DATA SHEET

BS2000/OSD
Business Server S175

Issue May 2011

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The S175 business servers are powerful BS2000/OSD servers for the medium and high performance range. Together with the high end S210 business servers, they set new standards in the mainframe sector: the S175 business servers perfectly combine reliable performance and outstanding economic viability.

The wide performance range permits server configurations, which are tailored to the required performance demands. Broadly equipped base configurations provide for upgrade options to adapt installed Business Servers to increasing performance requirements with low efforts and without long service interruptions.

S175 business servers form a custom-taylored and reliable basis for dynamic infrastructures in the modern data center. They support all vital business processes and combine remarkable flexibility and an outstanding total cost of ownership (TCO) for fulfilling business-critical IT production requirements.

Due to their scalability, unrivalled transaction security, excellent workload management and virtualization options with VM2000 they are ideally suited for server consolidation and for implementing service-orientated architectures (SOA) while at the same time integrating proven commercial applications.

Main features	Benefits
New CPU board with quad-core technology	Increased system performance for all customer applications
High range of performance	Adaptation of the S175 business servers to various requirements
Low-effort S175 upgrades onsite at the customer's	Subsequent performance adaptation without any long downtimes
Automatic operation, sophisticated workload management and proven virtualization features	High system load with low operating outlay
Significantly reduced energy consumption	Low-costs for power and cooling

The new processor chip is the heart of the S175 business server. It is based on very highly integrated CMOS-VLSI semiconductor ICs, which are produced in a 65 nm process. Compared to S165, the quad-core processor chip with a cache that is jointly used by all processors (CPUs, cores) provides considerably more power to the applications.
At the same time highly-integrated processor technology results in reduced energy consumption for the S175.
Every S175 business server contains one quad-core CPU board and thus works with up to 3 CPUs. All S175 models are equipped with a standby ("hot spare") processor, which is activated dynamically if a processor fails and serves as a replacement for the defective processor. This means the applications can continue running without interruption and with no reduction in performance.
Model upgrades can easily be performed onsite by activating the already mounted CPUs.
With the optional CoD (Capacity on Demand) feature, additional processors can be temporarily added or removed without system interruption. This enables the available performance to be flexibly matched to the changing needs of the application.

The S175 models support programs using virtual 31 or 24-bit addresses as well as ESA data spaces. The Real Address Extension Feature is used to convert virtual data addresses (31-bit) with hardware support into extended real addresses (40-bit) of the main memory. This enables memory expansion of up to 64 GB in the S175 business servers and also makes it possible to run several applications in parallel with large address spaces without any performance bottlenecks caused by intensive paging.
Global Storage (GS), which can be upgraded to 64 GB, is available as an option to boost system throughput and provide faster access to performance-critical data. Two GS units can be used in parallel to enhance the failsafe characteristics of this high-speed memory and increase the size of the usable storage space to 128 GB. The GS units are directly connected to the system board of the S175. Optional rechargeable battery units provide backup power to ensure the data in the GS is not lost in the event of a power outage.
The input/output system (Dynamic Channel Subsystem) offers extensive and flexible expansion options. Two input/output processors providing up to 128 channels in total can be configured for the connection of peripheral devices of type 2, type S or type FC channel interfaces.

S175 business servers can be used with BS2000/OSD as of V7.0 and with VM2000 as of V9.0. To increase performance and availability, several business servers can be configured into a HIPLEX cluster.

Together the Service Processor (SVP) and the external Service/Console Processor (SCP-III 3970-50) support the operation, monitoring, diagnostics and maintenance of the business servers and enable TELESERVICE. The SCP-III 3970-50 is based on PRIMERGY TX300 server technology and the Linux operating system. System operation and administration is implemented by means of a web interface and is also possible from remote workstations.

TECHNICAL DETAILS

BUSINESS SERVER S175

PROCESSORS

Model	Processors [1)]
S175-10A	1
S175-10B	1
S175-10C	1
S175-10D	1
S175-10E	1
S175-20B	2
S175-20C	2
S175-20E	2
S175-30E	3

1) All models are additionally equipped with a standby processor ("hot spare CPU")

Each processor features	
First-level cache (Kbyte)	128
Second-level cache for all CPUs (Mbyte)	5
Addressing width (bit)	24/31
ESA addressing for data spaces	yes
Real Address Extension Feature	yes

All models are equipped with one system board.

MAIN MEMORY

Memory module type A (GByte): 1, 2, 4, 6, 8, 12, 16, 20, 24, 32
Memory module type B (GByte): 16, 20, 24, 32, 40, 48, 64

INPUT/OUTPUT SYSTEM

Model	Number of I/O processors
All models S175	1 or 2
Module type	**Channels/Increment**
Type 2 channels	max. 60/4
Type S channels	max. 128/8 [1)]
Type FC channels	max. 16/2
	Maximum data rates
Type 2 channels	
Block multiplex mode	4,5 (Mbyte/s)
Type S channels	
CNC, CTC mode	17 (Mbyte/s)
CVC mode	4,5 (Mbyte/s)
Type FC channels	
full duplex	100 (Mbyte/s)

1) One type S channel is necessary to connect the SCP.

GLOBAL STORAGE

	Number
Global Storage Units	0, 1, or 2
Battery cabinets per GS (optional)	1
Dual-write mode	yes [1)]
Battery operation (h)	24
GS unit A and unit B	
Memory size (GByte)	2, 3, 4, 6, 8, 12, 16, 24, 32, 48, 64

1) Symmetrical expansion of GS A and GS B necessary

POWER ON/OFF CONTROLLER

Power Control Interface	Interfaces/Increment
PCI	8 to 24/8
ECI [1]	8

1) For power on/off control of GS.

SERVICE PROCESSOR

Ports:

- 1 Service processor LAN (CSMA/CD, 10Base-T)
- 1 Service interface (FST)
- 1 power on/off interface for Business Server S175

Optional ports

- 1 Service processor LAN (CSMA/CD, 10Base-T) for connecting a 2nd GS unit or a redundant SCP

SERVICE-/CONSOLE PROCESSOR SCP-III 3970-50

based on a PRIMERGY server with ports for:

- 1 local console (monitor, keyboard, mouse)
- 1 remote service connection via LAN
- Connection to administration and operation LAN
- 2 connections to service processor LAN
- 1 channel board to S175 server
- 1 SCP host connector for installation in the S175 server

Optional ports for:

- Power on/off box for switching on the S175 via the SCP 3970
- Teleservice modem (V.24 or ISDN)

S175 INSTALLATION DATA

ELECTRICAL	Cabinet 1/2 [1]	Cabinet 3 to 6 [1]
Rated voltage (V)	1x 200 – 240 ±10%	in each case 1x 200 – 240 ±10%
With dual power feed:	2x 200 – 240 ±10%	in each case 2x 200 – 240 ±10%
Rated frequency (Hz)	50/60 ±1	50/60 ±1

POWER CONNECTION	Cabinet 1	Cabinet 2	per Cabinet 3; 4	per Cabinet 5; 6
Power consumption (kVA) [5]	2.5	0.4	1.3	0.8
Device fuse rating (A) per port	30	by Cabinet 1	20	10
Connection type	3-wire [2a]	by Cabinet 1	3-wire [2b]	3-wire [2b]
With dual power feed	2x 3-wire [2a]	by Cabinet 1	2x 3-wire [2b]	2x 3-wire [2b]

MECHANICAL	Cabinet 1	Cabinet 2	per Cabinet 3; 4	per Cabinet 5; 6
Height (mm)	1800	1800	1800	1800
Width (mm)	846	784	1354	680
Depth (mm)	881	881	881	850
Weight max. (kg)	600	400	600	400
Footprint (W x D) (mm) [3]	846 x 2540	805 x 2540	1354 x 2540	680 x 2850

EMISSIONS	Cabinet 1	Cabinet 2	per Cabinet 3; 4	per Cabinet 5; 6
Max. sound pressure at workplace dB(A)	59		60	50
Heat dissipation [kJ/h]	8800	1400	4450	2740

ENVIRONMENTAL	Cabinet 1 to 6
Operating environment to DIN IEC 721	Class 3K2
Temperature (°C)	10 – 32
Rel. humidity (%)	20 [4] – 80

STANDARDS COMPLIANCE	Cabinet 1 to 6 [1]
Security	EN 60950
Radiation emission, RFI suppression	EN 55022 A, EN 55024 and EN 61000-3-2/3
CE- mark acc. to EU directive	2004/108/EC (EMV), 2006/95/EC (product safety) and 2011/65/EC (RoHS)

1) Cabinet 1: Basic cabinet
contains system board, CPUs, max. 2 I/O processors, channels, SVP, PCI.
Cabinet 2: optional, necessary to use more than 12 channel groups, power supply by cabinet 1
Cabinet 3 and 4: Global Storage unit A and unit B
Cabinet 5 and 6: Rechargeable batteries for Global Storage unit A and unit B

2) 2a) Connection with flexible lead connectors (EU standard) to commercially available power distributor or 3911 Power Distributor required
2b) Permanently wired connection to commercially available power distributor or 3911 Power Distributor required

3) Installation area incl. space for operating and maintenance access

4) Limited range compared to 3K2

5) Power draw of max. configuration

SCP-III 3790-50 INSTALLATION DATA

ELECTRICAL

Rated voltage (V)	100 – 240V
Rated frequency (Hz)	50 - 60Hz

POWER CONNECTION

Power consumption (kVA)	0.570
Effective power (kW)	0.560
Device fuse rating (A)	2 x 16
Dual power connection	2 x 3-wire / grounding outlet

MECHANICAL

	Tower / Rack
Height (mm)	466 / 177
Width (mm)	286 / 483
Depth (mm)	745 / 748
Weight (kg)	30 (without rack)
Footprint (W x D) (mm) [1)]	290 x 1845 / 700 x 2800

EMISSIONS

Sound pressure level at workplace	
LpAm (dB(A))	≤ 37
Heat dissipation	≤ 2016 kJ/h

ENVIRONMENTAL

Operating environment to DIN IEC 721	Class 3K2
Temperature (°C)	10 – 35
Rel. humidity (%)	10 – 85

STANDARDS COMPLIANCE

GS, CE class A, RoHS, WEEE

1) Installation area incl. space for operating and maintenance access

Information about environmental care, policies, programs and our Environmental Guideline FSC03230:
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Take back and Recycling information: ts.fujitsu.com/recycling

Published by:
Fujitsu Technology Solutions GmbH
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