

ftServer W Series 4300/4600 Technical Reference Guide

Revision 0 – March 23, 2005

1. Overview

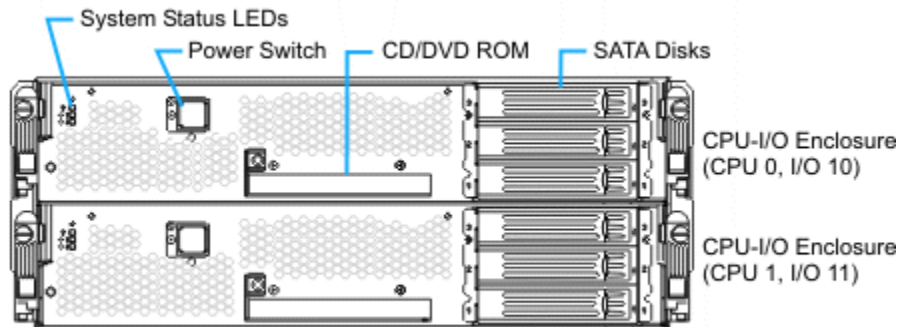
The ftServer W Series 4300/4600 systems are modular, 1-way or 2-way SMP ftServer systems. Components are connected to a blindmate backplane. The ftServer W Series 4300/4600 system can be configured in a 4U rack or pedestal system. Rack systems can be mounted in a Stratus cabinet or a customer supplied cabinet.

The ftServer 4300/4600 system consists of two 2U CPU-I/O enclosures, each of which contains a CPU element and an I/O element.

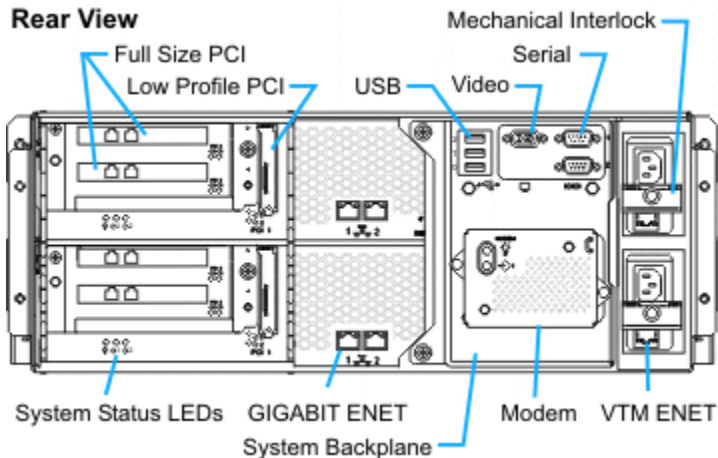
The following figures show front and rear views of the system.

Figure 1-1. System Front and Rear View

Front View



Rear View



2. Operating System Requirements

ftServer 4300/4600 systems are supported by the following:

- Microsoft Windows Server 2003 Enterprise Edition
- ftServer System Software version 4.0 (minimum)

3. Hardware Components

The main hardware components in the ftServer 4300/4600 system are the following:

- 2 CPU-I/O Enclosures
- Backplane

3.1 CPU-I/O Enclosure

Each CPU-I/O enclosure contains:

- One CPU Element
- One I/O Element

3.1.1 CPU Element

The CPU element in the 4300 system contains a 1-way or 2-way (optional) symmetric multiprocessing (SMP) Intel Xeon processor operating at 3.2 GHz and eight DIMM slots. The front side bus operates at 800 MHz.

The CPU element in the 4600 system contains a 2-way Intel Xeon processor operating at 3.6 GHz and eight DIMM slots. The front side bus operates at 800 MHz.

ftServer 4300 systems use 1-GB DDR-2 (Dual Data Rate) Dual Inline Memory Modules (DIMMs). The minimum ftServer 4300 logical memory is 2 GB and the maximum is 8 GB.

ftServer 4600 systems use 1-GB or 2-GB DDR-2 DIMMs. The minimum ftServer 4600 logical memory is 2 GB and the maximum is 16 GB.

Both CPU elements must be configured with identical total memory size. DIMMs of different capacities and from different manufacturers may not be mixed within a CPU element. DIMMs of identical capacity must be mounted in the corresponding memory slot between each CPU element. DIMMs must be installed in pairs.

The following table lists the memory module currently supported in ftServer 4300/4600 systems.

Model Number	Description	Minimum # per CPU Enclosure	Maximum # per CPU Enclosure
M231	1-GB DDR-2 DIMM	2	8
M232 (4600 system only)	2-GB DDR-2 DIMM	2	8

The following table shows the supported memory configurations:

System	Total Memory in Each CPU Element	Number of Modules in Each CPU Element
4300/4600	2 GB	2 M231 modules
4300/4600	4 GB	4 M231 modules
4600	4 GB	2 M232 modules
4300/4600	6 GB	6 M231 modules
4300/4600	8 GB	8 M231 modules
4600	8 GB	4 M232 modules
4600	12 GB	6 M232 modules
4600	16 GB	8 M232 modules

3.1.2 I/O Element

Each I/O element contains:

- One CDROM drive or optional DVD-RW drive
- One dual-port integrated 10/100/1000 Copper Gigabit Ethernet port
- Three hot-swap single-initiated internal SATA disk bays
- One 64-bit 100-MHz PCI-X slots (4300 system)
- Three 64-bit 100-MHz PCI-X slots (4600 system)

3.1.2.1 PCI Adapters

The table below describes the adapters that can be configured in ftServer 4300/4600 systems. It also includes the minimum and maximum number of adapters supported

Mktg. ID	Description	System	Min. #	Max. #
U574-LC	ftServer 2-Port Pro/1000BaseSx Ethernet PCI Adapter		0	4
U574-LC-SC	ftServer 2-Port Pro/1000BaseSx Ethernet PCI Adapter with LC to SC conversion kit		0	4
U575	ftServer 2-Port Pro/1000Base-T Ethernet PCI Adapter		0	4
AK415	EMC SAN Attach Kit – (Contains Fibre Channel Adapter pair (AA-U52500))		0	2
AK419	EMC Direct Attach Kit – (Contains Fibre Channel Adapter pair (AA-U52600))		0	2

U527	Ultra320 Adapter for Tape		0	2
U529 (4600 systems)	Copper Fibre Channel JBOD HBA		0	2
U531	2-GBPS Fibre Channel HBA for use with the AX100		0	2

3.1.2.2 SCSI Disk Drives

The ftServer 4300/4600 includes one internal disk storage enclosure that contains one, two, or three hot-swap SATA disk drives per CPU-I/O enclosure. The supported disk drives are listed in the table below:

Model	Description
D641	80-GB SATA disk drive (7200 RPM)
D642	160-GB SATA disk drive (7200 RPM)
D643	73-GB SATA disk drive (10K RPM)

A minimum of two internal disk drives is required. Different types of disk drives can be used concurrently in the same ftServer 4300/4600, but only disks of the same capacity can mirror each other.

The boot disk configured should be the smallest size available.

3.1.2.3 CD-ROM or DVD-RW drive

The supported drives are listed in the following table.

Model	Description
D553	ftServer slimline 2 x CD-ROM drive
D552	ftServer 2 x DVD/RW drive

3.2 System Backplane

The ftServer 4300/4600 system contains a backplane through which the CPU and I/O elements interconnect.

The backplane contains three USB 2.0 ports, two COM ports, a video port and a connector to which the C620 modem attaches. A 25-MHz system clock is also located on the backplane.

The C620 modem is a Stratus designed modem that provides 56K/V.90 data rates in a space efficient 1-inch by 2.5-inch form factor.

It is the external serial modem used for the Stratus Service Network (ASN) when connected over a phone line (VTM or no VTM).

3.3 Optional Components

Optional components of an ftServer 4300/4600system include:

- Tape drives
- Keyboard, mouse, and monitor
- External floppy disk drive
- EMC Attach Kit
- D540 storage subsystem (4600 systems only)
- VTM (standard in 4600 systems)
- Power distribution unit

3.3.1 Tape Drives

ftServer 4300/4600systems support two external tape drives. These tapes are connected to the U527 SCSI PCI adapter. Each I/O element can support a single tape drive. Tape drives cannot be daisy chained and do not failover.

The following table lists the tape drives supported on ftServer 4300/4600systems.

Model	Description
T521	SDLT600 – rack mount only
T522	SDLT600 – rack mount only

3.3.2 Keyboard/Monitor/Mouse/KVM Switch

The keyboard and mouse connect to the system by a USB port.

The following table lists the keyboard, monitor, and mouse types.

Marketing ID	Description
V115	ftServer USB Keyboard/Mouse
N/A	Customer supplied monitor
V128	Integrated Rack mount KVM
V129	15” flat panel display
AK470	4-Port USB KVM Switch

3.3.3 External Floppy Drive

The ftServer 4300/4600 system does not support an internal floppy disk drive. An optional external USB floppy drive (model number AK438) can be connected via a USB port.

3.3.4 EMC Attach Kits

The ftServer 4300/4600 systems support connection to an EMC Symmetrix/Clarrion system using a pair of Fibre Channel adapters contained in the AK415 or AK419 Attach kit. (ftServer 4300 system supports only CLARiiON AX100.)

3.3.5 D540 Storage Subsystem (4600 systems only)

The ftServer 4600 supports a 2U single 2-Gb Fibre Channel (FC) disk storage enclosure. Only one FC storage enclosure is supported per system.

The following table lists the Fibre Channel disk storage components.

Model	Description
D540	ftServer 12-slot 2-GB Fibre Channel Disk Storage Subsystem
D541	36-GB 15,000 RPM Fibre Channel Disk Drive
D542	73-GB 10,000 RPM Fibre Channel Disk Drive

3.3.6 VTM

The Virtual Technician Module (VTM) provides the ability to diagnose a system without power to the system, the ability to power-cycle a system remotely; as well as additional system management features of remote KVM, remote CD/floppy and access to the Stratus Service Network (ASN).

Access to the VTMs is through the modem module or over a local area network (LAN).

To enable connectivity to the ASN, a modem is attached directly to the system and managed by Windows Server software or two partnered VTMs in the system.

3.3.7 Power Distribution Unit (PDU)

Each system can contain up to two pairs of power distribution units, The PDU's are installed on the bottom rear or the middle rear of the rack to allow all systems to connect to the PDU using a single-length jumper cable.

Power distribution units connect to country-specific external power cords, which in turn connect to the customer's external power source.

4. System Configurations

4.1 4300 System

Marketing ID	P3105R-1D	P3105R-2D
Processor	DMR	DMR
SMP	1-way	2-way
Processor speed	3.2 GHz	3.2 GHz
Cache size	1 MB iL2	1 MB iL2

4.2 4600 System

Marketing ID	P3106R-2D
Processor	DMR
SMP	2-way
Processor speed	3.6 GHz
Cache size	2 MB iL2

5. System Specifications

5.1 Pedestal System

Power	
Input voltage	100-240 VAC nominal 90 VAC minimum, 256 VAC maximum
Frequency	50/60 Hz
Output wattage	A-side enclosure: 650W (AC) B-side enclosure: 650W (AC)
Physical	
Height	23.25 in. (59.05 cm.)
Width	8.62 in. (21.89 cm); 12.88 in. (32.72 cm)
Depth	31.38 in. (79.71 cm)
Weight	System: 110 lb (49.9 kg), fully loaded Rails: 5.8 lb (2.63 kg) Case: 47.5 lb (21.55 kg)
Environmental	
Operating temperature	41°F to 95°F (5°C to 35°C) For every 800 ft (243.8m) above 2,000 ft (609.6m), lower the maximum operating temperature (35°C) by 1°C.
Storage temperature	-38° F to 140° F (-40° C to 60° C)
Operating altitude	0 ft to 10,000 ft (0m to 3,048m)
Maximum rate of temperature change during operation	18°F/hr (10°C/hr) or 0.30°F/min (0.17°C/min)
Relative humidity during operation	10% to 80% (noncondensing)
Relative humidity during storage	5% to 95% (non condensing)
Acoustic sound pressure limits (operating)	<55 dBA
Heat dissipation	4432 BTUs per hour

5.2 Rack-Mount System

Power	
Input voltage	100-240 VAC nominal 90 VAC minimum, 256 VAC maximum
Frequency	50/60 Hz
Output wattage	A-side enclosure: 650W (AC) B-side enclosure: 650W (AC)
Physical	
Height	7.0 in. (17.78 cm; 4U)
Width	17.50 in. (44.45 cm)
Depth	30 in. (76.2 cm), excluding screws and bezel
Weight, including 8 DIMMS, 4 processors, and six disks	System: 110 lb (49.9 kg), fully loaded Rails and cage: 13.8 lb (6.26 kg)
Environmental	
Operating temperature	41° F to 95° F (5° C to 35° C) For every 800 ft (243.8 m) above 2000 ft (609.6 m), lower the maximum operating temperature (35° C) by 1° C.
Maximum rate of temperature change during operation	18° F/hr (10° C/hr) or 0.30° F/min (0.17° C/min)
Relative humidity during operation	10% to 80% (non condensing)
Relative humidity during storage	5% to 95% (non condensing)
Acoustic sound pressure limits (operating)	<55 dBA
Heat dissipation	4432 BTUs per hour

6. Related Documentation

The following sections contain related information pertaining to ftServer T30 systems.

6.1 Service Documentation

ftServer W Series Technical Service Guide

6.2 Customer Documentation

Part No.	Title
R573	<i>Stratus ftServer W 4300 and W 4600 Systems: Site Planning Guide</i>
R575	<i>Stratus ftServer W 4300 and W 4600 Systems: Installation Guide</i>
R574	<i>Stratus ftServer W 4300 and W 4600 Systems: Operation and Maintenance Guide</i>
R004W	<i>Release Notes: Stratus ftServer W Series System Software</i>
R002W	<i>Stratus ftServer W Series: Software Installation and Configuration Guide</i>
R013W	<i>Stratus ActiveService Network Configuration Guide</i>
R561	<i>Stratus Virtual Technician Module User's Guide</i>
R014W	<i>Stratus ftServer W Series: System Administrator's Guide</i>
R007W	<i>Stratus ftServer Software Availability Manager User's Guide</i>
R461	<i>Stratus ftServer W Series: PCI Adapter Guide</i>
R550	<i>Stratus ftServer W Series: Technical Reference Guide</i>
R565	<i>Attaching an EMC CLARiiON AX100 Storage System to an ftServer W Series System</i>
R554	<i>Stratus D540 Storage Enclosure Connection Guide</i>