Rack kit Includes rack kit Cable management Optional cable management arm on selected models Four fans, hot-swap  Rack kit Includes rack kit Includes rack kit Cable management Tools and the processor should be accessed by the processor  |   | 3.5" SAS: SAS 6.0Gb/s, 15000 rpm  |   |
| Ethernet Two Gigabit Ethernet ports by Intel i350, one Gigabit Ethernet port by Intel is intel is intelled in the Gigabit Ethernet port by Intel is intelled in the Gigabit Ethernet port by Intel is intelled in the Gigabit Ethernet port by Intel is intelled in the Gigabit Ethernet port by Intel is intelled in the Gigabit Ethernet port by Intel is intelled in the Gigabit Ethernet port in the Gigabit Ethernet port in Use Intelled in the Gigabit Ethernet port in Use Intelled in the Gigabit Ethernet port in Use Intelled in the Gigabit Ethernet port in the Gigabit Ethernet port in Use Intelled in the Gigabit Ethernet port in the Gigabit Ethernet port in Use Intelled in the Gigabit Ethernet  | Tape drive<br>Optical<br>Diskette       | DVD±RW or DVD ROM, slim   |   |
| intelligent Diagnostics Module Bystems mgmt Onboard Aspeed AST2300 graphics/management controller Security chip Prerequisites Reack kit Cable management Cooling  One type Aspecta for the Cooling  One type Aspecta for the Cooling  One analog WGA DB-15 connector, two USB 2.0  One analog WGA DB-15 connector  Intelligent Diagnostics Module Basic: IDM LED lights indicate failing component category (IDM) 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); IfVW: add-on ThinkServer Management Module Premium for ikVM functions  Security chip Prerequisites  Keyboard/mouse 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 Cable management Cooling  One or two 800 watts standard, two maximum, rear access, hot-swap, 80 PLUS® Gold qualified, redundant with two power supplies  Four fans, hot-swap  One or two 800 watts standard, two maximum, rear access, hot-swap, 80 PLUS® Gold qualified, redundant with two power supplies  Four fans, hot-swap  One or two 800 watts standard, two maximum, rear access, hot-swap, 80 PLUS® Gold qualified, redundant with two power supplies  Four fans, hot-swap  One or two 800 watts standard, two maximum, rear access, hot-swap, 80 PLUS® Gold qualified, redundant with two power supplies  Four fans, hot-swap  One or two 800 watts standard, two maximum, rear access, hot-swap, 80 PLUS® Gold qualified, redundant with two power supplies  Four fans, hot-swap  One or two 800 watts standard, two maximum, rear access, hot-swap, 80 PLUS® Gold qualified, redundant with two powers supplies  One or two 800 watts standard, two maximum on selected models  One or  | Chipset                                 | •   |   |
| Intelligent Supports IDM or IDM Premium on selected models; Diagnostics Module Basic: IDM LED lights indicate failing component category (IDM) 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); iKVW: 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 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  Four fans, hot-swap  - 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 (84 elec) Slot 3: Low Profile, PCI Express 3.0 x8 (x4 elec) Slot 4: half-length, full-height, PCI Express 3.0 x8 (x4 elec) Slot 4: half-length, full-height, PCI Express 3.0 x8 (x4 elec) Slot 5: half-length, full-height, PCI Express 3.0 x8 (x4 elec) Slot 5: half-length, full-height, PCI Express 3.0 x8 (x4 elec) Slot 5: half-length, full-height, PCI Express 3.0 x8 (x4 elec) Slot 5: half-length, full-height, PCI Express 3.0 x8 (x4 elec) Slot 5: half-length, full-height, PCI Express 3.0 x8 (x4 elec) Slot 5: half-length, full-height, PCI Express 3.0 x8 (x4 elec) Slot 5: half-length, full-height, PCI Express 3.0 x8 (x4 elec) Slot 5: half-length, full-height, PCI Express 3.0 x8 (x4 elec) Slot 5: half-length, full-height, PCI Express 3.0 x8 (x4 elec) Slot 5: half-length, full-height, PCI Express 3.0 x8 (x4 elec) Slot 5: half-length, full-height, PCI Express 3.0 x8 (x4 elec) Slot 5: half-length, full-height, PCI Express 3.0 x8 (x4 elec) Slot 4: half-length, full-height, PCI Express 3.0 x8 (x4 elec) Slot 4: half-length, full-height, PCI Express 3.0 x8 (x4 elec) Slot 4: half-length, f | Riser card<br>Front ports<br>Rear ports | 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), | 2U rack     19"W x 28.9"D x 3.45"H (with rack handles)  |
| Diagnostics Module (IDM) Systems mgmt Onboard Aspeed AST2300 graphics/management processor, IPMI 2.0-compliant baseboard management controller (BMC); IKVW. add-on ThinkServer Management Module Premium (EMC); IKVW. 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 One or two 800 watts standard, two maximum, rear access, hot-swap, 80 PLUS® Gold qualified, redundant with two power supplies  Bay 1 5.25", 0.5" high, external, for otisk  Expansion Slots  Slot 1: half-length, full-height, PCI Express 3.0 x16 Slot 2: half-length, full-height, PCI Express 3.0 x8 (x4 elec) Slot 4: half-length, full-height, PCI Express 3.0 x8 (x4 elec) Slot 4: half-length, full-height, PCI Express 3.0 x8 (x4 elec) Slot 4: half-length, full-height, PCI Express 3.0 x8 (x4 elec) Slot 4: half-length, full-height, PCI Express 3.0 x8 (x4 elec) Slot 4: half-length, full-height, PCI Express 3.0 x8 (x4 elec) Slot 4: half-length, full-height, PCI Express 3.0 x8 (x4 elec) Slot 4: half-length, full-height, PCI Express 3.0 x8 (x4 elec) Slot 4: half-length, full-height, PCI Express 3.0 x8 (x4 elec) Slot 4: half-length, full-height, PCI Express 3.0 x16 (x8 elec) Slot 5: half-length, full-height, PCI Express 3.0 x16 (x8 elec) Slot 5: half-length, full-height, PCI Express 3.0 x16 (x8 elec) Slot 5: half-length, full-height, PCI Express 3.0 x16 (x8 elec) Slot 4: half-length, full-height, PCI Express 3.0 x16 (x8 elec) Slot 4: half-length, full-height, PCI Express 3.0 x16 (x8 elec) Slot 4: half-length, full-height, PCI Express 3.0 x16 (x8 elec) Slot 4: half-length, full-height, PCI Express 3.0 x16 (x8 elec) Slot 4: half-length, full-height, PCI Express 3.0 x16 (x8 elec) Slot 4: half-length, full-height, PCI Express 3.0 x16 (x8 elec) Slot 4: half-length, full-height, PCI Express 3.0 x16 (x8 elec) Slot 4: half-length, full-height, PCI Express 3.0 x16 (x8 elec) Slot 4: half-length, full-height, PCI Express 3 | Intelligent                             |   |   |
| IPMI 2.0-compliant baseboard management controller (BMC);  | Diagnostics Module (IDM)                | Basic: IDM LED lights indicate failing component category Premium: IDM Premium LED lights indicate individual failing part  | Bay 1 5.25", 0.5" high, external, for optical   |
| Prerequisites Royboard/mouse Power supply Rolling Royboard/mouse Power supply Royboard/mouse Power supply Royboard/mouse Rack kit Cable management Cooling Royboard/mouse Cooling Royboard/mouse Power supply Royboard/mouse Royboard/ Royboard/mouse Royboard/ Royboard/mouse Royboard/ Roybo | , ,                                     | 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   |
| 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  |   | TPM: additional add-on card for TPM function, TCG 1.2-compliant   | Slot 3: Low Profile, PCI Express 3.0 x8 (x4 elec) Slot 4-5 are available on dual processors models:                                       |
| Rack kit Includes rack kit Cable management Cooling  Four fans, hot-swap  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  | Keyboard/mouse                          | None (use USB port)   | Slot 4: half-length, full-height, PCI Express 3.0 x16 (x8 elec) Slot 5: half-length, full-height, PCI Express 3.0 x8                      |
| Rack kit Cable management Cooling  Optional cable management arm on selected models Four fans, hot-swap  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   | rower suppry                            | 80 PLUS® Gold qualified, redundant with two power supplies  | ,   |
| ThinkServer EasyStartup     ThinkServer EasyManage     Energy Management Technology     Lenovo® SmartGrid Manager  ENERGY STAR® Server 1.1-compliant   | Rack kit<br>Cable management<br>Cooling | Optional cable management arm on selected models  | Administrator password     User password     Boot sequence control     Boot without keyboard, mouse, diskette     Serial port I/O control |
| Lenovo® SmartGrid Manager  ENERGY STAR® Server 1.1-compliant   |   |   | ThinkServer EasyStartup   |
|  |   |   | · · · · · · · · · · · · · · · · · · ·   |
|  |   |   |   |

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

| Туре-           | Memory          | Memory  | Pre-conf | Disk        |         | Disk  | Disk     | SATA    | Intelligent |     | System | Cable | Preload | PSU |
|-----------------|-----------------|---------|----------|-------------|---------|-------|----------|---------|-------------|-----|--------|-------|---------|-----|
| model Process   | r(s) (MHz/type) | DIMMs   | RAID     | controller  | Disk(s) | bays  | type     | optical | Diagnostics | TPM | mgmt   | mgmt  | os      | qty |
| 3059-F4G 2xE5-2 | 50 1333MHz RDIM | M 2x8GB | No       | 700+Battery | None    | 12xHS | SATA/SAS | No      | No          | TPM | iKVM   | No    | No      | 2   |



Product Specifications Reference (PSREF)

| Туре   | -            | Memory        | Memory |      | Disk        |         | Disk  | Disk     | SATA    | Intelligent |     | System | Cable | Preload | PSU |
|--------|--------------|---------------|--------|------|-------------|---------|-------|----------|---------|-------------|-----|--------|-------|---------|-----|
| mod    |              | (MHz/type)    | DIMMs  | RAID | controller  | Disk(s) | bays  | type     | optical | Diagnostics | TPM | mgmt   | mgmt  | os      | qty |
| 3059-F | 5G 2xE5-2450 | 1600MHz RDIMM | 2x8GB  | No   | 700+Battery | None    | 12xHS | SATA/SAS | No      | No          | TPM | iKVM   | No    | No      | 2   |

