Data sheet
Fujitsu Server BS2000 SE330B and SE730B

FUJITSU

The powerful business servers
from entry level to high performance range

BS2000 Mainframes

BS2000 mainframes have been synonymous with reliability and innovative power for more than 40 years. Focused on innovation, openness, integration, cost efficiency and continuity, Fujitsu safeguards the investments of its mainframe customers on different hardware technology platforms and at the same time ensures that market developments and the associated customer requirements can be fully covered always.

Fujitsu Server BS2000 SE Series

The Fujitsu Server BS2000 SE series with its innovative HW and SW features forms Fujitsu's proven mainframe line. Designed as hybrid systems, the SE Servers provide a new quality of openness and integration ability from various server and peripheral systems together with comprehensive, cross-system manageability.

New servers SE330B and SE730B

The servers of the latest SE generation offer higher system performance for BS2000 and consistently expand the integrative concept of the SE infrastructure.
The basic component of each BS2000 SE server is a server unit which serves as a runtime platform for the BS2000 OS DX operating system package, optionally with the VM2000 hypervisor, and the customer applications based on it.

These server units are optionally offered as SU /390 in classic mainframe architecture or as SU x86 on the basis of a high-end x86 server. In the current server generation, the SE330 and SE330B in particular show a significant increase in performance compared with previous generation. Together with the very high scalability of the BS2000 SE servers, this enables tailored configurations with high growth potential.
In addition, Application Units, peripheral devices and network infrastructure components can be optionally integrated in the SE330B and SE730B.
The Management Unit (MU) included in SE330B and SE730B provides a browser-based administration interface with the SE Manager, which offers a common view of the SE components and of the optional add-on products, thus enabling common monitoring, operation and administration under a uniform interface.
LAN connections between the SE Server components and into the customer's network are realized by the SE Network Unit (NU), which is also part of each SE Server.
A service offer offers a customer-specific extension of the Net Unit and ranges from the design of the network connection to pre-configured delivery and installation in the customer's operations.
Up to eight SE Servers can be interconnected to form a management cluster. This enables an administration network across all components of the servers.

In a suitable configured Live Migration (LM) Cluster for /390 as well as for x86 Server Units a running BS2000 guest system can be moved from one SU to another without interruption. This can be used e.g. to move a running application to a second server in case of maintenance. In addition, load balancing between two servers is possible without any affect for the user. With automation functions individually adapted for the customer Fujitsu offers high availability services. They ensure a particularly fast reprovision of customer applications even in the event of failures in the SE cluster network.

Features and benefits of SE Servers

Main Features	Benefits
Server Units • SU730 and SE730B based on /390 technology, very high monoprocessor and overall performance, high-performance I/O system with 16 Gbit/s Fibre Channel channels • SU330 and SE330B based on x86 Intel technology: significant performance increase compared to previous x86 server units, object compatible with /390 applications	• Business flexibility due to easy upgrading and thus performance according to demand available. • High productivity and quality levels for mainframe operation • Coverage of growing performance demands in the mid to upper performance range. • Optimal utilization of resources on the respective platform
Application Units • Use of Linux and Windows applications on high-end x86 servers, which are integrated in the SE Server • Ideal adaptation of AUs to the application to be operated through flexible sizing and the use of native as well as virtualized operating systems	• Very stable operation of customer applications due to the use of redundant components as well as the quality assurance and service concept of the SE Servers, which is extended to cover Application Units. • Overall picture of all units, clusters and virtual machines through integration into the SE Manager . • Common service concept including remote service for AUs and the other SE units • Very well suited for running Linux and Windows programs in cross-system application scenarios with BS2000-applications. • Very well suited for Linux and/or Windows consolidation platform with high stability and comprehensive service concept.
Management Unit with SE Manager • Modern browser-based graphical user interface • Uniform interface for administration, monitoring and operation • Superordinate view of system components	• Single Point of Operation • User-oriented IT Management • Efficient Distribution of applications • Optimum cost control and efficiency
Variety of uses • Classic mainframe usage • Support of various operating systems and platforms in one server • Parallel use of BS2000 and x86 applications	• Excellent security and service concept for the highest standards • Identical runtime environment for production, as well as testing and development
Complete package • All the components of the SE Servers and the additionally integrated devices are preconfigured and tested as a complete package • Combination of mainframe and open world technology • Best-fit platform for every mainframe application	• Low operating and administration costs, excellent automation features. • Flexible and comprehensive response of the customer to current and future market trends • Cost-efficient optimization through the use of the best possible platform for production and T&D applications
Management Cluster and Live Migration Cluster • Up to eight SE Server can be combined in a Management Cluster. Monitoring and Administration of all units in the Servers is done in one browser window. • Live Migration moves guest systems without interruption to the other server in the LM Cluster.	• Simplified operation of all units in the SE Servers. • Operating state of all components at a glance. • Offline-maintenance on a server while the productive applications still run without interruption. • Load balancing between two SE Servers without any effect to the productive applications.

Structure and functions of the SE Server

The adjacent graphic shows the schematic structure of a SE Server. The central components of a SE Server are the Server Units (SU), on which the operating system packages BS2000 OS DX (native or with VM2000) and the BS2000 customer applications run.

A **SE Server SE730B** contains a **Server Unit SU730B** based on the /390 mainframe technology.
A **SE Server SE330B** contains a **Server Unit SU330B** based on   Intel XEON processors.

Optional are **Application Units (AU)**, which are based on x86 technology and differ in the performance of the respective base model. The AUs run hypervisors such as VMware ESXi® or Microsoft Windows Hyper-V Server, operating systems such as Linux or Windows, and customer applications that use these systems.
The SE Server can optionally be equipped with a number of **peripheral devices** (disk and tape), e.g. ETERNUS DX600.

The **Management Unit (MU)** manages all these components. The **SE Manager (SEM)** with its modern browser-based GUI enables the joint management of all units under a common interface. SE330B and SE730B use a new generation of MU hardware.

The **Net Unit (NU)**, which consists of LAN switches and implements the networks required to operate the SE Server, enables all units to be connected to each other and to the customer's data and administration networks. These networks are connected to the customer networks by means of uplinks in the switches. The basic configuration of the Net Unit takes place during system installation in the factory. Because of their isolation, private, internal SE networks increase the security of network operations and enable high-performance data throughput regardless of any faults in the customer network. The simple configuration of internal server data connections increases the flexibility significantly. In SE330B and SE730B, the Net Unit is based on the switches that have already been innovated for SE330 and SE730.
The LAN connection of an SU730B with the Net Unit and with the data networks of the customers is realized by the **High-speed Net Connect (HNC)**, which is thus regarded as a component of the Net Unit. A new HNC hardware generation is used in SE730B.
Customers who need Net Unit connections at 10 Gbps, use many separate VLAN networks, want to physically separate these networks, or want to integrate these switches into their own Cisco-based network infrastructure and administration, can achieve this through **Net Unit extension with Cisco switches**.

It is provided together with a service for the development of a customer-optimized network structure, for customer-specific production and configuration in the factory, for commissioning at the customer and for support throughout the entire lifecycle.
In addition to data connections via the Net Unit, SE Servers can also be connected directly to customer networks via LAN controllers in the HNC or in the SU x86.
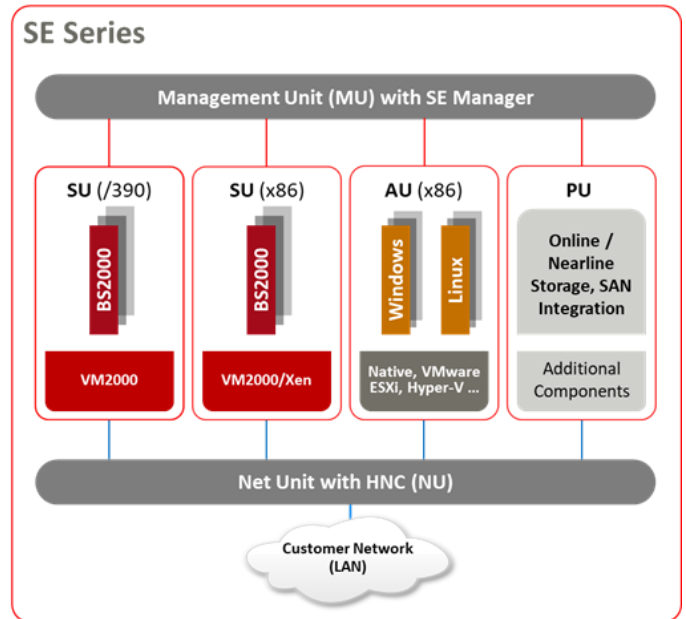
Components of SE Infrastructures

All the components of the SE Servers are supplied in a system rack.
If additional space is required for optional Server Units, Application Units, peripherals or other components, the system rack can be supplemented with expansion cabinets.

The parts of an SE Server offer the same lifecycle: Server Unit, Net Unit, Management Unit and all of their components are released together, and they will reach their common end of service.
In order to be able to offer up-to-date versions of the additional products integrated in SE Servers, such as Application Units or peripheral products, these products have their own lifecycle; their release date and end of service date may differ from the SE Server dates.

The servers SE330B and SE730B use the SW version V6.5 SP2 of the SE software M2000, X2000 and HNC. In addition to support for the new hardware generations, SE software V6.5 offers a range of function enhancements that further simplify the administration and operation of the SE infrastructure.

New features of the SE software version V6.5

Functions for further simplification of system support, e.g.:
- Extended role concept
- Physical backup to disk (emdisk file on FC LUN)
- Multi-factor authentication for login at SE Manager

Performance measures, e.g.:
- Performance improvement for the connection between M2000 and the BS2000 subsystem REWAS

Enhanced resilience and diagnosability, e.g.:
- Automatic checking of the iRMC SNMP configuration of a registered AU.
- Extended display of HW errors in IP/FC switches

Update of the software base for M2000, HNC, X2000 and add-ons
- New Linux version SLES 15 SP4, adaptation of appliances to the new system interfaces, system hardening according to CIS rules

Support of current application units AU25 M7 and AU47 M7
- With support for ESXi 8.0

Realization of customer change requests

Further functional extensions can be found in the release notes for M2000, X2000 and HNC.

SE Server Unit SU730B

The SE /390-Server Units are characterized by a new processor module with 8 BS2000 CPUs. A SU730B has one or two system boards - each with one of these processor modules with 8 BS2000 CPUs. Depending on the configuration of the SU730B, one, several or all the CPUs of this module(s) are active.

The 8 CPUs of a system board now share a joint 2nd-level cache of 24 MB. Furthermore, the memory accesses within a system board are accelerated by the memory controller integrated in the processor chip.

The processing power of the SU730B is about 10% higher than that of the SU700, depending on the model. Additional performance gains result from a faster peripheral connection:
The I/O system of the SE Servers was newly designed. The 16 Gbit/s Fibre Channel channels of the SU710, SU730 and SE730B offer a significantly higher data rate. They are installed in channel boxes that are connected to the IOPs on the system boards via PCIe. Up to 4096 devices (LUNs) can be addressed per channel path to a controller.

SU730B supports Fast Dynamic PAV. FastDPAV provides high-performance parallel I/Os on one disk. This requires considerably fewer ALIAS devices than with PAV, which do not have to be assigned to the real LUNs either statically or temporarily.

Up to 15 CPUs are supported in a VM2000 guest system on a SU730B.
The SU730B models are equipped with a standby processor, which is activated dynamically if a processor fails and serves as a replacement for the defective processor. The applications can continue running without any interruption and without reduction in performance.
The optional CoD (Capacity on Demand) feature can be used to temporarily attach or detach additional CPUs without any system interruption. This enables the available performance to be flexibly matched to the changing needs of the application.
Model upgrades can easily be performed onsite.

The SU730B 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 256 GB in the SE730B servers and makes it possible to run several applications in parallel with large address spaces without any performance bottlenecks caused by intensive paging.

The network connection (LAN) of SE730B servers is implemented via the redundant Net Unit and one to four HNCs, of which one is already included in the server's basic configuration.

The Management Unit is used to operate, monitor, manage, diagnose and maintain the SE730B Business Server. A Management Unit is already included in the basic configuration of the SE730B.

The new modular design of the SE730B with a system cabinet on a standard rack basis saves considerable space and energy, while at the same time allowing additional components, such as the Net Unit, HNC and Management Unit to be integrated.

The following table describes the basic configuration of the Server Unit /390 in the different SE730B models.

Basic configuration SE730B

Model	Number of BS2000-processors[1]	Number of system boards [2]	Main memory in the basic configuration	Number of Channel boxes[3]	Number of FC Channels[3]
SE730B-10A	1	1	4 GB	2	14
SE730B-10B	1	1	6 GB	2	14
SE730B-10C	1	1	6 GB	2	14
SE730B-10D	1	1	8 GB	2	14
SE730B-20A	2	1	8 GB	2	14
SE730B-20B	2	1	8 GB	2	14
SE730B-20C	2	1	12 GB	2	14
SE730B-20D	2	1	12 GB	2	14
SE730B-30	3	1	24 GB	2	14
SE730B-40	4	1	24 GB	2	14
SE730B-50	5	1	32 GB	2	14
SE730B-60	6	1	32 GB	3	18
SE730B-70	7	1	48 GB	3	18
SE730B-100	10	2	48 GB	3	22
SE730B-120	12	2	48 GB	3	22
SE730B-140	14	2	64 GB	3	22
SE730B-150	15	2	64 GB	3	22
SE730B-160[4]	16	2	64 GB	3	22

1) All SE730B models except SE730B-160 are also equipped with a spare processor ("Hot Spare CPU")
2) Each system board has 2 IOPs, up to 8 BS2000 CPUs and up to 128 GB main memory.
3) Up to 8 channel modules, each with 2 FC channels, can be installed in each channel box; exception: the first slot in the first channel box is used by the system. Up to 8 channel boxes and up to 126 FC channels can be configured in an SE730B.
4) Available as special release only

SE Server Unit SU330B

The basis of the new SU330B Server Unit is formed by a high-end x86 server with four processors Intel® Xeon® Platinum 8444H with 16 cores and a frequency of 2,9 GHz. In addition to very high performance and scalability, this processor family also offers the best RAS features.
An additional firmware layer from Fujitsu ensures both the running of the BS2000 operating system and the fully object-compatible support of BS2000 customer applications on the SU330B. Under VM2000, up to 32 BS2000 guest systems can be used on an SU330B. Finally, the SU330B firmware also provides for the connection of the necessary peripherals for BS2000.
The SU330B has and supports the following components and features:

Processor
- Four Intel® Xeon® Platinum 8444H, 16 Cores, 2,9 GHz

Main memory
- 128 GB to 512 GB,
  built of the following DIMMs with 32GB
  2Rx8 DDR5-4800 R ECC

Up to 10 PCIe slots:
- max. 4x PCI-Express Gen4 x16, FH
- max. 6x PCI-Express Gen4 x 16, LP

One of the LP slots is occupied by the disk controller for the system disks. The connection to the Net Unit is made with a 4-port 1 GbE OCP controller. If the Net Unit is designed redundantly, an additional 4-port 1/10 Gbit/s FH Cu controller is required.
The further 9 slots can be equipped with the following PCIe controllers.

Supported PCIe controllers:
- 1-5 FC controllers LP LPe31002/LPe35002: 2 Port, 16 Gbit/s or 2 Port, 32 Gbit/s
- 0-1 FC controller, FH LPe31002/LPe35002: 2 Port, 16 Gbit/S or 2 Port, 32 Gbit/s
- 0-4 Ethernet controller FH: 4 Port, 10 Gbit/s RJ45 or 4 Port, 10 Gbit/s SFP+ LC

In sum a maximum of 4 FH-Controllers FC or LAN 10G

Disks, drives and others
- One integrated RAID SATA SSD 2,5″ 6G 960 GB as system SSD, mirrored to one more identical SSD
- RAID Ctrl PRAID EP640i LP with 6 Gbit/s SATA3 interface 6GB Cache and FBU
- DVD-RW drive
- 4 hot plug double fans (redundant)
- 2 hot plug power supplies each 1600 W Titanium (phase-redundant)

Interfaces and onboard controllers
Available for internal server use:
- VGA: for connection to KVM
- SATA: for DVD-writer
- SATA RAID: for the mirrored system disks
- IRMC: iRMC6 advanced pack + eLCM activation license
- LAN: 4 port 1GbE OCP

Internal Server peripherals for BS2000-use on SU330B (optional)

- Storage subsystem ETERNUS DX100 S5 (1 CM with FC 16 Gbit/s)
  One-path FC direct connection without switch, support for HDD and SSD, use as RAID system without SHC-OSD,
  for further technical data, see data sheet ETERNUS DX100 S5
- Magnetic tape cartridge system ETERNUS LT140-42U
  An LT140 can be operated through an FC connection via an FC switch or using a direct connection.
  Supported are LTO-7 and LTO-8 drives with 20 or 40 slots for cartridges. For further technical data see data sheet ETERNUS LT140.

These peripheral systems can also be operated on Application Units instead of the Server Unit. Their lifecycle corresponds to the SU330B lifecycle.

Basic configuration SE330B

For the lower and medium performance range, the SE330B models SE330B-10A to SE330B-10F are offered with 1 BS2000 processor, SE330B-20 with 2, SE330B-40 with 4, SE330B-80 with 8, SE330B-120 with 12 and SE330B-160 with 16 BS2000 processors.
The basic configuration of each SE330B model includes 128 GB of memory, of which 32 GB is used by the SU330B firmware. Of the remaining main memory for BS2000 systems, around 40% is required for JIT; slightly more than half of the total main memory is available for the operating system and applications. If required, each SE330B model can be upgraded to 256 or 512 GB memory.
By default, 16 GB of memory is allocated to the BS2000 system or each BS2000 guest system; this value can be increased to the maximum available memory.

The network connection (LAN) of the SE330B servers is realized via the Net Unit, which is designed for SE330B either as a single switch or as an option as a redundant switch pair.
In addition, direct connections from the SU330B LAN controllers to the customer network are possible.

The Management Unit is used to operate, monitor, manage, diagnoe and maintain the SE330B servers. A Management Unit is already included in the basic configuration of the SE330B.

System software for SE Server Units

BS2000 operating system	BS2000 OS DX V1.0 (native or as guest system under VM2000 V12.0) and BS2000 OSD/XC V11.0B (as guest system under VM2000 V12.0)
VM2000 [1]	VM2000 V12.0 with monitor system BS2000 OS DX 1.0
X2000 for SU330B	X2000 V6.5 is part of the SU330B Server Unit and is delivered installed on the SU without a separate order.

1) for models SE330B-10A to SE330B-80 as option for models SE330B-120 and SE330B-160 neccessary

Management Unit (MU M5)

Each server SE330B and SE730B is delivered with one MU.
- 19" rack module (1HE)
- 1 Processor Intel® Xeon® 5418Y, 24C, 2.0 GHz
- 64 GB main memory
- Optionally an additional processor of the same type and another 64 GB of main memory
- 2x SATA SSD 2.5" 6G with 960 GB each as system SSDs, mirrored on 2 additional identical SSDs
- RAID Ctrl PRAID EP640i LP SAS 4GB
- DVD-RW supermulti ultra slim SATA writer
- 4/8 hot plug fans redundant
- 2 redundant power supplies Titanium with 500 W each

Interfaces and controllers (only for internal server use):

LAN	PLAN CP 4 * 1 Gbit/s Cu Intel i350-T4 OCPV3
VGA	For connecting the KVM
SATA	For the DVD-writer
SATA RAID	For the mirrored system disks
iRMC	iRMC6 advanced pack + eLCM activation lisence
FC	0-2 * LPe31002 2 ports MMF LC

Optionally, a second redundant Management Unit can be used. For this and for clusters with up to eight SE Servers, an FC connection to the Configuration Raw Device (CRD) is required.
Recommendation: 2-path connection between CRD and each MU. 1-2 FC controllers LPe31002 are required for the connection.

System software for SE Management Units

- MU-Software:
  M2000 V6.5 is part of each Management Unit of a SE330B or SE730B and is delivered without extra order.
- Remote service for SE servers is realised via AIS Connect, which is integrated in the Management Unit and activated by Fujitsu Service in consultation with the customer when the server is installed.
  AIS Connect ensures automatic notification of Fujitsu Service in the event of faults and enables service staff to collect relevant diagnostic information on the affected systems in cooperation with the customer. AIS Connect speeds up and simplifies problem resolution for BS2000 hardware and software. The use of AIS Connect is a prerequisite for maintenance contracts with guaranteed recovery time.
- Add-on Packs (for versions see the release notes):
  o StorMan is part of the basic configuration of the SE Servers; if required by new peripheral devices or a new StorMan version, newer StorMan-versions should be retrofitted later.
  o openSM2 web interface to measure performance, optional, part of openSM2 (BS2000)
  o ROBAR Server to control the tape library, optional
  o open UTM WebAdmin to administer openUTM, optional
  o SEHABASIS/SEHAMONITOR for the implementation of a monitoring solution (service offering)
  o NUXC Add-on, SEM Support for Net Unit Expansion with Cisco Switches (Service Offer)

Net Unit (NU M3)

The Net Unit makes it particularly easy to set up, administer and monitor data and administration networks via the SE Manager.

- LAN switch Juniper EX3400-48T-AFI with 48 1 Gbit/s ports RJ45, 2 redundant power supplies
- A redundant additional switch is part of the basic configuration for SE730B, optional for SE330B.
- The Net Unit is connected to the Server Unit and to each Application Unit in the SE Server via their onboard and PCI controllers (pre-configuration in the factory).
- two 40 Gbit/s QSFP+ for Twinax connections between 2 redundant switches of a NU.
- four ports 1 Gbit/s SFP or 10 Gbit/s SFP+ for ISL-E connections between NUs in the cluster and for optical uplinks (untagged) into customer data networks
- Up to 8 x 1 Gbit/s Cu connection ports (untagged) as uplinks in customer data networks, the administration network and a separate operator network (optional). Further 1 Gbit/s Cu connection ports can also be used for ISL-E connections to another NU in a cluster.

Net Unit Expansion with Cisco Nexus® Switches

(Optional)
Additional customer requirements for the network connection of SE units can be realized by extending the Net Unit with Cisco switches.

- Net Unit connections with 10 Gbit/s
- Use of tagged VLANs for logically separated networks
- Physically separated data networks
- High connectivity and performance for very large SE infrastructures
- Network administration with the Cisco tools, together with other Cisco-based network infrastructure in the customer network

Fujitsu therefore offers, together with the customer

- To work out a customer-specific optimal network connection
- To set up, cable and configure the necessary Cisco switches during the production of the SE Server, and
- To put these switches into operation at the customer's site and to support them during the operating phase.

In the SE Manager, this service is supplemented by functions for HW overview of the switches used, overview of the configured networks, status monitoring, remote service and interfaces for configuration backup and firmware updates.
The following NU extensions are offered

- Cisco Nexus® 93180YC -FX, 48 x 1/10/25 Gbps fibre ports and 6 x 40/100 Gbps QSFP28 ports
- Cisco Nexus® 9348GC-FXP, 48 x 100M/1G BASE-T ports, 4 x 10/25-Gbps SFP28 ports and 2 x 40/100-Gbps QSFP28 ports
- Operation with NX-OS V9.3.6 and higher

The exact description of the switches can be found in the Cisco data sheet for the switches of the Nexus® 9300 series.

High-speed Net Connect HNC M5

Every SE730B server is supplied with a HNC, which is connected to the Net Unit.
- Rack-server 19" (1U)
- 2 Processors Intel® Xeon® 4410T, 10C, 2.7 GHz
- 64 GB main memory
- 1x SATA SSD 2.5" 6G 960 GB as system SSD, mirrored on a second additional identical SSD, hot plug capable
- RAID Ctrl PRAID EP640i LP SAS 4GB
- DVD-RW supermulti ultra slim SATA writer
- 8 hot plug fans (redundant)
- 2 redundant power supplies Titanium HP each 900 W

Interfaces and controllers (only for internal use)

LAN	1 * PLAN CP 4 * 1Gbit/s Cu Intel i350-T4 OCPV3
VGA	For connection to KVM
SATA	For the DVD-writer
SATA RAID	For the mirrored system disks
iRMC	iRMC6 advanced pack + eLCM activation lisence
FC	1x FC Ctrl LPe31002 2 ports MMF LC

As standard, a HNC is directly connected to an FC port of the SE730B via a single path; as an option, a second FC connection is possible, increasing redundancy and capacity. The connection to the Net Unit is made with the 4 * 1 Gbe OCP controller. This controller is already part of each HNC

Max. 2 Ethernet controllers per HNC are possible thus; another Ethernet controller can be configured additively. The following controllers are available:
- 0-2 * 4 ports, 1/10 Gbit/s, Cu (PLAN EP X710-T4L 4x10GBASE-T LP)
- 0-1 * 4 ports, 10 Gbit/s, SFP+ (PLAN EP X710-DA4 4x10Gb SFP+ LP)
- 0-1 * 4 ports, 10 Gbit/s OCP (PLAN EP X710-DA4 SFP OCPV3)

As an option, 1-3 additional HNCs can be configured to increase performance and redundancy as well as additional LAN ports.

System software for HNCs

HNC software: HNC V6.5 is installed on the HNCs of a SE730B and delivered without extra order.

SE Application Units

Application Unit AU47 M7 (optional)

High-End x86 Server, based on PRIMERGY RX4770 M7
- System board for 2 or 4 Intel® Xeon® scalable processors
- 64 slots for up to 16 DDR5 DIMM modules
- Up to 24 slots for hot-plug 2.5" SAS/SATA HDD/SSD or PCIe SSD
- 4 hot plug double fans (7 + 1 redundant)
- 2 hot plug power supplies (redundant)
- Up to 11 PCIe Gen5 slots
- For more details see data sheet RX4770 M7
- The associated SE AU47 Premium Service is required for the operation of each AU47 M7

Application Unit AU25 M7 (optional)

Dual-Socket x86 Rack-Server, based on PRIMERGY RX2540 M7
- System board for 1 or 2 Intel® Xeon® scalable processors
- 32 slots for up to 8 TB DDR5 ECC RAM
- Up to 24x 2.5″ SAS/SATA hot plug HDD/SSD or PCIe SSD
- 3 hot plug fans per CPU, redundant
- 2 power supplies, (redundancy)
- Up to 8 PCIe-Gen5 Express slots
- For more details see the RX2540 M7 data sheet
- The associated SE AU25 Premium Service is required for the operation of each AU25 M7

Software for Application Units

For AU25 and AU47 the following software is supported

- SUSE Linux Enterprise Server
- Microsoft Windows Server
- VMware vSphere® ESXi
- Microsoft Windows Hyper-V Server

The supported versions are listed in the release notes of the MU software M2000.
More operating systems and virtualization products for use on Application Units on demand.

In total, the SE Manager supports the display of up to 1500 virtual machines of Application Units.
The number of AUs that can be connected to an SE Server depends on the type of AU and can be taken from the current release note for M2000.

Installation data

SE730B basic configuration	
SE730B System Cabinet	
Width	700 mm
Depth	1110 mm
Height	2000 mm
Maintenance area	front: 740 mm, rear: 800 mm sideways right: 60 mm (to open the door completely) sideways left or right 700 mm
Weight	615 kg (SE730B full configuration with 2 system boards, 16 CPU, 256 GB memory, 8 channel boxes with 8 FC-channels each, 1 MU, 1 HNC, 1 NU, rack infrastructure)
Rated voltage	200-240V±10%
Power connection options	The SE730B is connected via four 1-phase connections CEE plug blue (small), 16A. If additional units are added, e.g. in an expansion rack, further 1-phase connections CEE plug blue (small), 16A are required depending on the configuration. Only these additional connections can alternatively be configured with a red three-phase connection. See below for power consumption of optional expansions.
Power cable length	Power cable, 4 m long
Frequency	50 Hz - 60 Hz
Power consumption, max.	3,4 KVA (SE730B full configuration with 2 system boards, 16 CPU, 256 GB Speicher, 4 channel boxes with 8 FC-channel each, 1 MU, 1 HNC, 1 red. NU, rack infrastructure, at 30°C)
Heat generation, max.	12300 kJ/h
Sound pressure (LpAm)	Server Unit SU730B: 60 dB(A) See below for data of the other basic configuration components.
Operating temperature	10°C to 32°C
Standards	CE Class A (*) CB, RoHS, WEEE

SE330B basic configuration

SE330B System Cabinet

Width	700 mm
Depth	1100 mm
Height	2000 mm
Maintenance area	front: 740 mm, rear: 800 mm sideways right: 60 mm (to open the door completely) sideways left or right: 700 mm
Weight	235 kg (SE330B with SU330B (4 CPU; 512 GB memory; 10 PCIe controller), 1 MU, 1 NU, rack infrastructure)
Rated voltage	200-240V±10%
Power connection options	The SE330B is usually connected via two or four 1-phase connections CEE plug blue, 16A. Alternatively, two 3-phase connections CEE plug red 3x 16A can also be configured for SE330B and the optional extensions installed in it. See below for the power consumption of optional extensions.
Power cable length	Power cable, 4 m long
Frequency	50 Hz - 60 Hz
Power consumption, max.	2300 VA (SE330B with SU330B (4 CPU; 512 GB memory; 10 PCIe control- ler), 1 MU, 1 NU, rack infrastructure; at 30°C)
Heat generation, max.	8300 kJ/h, at 30°C
Sound pressure (LpAm)	Server Unit: SU330B: typical 47,7 dB(A) See below for data of the other basic configuration components.
Operating temperature	10°C to 35°C
Standards	CE Class A (*) CB, RoHS, WEEE

Server Unit SU330B

Weight, max.	40 Kg
Rated voltage range	100 – 240 V
Power connection options	As described for the basic configuration SE330B and SE730B
Rated frequency range	50 Hz – 60 Hz
Power consumption, max.	1600 VA (SU330B with 4 CPU; 512 GB memory; 10 PCIe controller; at 30°C)
Heat generation, max.	5760 kJ/h, at 30°C
Sound pressure (LpAm)	Typical 47,7 dB(A), (typical value)
Operating temperature	10°C to 35 °C
Standards	Global: CB, RoHS, WEEE, EUROPE: CE Class A (*)

SE optional extensions

SE Extension Rack	This rack is used in configurations, which exceed the first SE Server rack (system rack). Up to three extension racks can be used in one SE Server.
Width	700 mm
Depth	1110 mm
Height	2000 mm
Maintenance area	front: 740 mm, rear: 800 mm sideways right: 60 mm (to open the door completely) sideways left or right: 700 mm
Weight	140 kg (without mounted units)
Power connection options	The electrical connections of the optional components in the SE extension rack are configured customer specific. Power strips with single-phase blue small CEE plug (16A) or with 3-phase red small CEE plug (3x 16A) are available. The power consumption of the optional components can be found below.

Management Unit MU M5	
Weight	max. 18 kg (depends on configuration)
Rated voltage range	100 – 240 V
Power connection options	As described for the basic configuration of SE330B and SE730B
Rated frequency range	50 Hz – 60 Hz
Power consumption, max.	500 VA, at 30°C
Heat generation, max.	1800 kJ/h, at 30°C
Sound pressure (LpAm)	44 dB(A), (typical value)
Operating temperature	10°C to 35°C
Standards	Global: CB, RoHS, WEEE Europe: CE

Net Unit NU M3	Juniper EX3400-48T-AFI, 48 ports 1 Gbit/s RJ45 Optionally: 4x 1/10 Gbit/s SFP/SFP+; 2x 40 Gbit/s QSFP+
Weight	Approx. 6,2 kg (depends on configuration)
Rated voltage range	100 – 240 V
Power connection options	As described for the basic configuration of SE330 and SE730
Rated frequency range	50 Hz – 60 Hz
Power consumption, max	120 VA
Heat generation, max.	430 kJ/h
Sound pressure (LpAm)	39 dB(A)
Operating temperature	10°C to 35°C
Standards	RoHS, WEEE CE Class A (*)
Note:	The mentioned values apply for Net Units consisting of one switch. Redundant Net Units and port extensions consist of additional switches, whose values need to be added.

HNC M5	
Weight	Max. 18 kg (depends on configuration)
Rated voltage range	100 – 240 V
Power connection options	As described for the basic configuration SE730B
Rated frequency range	50 Hz – 60 Hz
Power consumption, max.	610 VA, at 30°C
Heat generation, max.	2200 kJ/h, at 30°C
Sound pressure (LpAm), max.	44 dB(A), (typical value)
Operating temperature	10°C to 35°C
Standards	Global: CB, RoHS, WEEE Europe: CE

Net Unit extension Cisco 1/10 Gbit/s	Nexus 9348GC-FXP
Weight	Configuration dependant ca. 6,5 kg
Rated voltage range	100 – 240 V
Power connection options	As described for the basic configuration SE330B and SE730B
Rated frequency range	50 Hz – 60 Hz
Power consumption	178 VA (typical), 287 VA (max.)
Sound pressure (LpAm)	67,5 to 81,6 dB(A) (50% to 100% fan speed)
Heat generation, max.	0°C to 40°C

Net Unit extension Cisco 10/100 Gbit/s	Nexus 93180YC-FX.
Weight	Configuration dependant ca. 8 kg
Rated voltage range	100 – 240 V
Power connection options	As described for the basic configuration SE330B and SE730B
Rated frequency range	50 Hz – 60 Hz
Power consumption	260 VA (typical), 425 VA (max.)
Sound pressure (LpAm)	57 to 77,4 dB(A) (50% to 100% fan speed)
Heat generation, max.	0°C to 40°C

SE Application Units

Application Unit AU25 M7	PRIMERGY RX2540 M7
Weight	Up to 32 Kg
Rated voltage range	100 – 240 V
Power connection options	As described for the basic configuration SE330B and SE730B
Rated frequency range	50 Hz – 60 Hz
Power consumption, max.	2635 VA
Heat generation, max.	9389 kJ/h
Sound pressure (LpAm)	Typical 41,2 dB(A)
Operating temperature	10°C to 35 °C
Standards	Global: CB, RoHS, WEEE, Europe: CE, Germany: GS
Further data on AU25 M7 can be found in the PRIMERGY RX2540 M7 data sheet.	

Application Unit AU47 M7	PRIMERGY RX4770 M7
Weight	Up to 40 Kg
Rated voltage range	100 – 240 V
Power connection options	As described for the basic configuration SE330B and SE730B
Rated frequency range	50 Hz – 60 Hz
Power consumption, max.	3775 VA
Heat generation, max.	13320 kJ/h
Sound pressure (LpAm)	Typical 47,7 dB(A)
Operating temperature	10°C to 35 °C
Standards	Global: CB, RoHS, WEEE, Europe: CE, Germany: GS
Further data on AU47 M7 can be found in the PRIMERGY RX4770 M7 data sheet.	

(*) Information on the operation of Class A products in residential areas:

The SE Servers and their components are Class A products. They can cause interference when used in residential areas. If necessary, the user must take special measures to reduce electromagnetic emissions in order to avoid interference when receiving radio and television broadcasts.