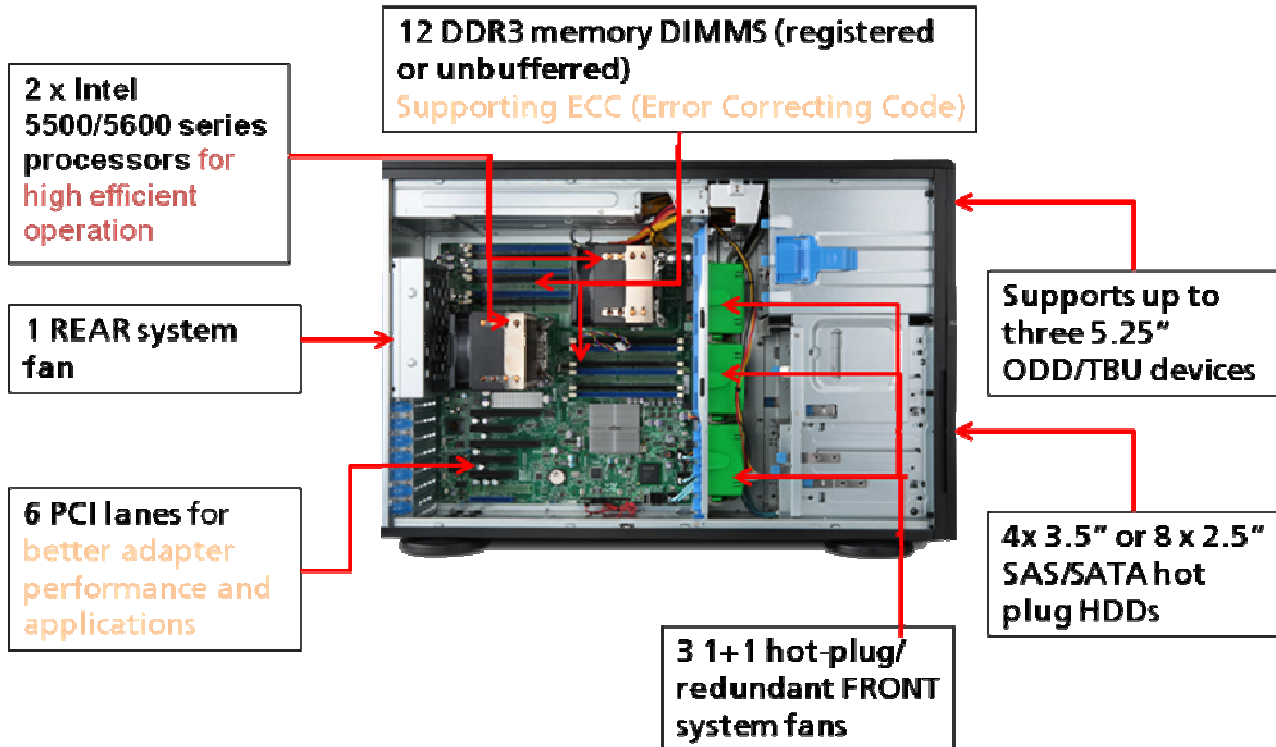


## GT150 F1 specifications

### Product overview

The Gateway GT150 F1 is solid tower or 4U rack mountable dual-socket server featuring powerful computing and limited expandability. With up to 2 Intel Xeon 5600/5500 series processors, 12 DIMMs of memory and a choice of 4 3.5" or 8 2.5" HDDs, this server offers everything you need and nothing you don't.

### Internal view

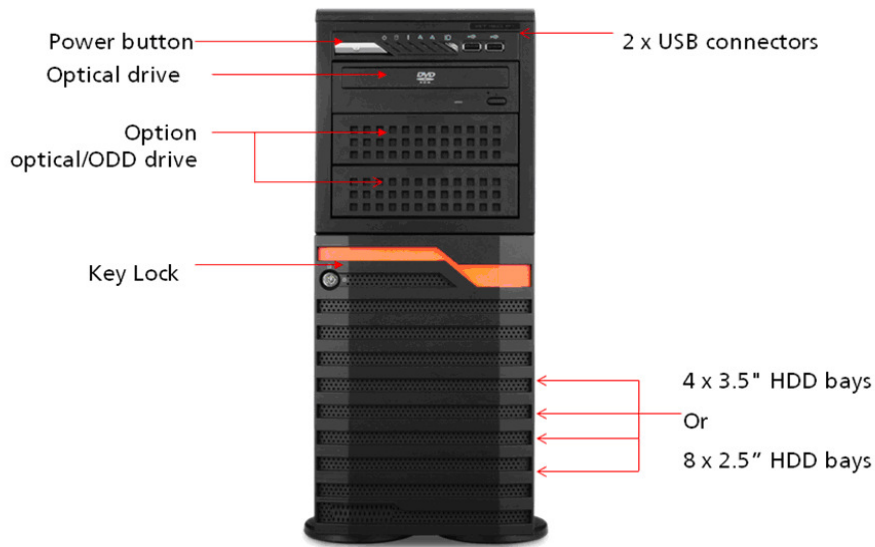


- 1 1 x 560 W 80 PLUS® gold-level efficient fixed power supplies
- 2 2 x Intel® Xeon® X5600 series processors
- 3 12 x DDR3 ECC registered / unbuffered DIMMs
- 4 N+1 redundant cooling fans (internal), and 1 rear cooling fan (rear)
- 5 6 x PCIe expansion slots
- 6 3 x 5.25" media expansion bay
- 8 8 x 2.5" hot-swappable hard drive bays or  
4 x 3.5" hot-swappable hard drive bays

**Note:** Availability may vary by region

## GT150 F1 specifications

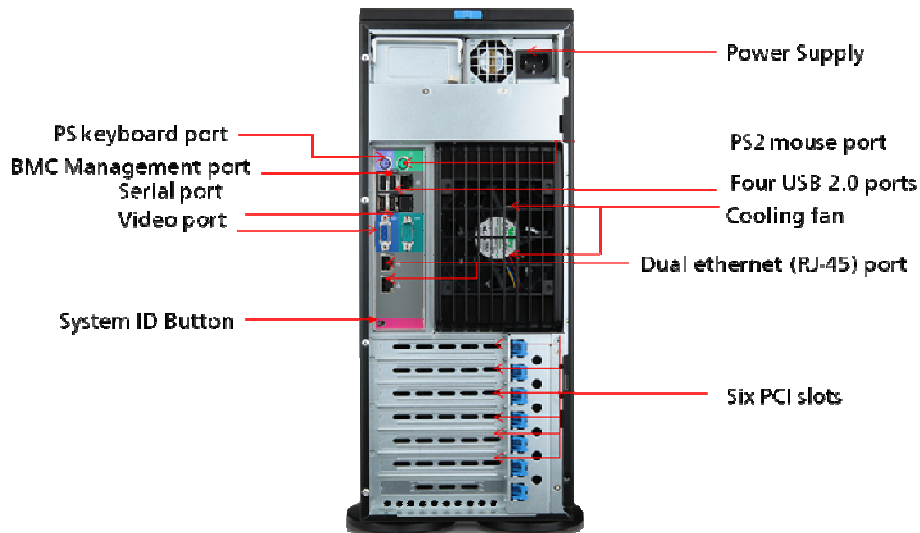
### Front View



### 4U Rackmount View



### Rear View



#### Front I/O

- 1 2 x USB ports
- 2 ID LED button
- 3 Network, hard drive and power status indicators

#### Rear I/O

- 1 PS2 mouse and keyboard ports

## GT150 F1 specifications

- 2 4 x USB ports
- 3 2 x Gigabit LAN port (RJ-45)
- 4 Video port
- 5 Serial port
- 6 System ID LED
- 7 Management port (RJ-45)

### What's New

- New Intel® Xeon® 5600 Series processors  
Intel Xeon X5675, X5672, E5649, E5645, E5607, E5606, E5603
- Fixed power supply with 80 PLUS® gold-level efficiency
- Smart Server Manager v1.1 with improved management functionality

### Product Specifications

#### Processors and Chipset

- Up to two Intel® Xeon® 5500/5600 series processors
- Chipset: Intel® 5520

#### Memory

- Memory capacity:
  - Registered DIMM: 1, 2, 4, 8, 16 GB
  - Unbuffered DIMM: 1, 2, 4 GB
- Maximum capacity: up to 192 GB registered DIMMs when fully populated with 2 DIMMs per channel in 12 slots
- Maximum capacity: up to 48 GB unbuffered DIMMs when fully populated with 2 DIMMs per channel in 12 slots

#### Network Controllers

- Integrated dual-port Intel® 82576EB Gigabit Ethernet Controller (2 ports total)

#### Storage

- Hard disk form factor: 2.5" or 3.5"
- Type: SAS / SATA / SSD with hot-plug capability
- 3.5" Maximum capacity:
  - Up to 8 TB SATA HDD (2 TB 3.5" x 4 HDDs)
  - Up to 2.4 TB SAS (600 GB 3.5" x 4 HDDs)
- 2.5" Maximum capacity:
  - Up to 8 TB SATA HDD (1 TB 2.5" x 8 HDDs)
  - Up to 9.6 TB SAS (600 GB 2.5" x 8 HDDs)

#### Storage Controllers

- Integrated Intel® ICH10R Serial ATA host controller (six 3 Gb/s SATA ports) with software RAID 0, 1, 5, 10 support
- Optional PCIe 4-/8-port SAS RAID card

#### Expansion slots

- 2 x PCIe® 2.0 x8 (x 16 connector)
- 2 x PCIe® 2.0 x4 (x8 connector)
- 1 x PCIe® 1.0 x4 (x8 connector)
- 1 x Flex I/O (PCIe® x8)

## GT150 F1 specifications

### Management

- Gateway Smart Server Manager
- System ID LED buttons, System Health LED
- Gateway Smart Console for server management and KVM over IP remote management

### Deployment/Serviceability

- Gateway Smart Setup
- BIOS Update Tool
- IPMI Firmware Update Tool

### Operating Systems

- Windows Server® 2008
- Windows Server 2008 R2
- Windows Server 2003
- Red Hat Enterprise Linux 5.4
- SuSE Linux Enterprise Server 11
- VMware ESXi™ 4
- VMware ESX™ 4

### Input/output interface

#### Front

- One Power/off button
- LED indicators: power, HDD activity, LAN port 1 through 2, ID, and System status

#### Rear

- PS2 keyboard port
- PS2 mouse port
- 4 x USB 2.0 ports
- BMC Management port
- Serial port
- Video port
- 2 x Gigabit port
- ID LED

### Optical drive

- 5.25" SATA DVD Super multi
- 5.25" tape drive

### Chassis/Form Factor

- Tower/ 4U rack mountable

### Power Supply

- 1 x 560 W 80 PLUS® gold-level efficient, fixed power supply

### Regulatory Compliant Standards

#### EMC

- FCC (Class A)
- CE (Class A)
- BSMI (Class A)

## GT150 F1 specifications

### Safety

- UL/cUL
- CB

Nemko/GS

### Environmental Specifications

Dimensions	434 (H) x 648 (D) x 178 (W) mm (17.2 x 25.5 x 7 inches)	
Weight	Maximum	39 kg (88.1 lbs)
	Minimum (includes a single HDD, CPU and RAM, and PSU)	28.5 kg (62.8 lbs)
System inlet temperature	Operating	10° - 35° C (50° - 95° F)
	Non-operating	-40° - 70° C (-40° - 158° F)
Relative humidity	Operating	8 - 90 %
	Non-operating	5 - 95 %
Acoustics	Idle	
	LWAd	6.2 BA
	LpAm	43.6 dBA
	Operating	
	LWAd	6.0 BA
	LpAm	43.9 dBA
Power	Rated Steady –state power	560 W
	Maximum Peak Power	600 W
	BTU rating	1910 BTU/hr at 100 - 240 VAC

## GT150 F1 specifications

### Technical specifications

#### PCIe® specifications

The primary I/O bus for the main board is PCIe Gen2. The following table lists the characteristics of the PCI-E bus segments. Details about each bus segment follow the table.

**NOTE:** The signaling bit rate of PCI Express is 2.5Gbit/s one direction per lane for Gen 1 and 5.0Gbit/s one direction per lane for Gen 2.

Expansion slot	Number	Type	Bus width <sup>1</sup>	Voltage	Connector	Location	Length
PCIe x16	2	PCIe Gen2	x8	3.3V	x16	Onboard	Full height
PCIe x8	2	PCIe Gen2	x4	3.3V	x8	Onboard	Full height
PCIe x8	1	PCIe Gen1	x4	3.3V	x8	Onboard	Full height
Flex I/O	1	PCIe Gen2	x8	3.3V	x8	Onboard	Full height

**NOTE:**

1. Indicates the number of physical electrical lanes running to a PCIe® connector.
2. Default bus assignment (in decimal). Inserting cards with PCI™ bridges may alter the actual bus assignment number.
3. Slots are enumerated differently based on the operating system. Microsoft® operating systems enumerate Device ID by bus starting from the lowest bus to the highest.

#### Onboard storage specifications

Item	Description
Controller	Intel® 82801JR (ICH10R) I/O Controller Hub
Simultaneous drive transfer channels	6 onboard SATA ports
Max throughput per channel	3 Gb/s
Data transfer method	<ul style="list-style-type: none"> <li>• Non-RAID mode</li> <li>• RAID mode</li> </ul>
Drive type supported	Serial ATA
RAID levels support	<ul style="list-style-type: none"> <li>• RAID 0, 1, 10, 5 (Intel software RAID)</li> <li>• RAID 0, 1, 10 (Adaptec software RAID)</li> </ul>
RAID function support	<p><b>NOTE:</b> Intel software RAID only supports Windows OS</p> <ul style="list-style-type: none"> <li>• Supports multiple logical volumes</li> <li>• Setup through ROM based Array Configuration Utility</li> </ul> <p>Installation scripting support</p>
RAID OS support	<p><b>NOTE:</b> This controller does not support LED functions</p> <ul style="list-style-type: none"> <li>• Windows Server 2008</li> <li>• Windows Server 2008 R2</li> <li>• Windows Server 2003</li> <li>• Red Hat Enterprise Linux 5.4</li> <li>• SuSE Linux Enterprise Server 11</li> </ul>

## GT150 F1 specifications

### Additional features

- NCQ (Native Command Queuing)
- AHCI (Advanced Host Controller Interface)

### Onboard LAN specifications

Item	Description
Controller	Intel® 82576EB Gigabit Ethernet Controller (2 ports total)
Network interface	10Base-T / 100Base-TX / 1000Base-T
Compatibility standards	<ul style="list-style-type: none"> <li>• IEEE 802.3 Ethernet interface for 10BASE-T</li> <li>• IEEE 802.3ab Ethernet interface for 1000BASE-T,</li> <li>• IEEE 802.3u Ethernet interface for 100BASE-TX</li> </ul>
Manageability	<ul style="list-style-type: none"> <li>• NC-SI, SMBus</li> <li>• PXE, iSCSI boot</li> </ul>
Virtualization acceleration	<ul style="list-style-type: none"> <li>• Intel® I/O Acceleration Technology</li> <li>• Virtual Machine Device Queues (VMDq)</li> <li>• PCI-SIG SR-IOV implementation</li> </ul>
Connector	RJ-45
Supported cable type	CAT 5e wire

### Memory specifications and population

Item	Description
Supported memory types	<ul style="list-style-type: none"> <li>• Registered DDR3 1066 / 1333 MHz</li> <li>• Unbuffered DDR3 1066 / 1333 MHz</li> </ul> <p><b>NOTE:</b> Gateway does not qualify mixed memory configurations of memory type, capacity or make.</p>
Population	<p>Gateway's validated memory populations are listed below.</p> <p><b>NOTE:</b> Support for 8 / 16 GB DIMMs may vary by regional availability.</p>

#### Single processor configuration guide

**NOTE:** Quad Rank DIMMs and Unbuffered DIMMs can only use a maximum of 6 slots

DIMM #	DIMM 1B	DIMM 1A	DIMM 2B	DIMM2A	DIMM3B	DIMM3A
1		X				
2		X		X		
3		X		X		X
4	X	X	X	X		
6	X	X	X	X	X	X

## GT150 F1 specifications

### Dual processor configuration guide

**NOTE:** Quad Rank DIMMs and Unbuffered DIMMs can only use a maximum of 6 slots per CPU (12 slots total)

DIMM #	CPU 1						CPU 2					
	1B	1A	2B	2A	3B	3A	1B	1A	2B	2A	3B	3A
2		X						X				
3		X		X		X						
4		X		X				X		X		
6		X		X		X		X		X		X
8	X	X	X	X			X	X	X	X		
9	X	X	X	X	X	X		X		X		X
12	X	X	X	X	X	X	X	X	X	X	X	X

\* support depends on 8GB/16GB DIMM available

### Mirroring mode:

- For mirroring mode, the memory contains a primary image and a copy of the primary image. Therefore, the effective size of memory is reduced by at least one-half.
- Follow the population rules described in independent mode.
- Mirroring mode needs the channel 1 & channel 2 with identical DIMM. DIMM slot populations within a channel do not have to be identical but the same DIMM slot location across channel 1 and channel 2 must be the same. DIMM1A and DIMM2A should be the same type, size and manufacturer. DIMM1B and DIMM2B memory should be the same type, size and manufacturer.
- Same rule is applied to the CPU2.
- Please refer to the User Guide for complete population for both single and dual processor configurations.

### Lockstep mode:

- In Lockstep Channel Mode, each memory access is a 128-bit data access that spans Channel 1 and Channel 2. This is done to support SDDC for DRAM devices with 8-bit wide data ports. The same address is used on both channels such that an address error on any channel is detectable by bad ECC. Lockstep Channel mode is the only RAS mode that supports x8 SDDC.
- Follow the population rules described in independent mode.
- Lockstep mode needs the channel 1 & channel 2 with identical DIMM. DIMM slot populations within a channel do not have to be identical but the same DIMM slot location across channel 1 and channel 2 must be the same. DIMM1A and DIMM2A should be the same type, size and manufacturer. DIMM1B and DIMM2B memory should be the same type, size and manufacturer.
- Same rule is applied to the CPU2.
- Please refer to the User Guide for complete population for both single and dual processor configurations.



## GT150 F1 specifications

### Sparing mode:

- In this mode, if system detects degrading memory and system still not crash, the data in failed channel will be copied to spare channel. Failed channel is then isolated and spare channel becomes active. But if any uncorrectable error happens before the isolation, it will still cause the system stop normal operation.
- Follow the population rules described in independent mode.
- Sparing mode need all three channels with identical DIMMs. 1A, 2A and 3A should be the same type, size and manufacturer. 1B, 2B and 3B memory should be the same type, size and manufacturer. Same rule is applied to CPU2.
- Memory sparing mode is only supported by Intel Xeon 5600 series processor. Intel Xeon 5500 series processor **does NOT support the memory sparing mode**.
- Please refer to the User Guide for complete population for both single and dual processor configurations.

### Memory Identification

Generally, there are some memory information printed on the label of DIMM, but different vendor may have different format. For example:

4GB 2Rx4 PC3-10600R xx xx xxx

#### 1. Density

- 1GB, 2GB, 4GB, 8GB, 16GB

#### 2. Rank

- 1R = Single Rank
- 2R = Dual Rank
- 4R = Quad Rank
- Note: if any quad rank DIMM is used, maximum only 2 DIMM per channel can be supported

#### 3. Bit Organization

- This platform supports x4 and x8
- Note: It's not recommend to mix DIMM with different bit organization in one system

#### 4. Speed

- PC3 – 6400 => DDR3- 800
- PC3 – 8500 => DDR3- 1066
- PC3 – 10600 => DDR3- 1333

## GT150 F1 specifications

### Power specifications

#### 560W Power Supply

Operational Input Voltage Range (Vrms) 100 to 240

Frequency Range (Nominal) (Hz) 60/50

	100	120	208	200	220	230	240
Nominal Input Voltage (Vrms)	100	120	208	200	220	230	240
Max. Rated Output Wattage (Watts)	560	560	600	600	600	600	600
Nominal Input Current (A rms)	6.5	6.5	3.5	3.5	3.5	3.5	3.5
Max. Rated Input Wattage Rating (Watts)	670	650	690	690	690	680	680
Max. Rated VA (Volt-Amp)	677	657	719	719	719	709	709
Efficiency (%) at Max. Rated Output Wattage	84	87	87	87	87	89	89
Power Factor	0.99	0.99	0.96	0.96	0.96	0.96	0.96
Leakage Current (mA)	0.5	0.5	1.0	1.0	1.0	1.0	1.0
Max. Inrush Current (A peak)	Less than 30A	Less than 30A	Less than 30A	Less than 30A	Less than 30A	Less than 30A	Less than 30A
Max. Inrush Current Duration (mS)	3.5	3.5	2.5	2.5	2.5	2.5	2.5
Max. British Thermal Unit Rating (BTU/hr)	2285	2285	2353	2353	2353	2319	2319

## GT150 F1 specifications

### Gateway server software utilities

- Smart Setup 2.0      Easy deployment via the latest version of Gateway's Smart Setup. Smart Setup is available both in box as a driver packed installation DVD or a downloadable file to be put into a USB 2.0 device, and eases the deployment of Gateway servers for any certified OS. Through its unique interface, users may select to have all the correct drivers be pre-deployed for the OS of their choosing, as well as setup hardware RAID devices, BMC settings (where available), and even clone the pre-settings to a bootable USB device to ease mass server deployments.
- Smart Console      Web-based management utility to simplify system management with embedded iBMC, system monitoring and alerting, event handling, remote power control and KVM-over-IP. Smart Console is OS independent and offers virtual media through floppy, ODD, and removable disk.
- Smart Server Manager v1.1      Offering 24-7 monitoring for system health and performance.
- Delivers proactive event management features including system event logging, event handling from e-mail and SNMP Trap (PET) alerting.
  - Monitors onboard hardware, operating systems and virtual machines
  - Allows remote control from KVM and Power control
  - Satisfies management in web-based UI, role-based administration, and automated management scripts.

## GT150 F1 specifications

### Available options

#### Processors (up to 2)

Intel® Xeon® processor (Six Core)

X5675 (12 MB L3 cache, 3.06 GHz, DDR3-1333 MHz, 95W)

X5670 (12 MB L3 cache, 2.93 GHz, DDR3-1333 MHz, 95 W)

X5660 (12 MB L3 cache, 2.80 GHz, DDR3-1333 MHz, 95 W)

X5650 (12 MB L3 cache, 2.66 GHz, DDR3-1333 MHz, 95 W)

L5640 (12 MB L3 cache, 2.26 GHz, DDR3-1333 MHz, 60 W)

E5649 (12 MB L3 cache, 2.53 GHz, DDR3-1333 MHz, 80 W)

E5645 (12 MB L3 cache, 2.40 GHz, DDR3-1333 MHz, 80W)

Intel® Xeon® processor (Quad Core)

X5672 (12 MB L3 cache, 3.20 GHz, DDR3-1333 MHz, 95W)

X5667 (12 MB L3 cache, 3.06 GHz, DDR3-1333 MHz, 95 W)

X5570 (8 MB L3 cache, 2.93 GHz, DDR3-1333 MHz, 95 W)

X5560 (8 MB L3 cache, 2.80 GHz, DDR3-1333 MHz, 95 W)

X5550 (8 MB L3 cache, 2.66 GHz, DDR3-1333 MHz, 95 W)

E5640 (12 MB L3 cache, 2.66 GHz, DDR3-1066 MHz, 80 W)

E5630 (12 MB L3 cache, 2.53 GHz, DDR3-1066 MHz, 80 W)

E5620 (12 MB L3 cache, 2.40 GHz, DDR3-1066 MHz, 80 W)

L5630 (12 MB L3 cache, 2.13 GHz, DDR3-1066 MHz, 40 W)

L5609 (12 MB L3 cache, 1.86 GHz, DDR3-1066 MHz, 40 W)

E5607 (8 MB L3 cache, 2.26 GHz, DDR3-1066 MHz, 80 W)

E5606 (8 MB L3 cache, 2.13 GHz, DDR3-1066 MHz, 80 W)

E5603 (4 MB L3 cache, 1.60 GHz, DDR3-1066 MHz, 80 W)

E5540 (8 MB L3 cache, 2.53 GHz, DDR3-1066 MHz, 80 W)

E5530 (8 MB L3 cache, 2.40 GHz, DDR3-1066 MHz, 80 W)

E5520 (8 MB L3 cache, 2.26 GHz, DDR3-1066 MHz, 80 W)

E5506 (4 MB L3 cache, 2.13 GHz, DDR3-800 MHz, 80 W)

E5504 (4 MB L3 cache, 2 GHz, DDR3-800 MHz, 80 W)

L5530 (8 MB L3 cache, 2.40 GHz, DDR3-1066 MHz, 60 W)

L5520 (8 MB L3 cache, 2.26 GHz, DDR3-1066 MHz, 60 W)

L5506 (4 MB L3 cache, 2.13 GHz, DDR3-800 MHz, 60 W)

Intel® Xeon® processor (Dual Core)

E5502 (4 MB L3 cache, 1.86 GHz, DDR3-800 MHz, 80 W)

## GT150 F1 specifications

### Memory

Memory type	Registered / Unbuffered DDR3 ECC memory
Capacities	1 / 2 / 4 / 8 / 16 GB DIMMs
DIMM number	12
Max memory	192 GB (48 GB unbuffered)

### Hard drives

Type	Interface, bandwidth	Capacities (RPM)
Enterprise SATA, 2.5"	3 Gb/s	150 GB (10K)
		160 GB (7.2K)
		300 GB (10K)
		500 GB (7.2K)
		1 TB (7.2K)
Enterprise SATA, 2.5"	6 Gb/s	250 GB (7.2K)
		500 GB (7.2K)
		1 TB (7.2K)
Enterprise SATA, 3.5"	3 Gb/s	250 GB (7.2K)
		500 GB (7.2K)
		750 GB (7.2K)
		1 TB (7.2K)
		2 TB (7.2K)
Enterprise SAS, 2.5"	6 Gb/s	73 GB (15K)
		146 GB (15K)
		300 GB (10K)
		450 GB (10K)
		600 GB (10K)
Enterprise SAS, 3.5"	6 Gb/s	146 GB (15K)
		300 GB (15K)
		450 GB (15K)
		600 GB (15K)

### Optical drives

DVD-ROM  
SuperMulti (DVD ± RW)

## GT150 F1 specifications

### RAID cards

Model	Port number	RAID support
LSI® MegaRAID SAS 9240-4i	4 internal ports	0, 1, 5, 10
LSI® MegaRAID SAS 9260-8i*	8 internal ports	0, 1, 5, 6, 10, 50, 60
Flex I/O, LSI® SAS 2108*	8 internal ports	0, 1, 5, 6, 10, 50, 60

\*Battery Backup Unit BBU07 available

### RAID HBA for Tape Drive

**Note:** LTO tape drives require an add on card for external or internal connectivity

Model	Port number	RAID support
LSI® SAS3442E-R	4 internal / 4 external ports	0, 1, 10

### Ethernet network cards

Model	Port number	Bandwidth
Intel® Gigabit CT2 desktop adapter	1	10/100/1000 Mbps
Supermicro AOC-SG-i2 server adapter	4	10/100/1000 Mbps
Supermicro AOC-SG-i4 server adapter	4	10/100/1000 Mbps
Supermicro AOC-STGN-i2S server adapter (DA2)*	2	10 Gbps
Intel® X520-SR1 server adapter*	1	10 Gbps
Intel® X520-SR2 server adapter*	2	10 Gbps
Intel® X520-LR1 server adapter*	1	10 Gbps

**\*Note:** Intel's 10GbE cards vary in terms of their connector type. The X520-DA2 is a copper connector for lengths up to 7M, while the X520-SR1/2 is an optical connection for cables up to 550M. The X520-LR1 is for even longer cable lengths up to 10km.

### Fibre Channel HBAs

Model	Port number	Bandwidth
Qlogic® QLE2460	1	4 Gb/s
Qlogic® QLE2462	2	4 Gb/s
Qlogic® QLE2560	1	8 Gb/s
Qlogic® QLE2562	2	8 Gb/s

### Tape Backup Unit (TBU)

## GT150 F1 specifications

Model	Tape capacity	Form factor
LTO Ultrium-3, 3Gb/s SAS	400/800 GB	External 1U rack
LTO-4, 3Gb/s SAS	400/800 GB	External 1U rack
LTO Ultrium-3, 3Gb/s SAS	400/800 GB	Internal 5.25" half-height
LTO-4, 3Gb/s SAS	400/800 GB	Internal 5.25" half-height
DAT72 SATA/USB TBU	36 GB	Internal 5.25" half-height
	72 GB	
DAT160 USB TBU	160 GB	Internal 5.25" half-height

### TPM module

TPM module with STMicro chip

## GT150 F1 specifications

### Service and support

Gateway Servers offer a comprehensive service suite to take care of daily IT needs. Users can select the 3-year standard warranty or choose extended warranties and services.

In a continuing effort to improve the quality of our products, information in this document is subject to change without notice. Images shown are only representations of some of the configurations available for this model. Availability may vary depending on region.

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**NOTE:** Extension warranty services may vary by country. Please contact Gateway authorized resellers for more information.



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