ThinkSystem ST50 features and specifications

Product features, technical specifications

Features and specifications

Features	ThinkSystem ST50
Form factor	Tower; with optional 4U rack-mount kit

Processor	• One Intel® LGA 1151 processor socket supporting the following processors, up to six cores at 95W
	    ○ Xeon E3
	    ○ Core i3
	    ○ Pentium Gold
	    ○ Celeron G
	• For a list of supported processors, refer to http://www.lenovo.com/us/en/serverproven/

Chipset	Intel C246 chipset
Memory	• Supports up to four DDR4 UDIMM slots; 2666 MHz TruDDR4 • Maximum memory 64 GB

	• Four drive bays and one SD card module supporting the following configurations:
	• Bay 1 to 3 support:
	    ○ 3.5-inch hard disk drives or solid-state drives
	    ○ 2.5-inch hard disk drives or solid-state drives (with 3.5-inch to 2.5-inch drive bay adapter)
	• Bay 4 supports:

Lenovo

Features and specifications

Storage	• Bay 4 supports:
	○ One half-height or slim optical drive
	○ One LTO/RDX tape drive
	○ One drive bay adapter for 3.5-inch or 2.5-inch hard disk drive or solid-state drive
	○ One drive bay adapter for 3.5-inch or 2.5-inch hard disk drive or solid-state drive plus a slim optical drive
	• Supports zero drive configuration and hybrid drive configuration with HDDs and SDDs
	• One SD card module with two SD cards (32 GB / 64 GB); for VMware ESXi 6.5 U2 preload only
	• No M.2 module support
GPU support (optional)	NVIDIA Quadro P620 2GB PCIe active GPU
RAID support	• Intel RSTe software RAID support
	• Hardware RAID adapter options:
	○ ThinkSystem 530-8i PCIe 12 Gb Adapter
	○ ThinkSystem 730-8i 1 GB Cache PCIe 12 Gb Adapter
	○ ThinkSystem 930-8i 2 GB Flash PCIe 12 Gb Adapter
	○ ThinkSystem 430-8i SAS/SATA 12 Gb HBA
	○ ThinkSystem 930-8e 2 GB Flash PCIe 12 Gb Adapter
	○ ThinkSystem 430-8e SAS/SATA 12 Gb HBA
Network interface	One 1 GbE RJ45 Ethernet port

Lenovo

Internal storage features

The ST50 supports up to four 3.5-inch non-hot-swap drives plus two SD cards for internal storage. The drive bays are as follows:
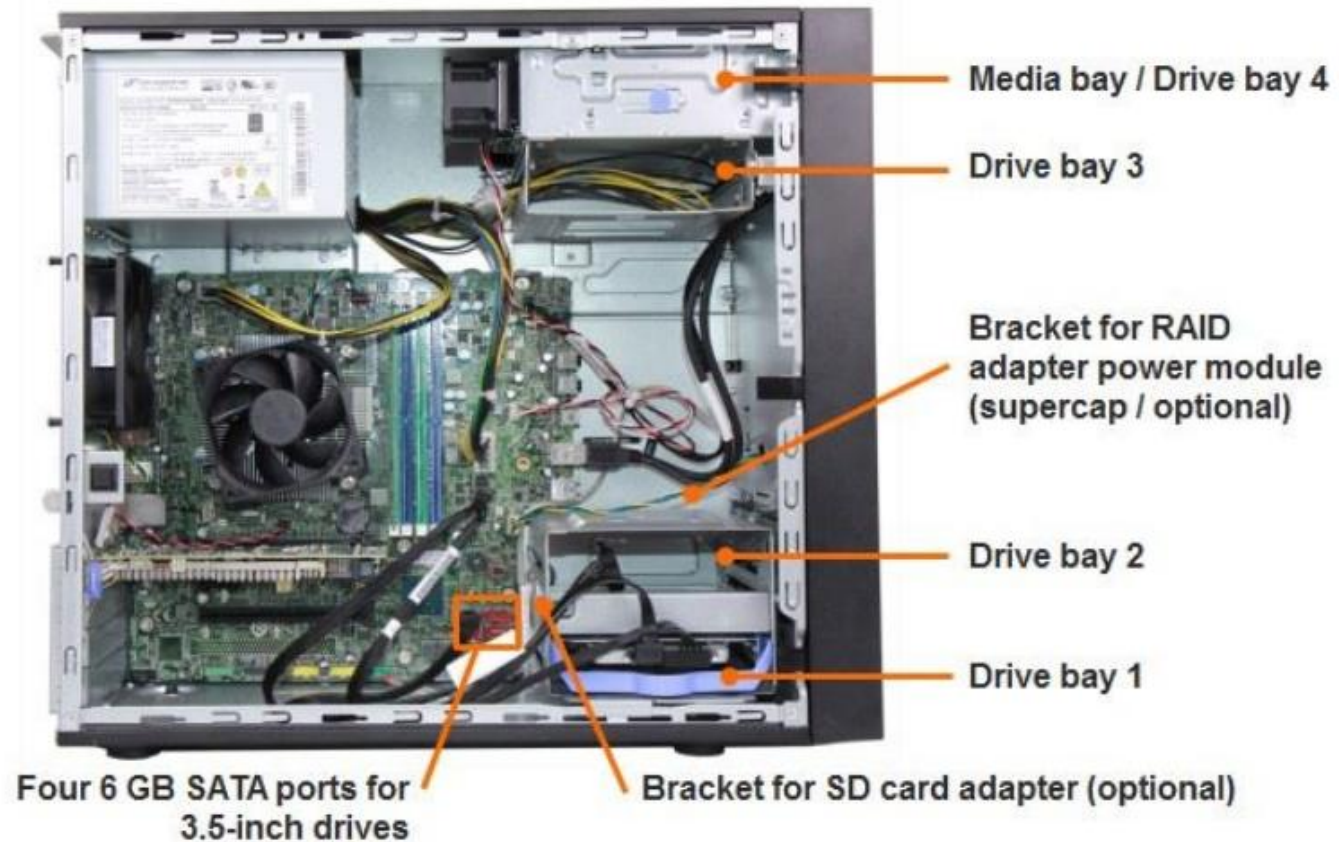
- Three drive bays dedicated to 3.5-inch/2.5-inch hard disk drives or solid-state drives.
- One 5.25-inch media drive bay, which can hold a fourth 3.5-inch/2.5-inch hard disk drive or solid-state drive.

Media bay / Drive bay 4

Drive bay 3

Bracket for RAID adapter power module (supercap / optional)

Drive bay 2

Drive bay 1

Four 6 GB SATA ports for 3.5-inch drives

Bracket for SD card adapter (optional)

2.5-inch to 3.5-inch drive kit

3.5-inch drive kit

Lenovo

Storage media options

The ST50 5.25-inch media bay (bay4) supports any of the following configurations:
- 3.5-inch non-hot-swap HDD or SSD in a 5.25-inch conversion tray
- A 3.5-inch non-hot-swap HDD or SSD plus a slim optical DVD-RW
- Half-high optical drive (either DVD-ROM or DVD-RW)
- Half-high backup unit (either LTO tape or RDX drive)
- Empty bay

3.5-inch hard drive to 5.25-inch tray convertor with slim optical kit

5.25-inch DVD drive

5.25-inch tape drive

2.5-inch SSD to 5.25-inch tray convertor kit (rear view with tray open)
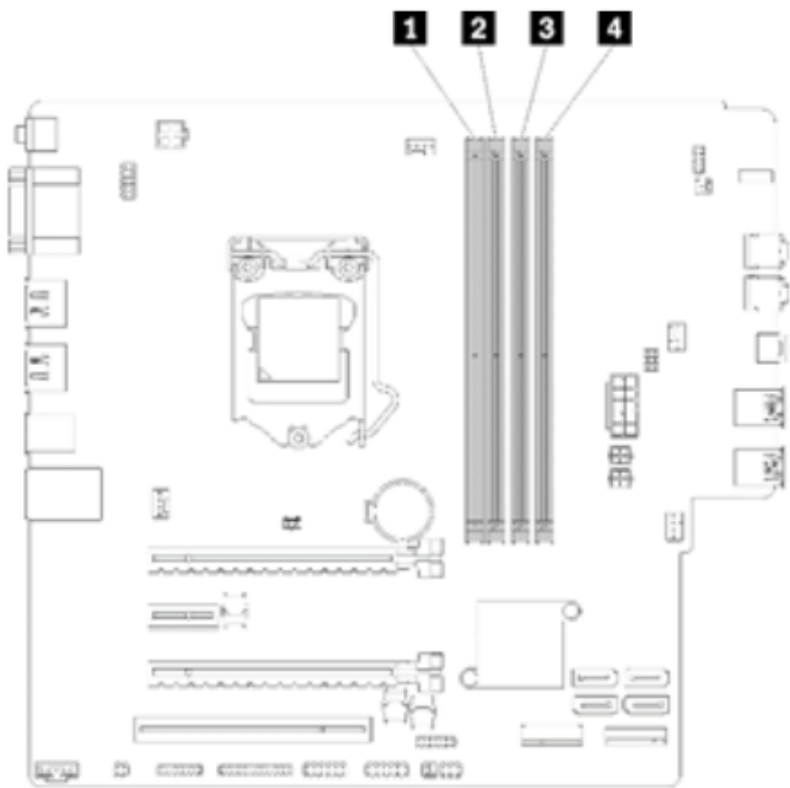
3.5-inch SSD to 5.25-inch tray convertor kit (rear view with tray open)

Memory features

The followings are the ThinkSystem ST50 memory installation rules:
• All memory DIMMs to be installed must be of the same type and capacity.
• Do not mix ECC and non-ECC DIMMs; and DIMM voltages should be the same.
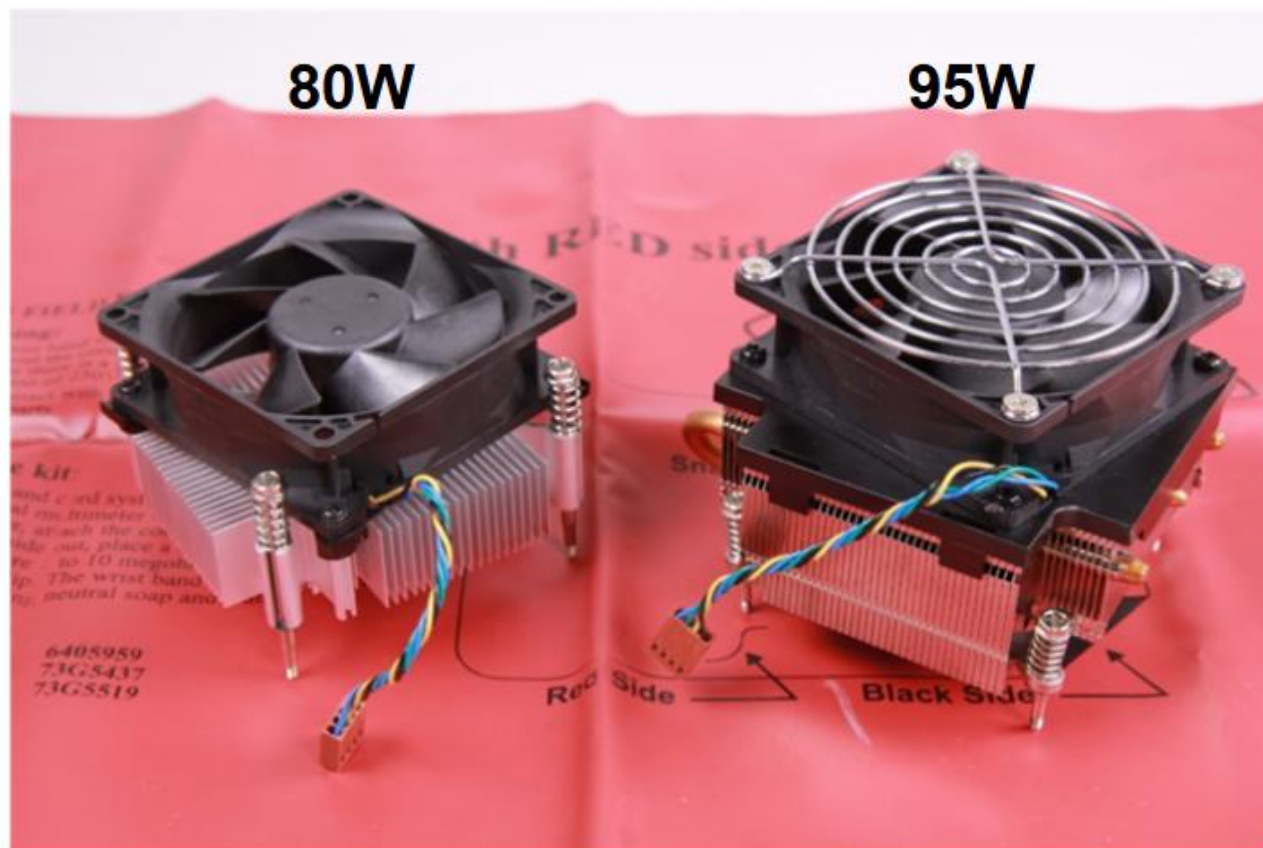Supported DIMMs installation sequence:

Total DIMMs	Slot 1	Slot 2	Slot 3	Slot 4
1	V			
2	V		V	
3	V	V	V	
4	V	V	V	V

Lenovo

Processor heat sink

- The ThinkSystem ST50 server supports up to 95W Intel Xeon processor, which requires the 95W heat sink. All other supported processors use the 80W heat sink.
- The 95W heat sink includes a heat-pipe design(aka Diablo); the 80W heat sink does not.

Acoustic and thermal optimal performance

ICE Performance Mode menu allows users to adjust server performance to achieve optimal acoustic or thermal conditions.

- **2HD Cooling Mode**: This mode allows the server to work with less noise at normal thermal level, and applies to the following configuration:
  - Up to two drives
  - Up to two 1G network adapters
  - No RAID adapter
- **4HD Cooling Mode**: This mode allows the server to work with lower noise with normal acoustic performance, and applies to the following configuration:
  - Up to four drives
  - Up to two 1G network adapters
  - One RAID adapter
- **Performance Mode (default)**: This mode allows the server to work with good performance without particular acoustic or thermal management, and applies to the following configuration:
  - Up to four drives
  - Up to two 1G network adapters
  - One RAID adapter
- **Full Speed**: This mode allows the server to work with optimal performance. There is no limitation of drive or adapter configuration for this mode, but there will be more acoustic noise.

1. Press F1 into UEFI setup menu.
2. Enter ICE performance mode.
3. Choose cooling mode.

Note: Default Performance mode.
For detailed information, refer to system documentation.

```
┌─ICE Performance Mode─┐
│ 2HD Cooling Mode     │
│ 4HD Cooling Mode     │
│ Performance Mode     │
│ Full Speed           │
└──────────────────────┘
```

Lenovo