

White Paper

BS2000/OSD / SQ210 Business Server

The multi-OS mainframe with BS2000/OSD efficiency on a universal platform in 3rd generation



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Innovation founded on tradition

With the SQ Business Server series, Fujitsu has continued to follow its strategy in recent years for entry-level and mid-range performance segments and run BS2000/OSD operating system software and mainframe applications on standard hardware technology. The SQ servers are based on high-end Intel x86 technology and offer BS2000/OSD users a technologically highly innovative, low-cost platform so that they can consolidate their IT landscape.

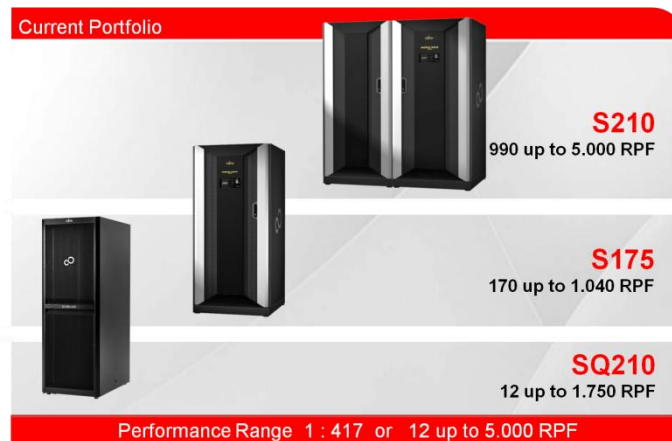
Fujitsu has opted for the x86 architecture as an additional mainframe platform because this is a highly dynamic technological development; it is also very widespread in the market and enjoys a broad base of acceptance and support among independent software vendors.

Fujitsu now launches its SQ210 Business Server, the current development stage, which will be available to customers in the second half of 2012.

The target group for the SQ210 mid-range server

The combination of proven BS2000/OSD functionality and Intel x86 architecture means that the SQ210 Business Server offers BS2000/OSD mid-range customers an ideal system platform for low-price operation of their proven BS2000/OSD applications.

The SQ210 models are extremely economic with HW and SW innovations, especially for older systems, such as the SX150, SX160, SX100-C, SX100-D and S155. The new SQ210 Business Servers follow on from the predecessor version SQ200 and thus complete the BS2000/OSD range of servers in the entry-level and mid-range performance sector. They are positioned below the S175 Business Server due to the mono processor performance. The higher processor numbers have SQ210 performance values similar to S175 performance.



16 models are configured as HW/SW complete packages with an overall performance of up to 1,750 RPF and a main memory configuration of up to 512 GB, and contain all the necessary components to support problem-free and efficient BS2000 system operations with extremely low administration and operational overheads. Integrated disk storage units (ETERNUS JX40), connected via SAS, scalable to over 7 TB offer an optional low-priced data storage base for important corporate data.

Of course, the connection options for storage subsystems from the current ETERNUS DX400 S2 and ETERNUS DX8700 S2 series plus the virtual tape appliance ETERNUS CS High End are offered as well.

The very compact integrated tape jukebox system ETERNUS LT40 for 12 or 24 LTO4 or LTO5 data cartridges - with a capacity of up to 36 TB (native) - supports optional automated, high-performance backup.

Fast Ethernet or Gigabit Ethernet LAN connectivity plus a Tele Service connection via ISDN modem or (optional) the web-based AIS Connect, complete the server package.

Interesting benefits for medium-sized customers

The SQ210 Business Server offers, in particular for mid-range customers, a combination of low-price state-of-the-art technology with a very high degree of flexibility and a large number of usage scenarios.

- Complete object compatibility for existing customer applications protects existing investments
- Mostly automated operation without the need for a highly-qualified IT team
- The user can concentrate on his core business supported by an efficient, easy-to-use system
- Low demands on footprint, power consumption, maintenance and service costs reduce operational costs
- High-end Intel processors and inexpensive standard peripherals offer high levels of economic efficiency and an attractive price-performance ratio
- The support of Fibre Channel, the state-of-the-art connection technology for storage subsystems, enables trouble-free utilization and optimal integration of Business Servers in modern storage technologies, such as Storage Area Networks (SAN)

- Using (max. 4) Application Units (AUs) that can be optionally integrated, customers can consolidate their Linux and Windows applications without any problems on the SQ210 Business Servers (also with SQ210 Business Server AUs virtualized with VMware Vsphere V5). A wide range of Intel Xeon E7 4, 6, 8, 10-core processors are available for selection so as to obtain optimal performance as well as a large number of additional optional system components.

New options for high-availability und virtualization

The Fujitsu SQ210 Business Server supports special HA features, such as High Availability (HA) and Live Migration (LM). A widely used state-of-the-art virtualization technology can now be used for all customers on a mainframe server on the Application Units (AUs) with the virtualization software Vsphere V5 from VMware for all applications in the Linux and Windows environment.

High Availability (HA)

The high-availability solution of the same name helps customers to easily increase the availability levels of their SQ210 Business Server. HA can be easily implemented at a very low price using two SQ Servers and/or two ETERNUS DX disk storage systems. Hardware and software components to link redundant SQ Servers are offered; they can easily and quickly relocate guest systems and their applications to a second server.

The mutual monitoring of SQ210 Business Server in operation ensures, should a server fail, the automatic restart of monitored guest systems and applications on the backup system. Furthermore, if an ETERNUS DX disk storage system fails, it is possible to switch to a mirrored storage system without a lengthy interruption of the application.

Live Migration (LM)

The relocation of guest systems and applications can also be performed as Live Migration (LM). This means that guest systems (BS2000, Linux, Windows) and their applications are moved from one SQ210 Business Server (SU or AU) to a second SQ210 Business Server in run mode. The user can continue to use the applications during the relocation phase (without a lengthy interruption). Live Migration (LM) is supported on SQ210 Business Server for guest systems on the Server Unit (SU) and on the Application Units (AUs) for VMware guest systems. A native BS2000 guest system without VM2000 can also be moved via LM to a second SQ210 Business Server.

Main advantages of VM functions on SQ Servers:

- Distribution of the server capacity on BS2000, Linux and Windows systems as required.
- Providing the necessary interfaces and distributing hardware resources to the guest systems is carried out on SQ servers using state-of-the-art virtualization technologies.
 - VM2000 (BS2000) on the Server Unit (SU)
 - XEN VM (Linux & Windows) on the Server Unit (SU)
 - VMware Vsphere V5 (Linux & Windows) on the Application Unit (AU)
- The administration of the BS2000 guest systems is via the proven VM2000 command interface.
- The central administration of server resources, peripherals and guest systems is via the web-based SQ Manager

Possible usage scenarios of the new VM functionality on SQ servers

The SQ210 Business Server offers customers a wide range of usage scenarios and consolidation options for all their business-critical applications.

- Use as a consolidation server for various autonomous BS2000 applications
- Use as co-existence server for critical company BS2000/OSD, Linux and Windows applications with customized load distribution
- Run BS2000/OSD, Linux and Windows applications either in native mode or as virtualized guest system
- Use as database server for huge data volume (e.g. BI, SESAM and ORACLE applications) in mainframe quality
- Use as SAP server with optimized load distribution on up to 4 Application Units

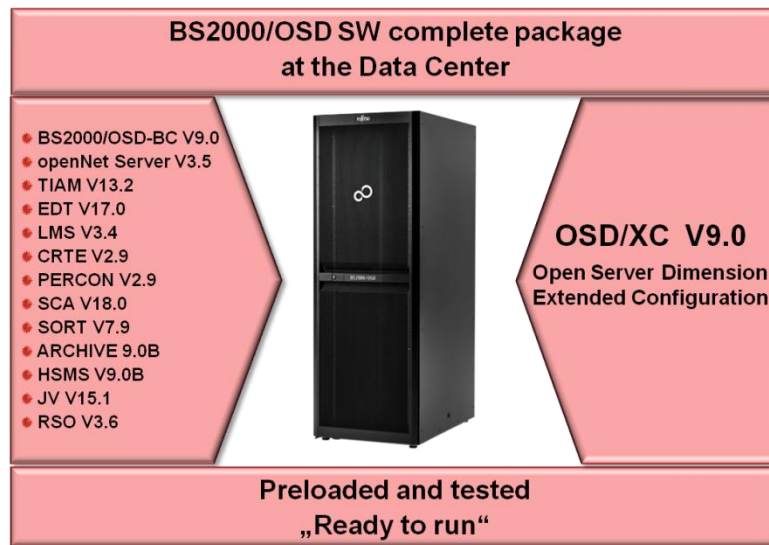
OSD/XC - the complete software package

The SQ210 Business Server represents a complete HW/SW package which supports Dynamic Infrastructures with BS2000/OSD at entry-level and mid-range performance levels. All the main functions and features are provided to ensure smooth problem-free use of critical business applications in data centers.

The SQ210 Business Server is supported on the BS2000/OSD side by OSD/XC V9.0 (OpenServerDimension/ExtendedConfiguration). The functions of the current OSD/XC V9.0 correspond to the state-of-the-art BS2000/OSD version 9.0 which was ported to Intel x86 architecture. It contains all the functions and features for problem-free mission-critical operation of the BS2000/OSD system scenario as well as for integration in eBusiness scenarios.

The current firmware version X2000 5.3 is used which runs under SUSE SLES11. OSD/XC thus provides unrestricted BS2000/OSD functionality for Business Servers in the SQ series.

Existing customer applications run in binary compatible mode with OSD/XC on SQ servers. New features for the efficient use of encryption algorithms offer increased security when sending and locally storing sensitive data.



OSD/XC V9.0 is provided as a complete package with all the software products required for data center operations already integrated. This guarantees simple, reliable system installation and on-site start-up of the SQ210 Business Servers.

Parallel to BS2000/OSD, Linux and Windows open operating systems are available for Business Servers in the SQ series. Linux and Windows enjoy wide support from ISVs (Independent Software Vendors). As a result, there is a comprehensive offer of professional application solutions from all the leading software vendors for Business Servers in the SQ series.

SQ210 Business Server: Target group and main highlights

Target group

The SQ210 Business Server addresses BS2000/OSD users in the entry-level and mid-range performance sector. The Business Servers in the SQ series score points with all the proven mainframe features, such as high transaction performance, extreme reliability and optimal use of resources.

Main highlights of the new SQ210 Business Server:

- More and faster processors (cores) for BS2000/OSD, Linux and Windows
- Optional Application Units (AUs) for a large number of additional usage scenarios
- Clearly improved BS2000/OSD application performance thanks to the Just-In-Time Interpreter (JIT)
- Accelerated database performance (SESAM and ORACLE)
- Pro-active service concept for error recognition and handling; with AIS Connect as an option
- Release for mid-range and enterprise ETERNUS DX storage systems as well as the virtual tape appliance ETERNUS CS
- Easy SAN integration of FC peripherals via SAN integration package (SIP)
- Use of the latest BS2000/OSD system and system-related software products (BS2000/OSD XC V9.0)
- High Availability (HA) to increase system and application availability.
- Live Migration (LM) for interrupt-free relocation of systems and applications in run mode.



Summary

The combination of proven BS2000/OSD functionality with high-end Intel® Xeon® E7 processors means that the SQ210 Business Server is the ideal basis for operating BS2000/OSD applications economically.

The new SQ210 Business Servers extend the use of SQ servers due to a clearly better mono processor performance and a greatly increased performance range of up to 1.750 RPF.

OSD Extended Configuration OSD/XC is the BS2000/OSD operating system package for Business Servers in the SQ server line. The SQ210 Business Server is supported by BS2000 OSD/XC V9.0, which consists of the BS2000/OSD-BC V9.0 operating system and a range of system-related software products. VM2000 V10.0 enables the use of several BS2000/OSD guest systems on the SQ210 Server Unit.

In addition to BS2000/OSD Linux and Windows Server® guest systems can be used on the SQ210 Server Unit as an option.

In addition to these guest systems on the Server Unit additional optional Application Units are offered for SQ210, on which native applications can run, or - under VMware Vsphere V5 - Linux and Windows applications can run.

In order to further increase the availability of SQ210 servers a high-availability configuration with two SQ servers and/or two ETERNUS DX disk storage systems can be set up. In addition to High Availability (HA) which clearly increases system availability for non-planned operational interruptions, the Live Migration (LM) feature helps to relocate guest systems and their applications in run mode without any interruptions.

The administration of the overall SQ210 Business Server including the management of the High Availability and Live Migration functions is handled in SQ Manager via a common browser-based graphic interface which, in addition to SQ-specific functions, also enables the use of administration GUIs for the guest systems and Application Units.

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