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NETWORK

Basically the following points should be taken into consideration when planning the network:

- Number of workstations
- Expected average number of customers
- Expected full capacity in peak periods
- Security requirements during operation

The system must not be overloaded in peak periods. Particularly during peak periods a standstill of the rental operation due to overloading the network would lead to chaos. The network and computers should correspondingly not be planned too tightly. Even in the case of a two workstation system (cash desk and workbench) a server is recommended if both workstations are continually at full capacity during peak periods.

Minimum	Recommended
100Mbit/s – Fast Ethernet	1000Mbit/s – Gigabit Ethernet
Hub with Autosensing	Switch
Cat5 UTP (Unshielded twisted pair)	Cat5e/Cat6 STP (Shielded twisted pair)
All unnecessary network protocols should be uninstalled/deactivated (E.g.: QoS for VoIP).	

- A Server offers speed, it should be used exclusively for S|R database access and branch networking
- If printers are attached to the computer that holds the database, make sure that print jobs don't overload the computer or the network
- A separate printer should be connected at each workplace where printouts are to be made. E.g.: If you have two cash desks, each should have a printer
- A separate print server is recommended if you have a large number of printouts
- EPSON TM-T88V cash desk printer are fast and relieve the printing process

Internet Access is mandatory for online support!

COMMUNICATION RIGHTS

- Unrestricted HTTP communication between client and server on the defined port
Default is TCP port 8000 for SrServer (can be configured manually)
- No restrictions from tools like firewalls, proxies or antivirus solutions, blocking the communication between S|R client and the Server
- If applicable check Windows Internet Explorer connection settings
- Create exceptions to exclude the S|R directory/services from being blocked by third party software
- For automatic updates access to TCP Port 80, execution rights for SrLoader.exe and access to the following domains:
<http://www.sports-rental.info>
<http://www.sportsrental.de>

NUMBER OF WORKSTATIONS

Up from two users and three or more workstation we recommend to use a dedicated server for the database.

WINDOWS COMPONENTS

Mandatory	.NET Framework 3.5 .NET Framework 4.0 Microsoft Internet Explorer 6 or higher Windows PowerShell 1.0: http://support.microsoft.com/kb/968929 Windows Installer 4.5 or higher: http://support.microsoft.com/kb/942288
SQL Server	Microsoft SQL Server 2008 R2 Express or Standard Collision free installation! Please note Microsoft restrictions for existing MSSQL installations!

SERVER

In principle it is an advantage if the network has a server that provides the workstations with the database. Operation with a dedicated server is quicker and if one of the workstations should fail, the others can continue operating.

Recommended Hard- and Software dependent on speed for requests and amount of workstations:

	Minimum	Recommended	2 Workstations	3 Workstations	5 Workstations	> 5 Workstations
OS	Windows 7 or Server 2008 R2	>= Server 2008 R2	>= Windows 7	>= Server 2008 R2	>= Server 2008 R2	>= Server 2008 R2
CPU	1GHz x86 1,4GHz x64	>= 2GHz	>= 2GHz	>= 2GHz	>= 2,4GHz	>= 2,4GHz
RAM	2GB	>= 4GB	>= 4GB	>= 8GB	>=8GB	>= 8GB
HDD	80GB	320GB	320GB	500GB	500GB	1TB
NIC	100Mbit/s	1000Mbit/s	1000Mbit/s	1000Mbit/s	1000Mbit/s	1000Mbit/s Second NIC

The minimum requirement for a server operating system is Windows Server 2008 R2 Standard. Remember that the mainstream support will be canceled after 13th January 2015 for Windows Server 2008 R2!

The lifecycle of your server version can be checked under: <http://support.microsoft.com/lifecycle/>

WINDOWS WORKSTATION OR SERVER LICENCE?

Windows operation systems are divided between Windows Workstation and Windows Server. One can use the Windows Workstation Operating System for S|R database usage!

If you use Windows 2008 R2 Standard Server, a trained administrator has to set up and administer the network and be continually available for servicing. Authorization allocation must be carried out correctly. Otherwise, this can slow down the network considerably.

In case of use of **Windows Terminal Server**: Check if USB devices will work. Windows Terminal Server usually does not redirect USB devices. USB webcams can be used with S|Rs integrated NetCam functionality. USB scanners can be used with Terminal Server if the scanner driver allows serial or keyboard emulation.

CLIENT

	Minimum	Recommended
OS	Windows 7	>= Windows 7
CPU	1GHz x86 1,4GHz x64	>= 2GHz
RAM	2GB	>= 4GB
HDD	80GB	>= 320GB
NIC	100Mbit/s	>= 1000Mbit/s
Display	Resolution of 1024x768px	>= Resolution of 1024x768px
Serial, Parallel, USB Ports and other interfaces	Dependent on the number/type of printers and additional connected devices like cash drawer, ID scanner etc.	

Clients and Tablets (for example the Microsoft Surface Pro) running Windows 8.1 are also an option.

Important: Windows RT running on ARM architecture is not supported by S|R!

DEVICES

All named products are recommendations. There are other products which might be equal or better. All hardware devices are optional, dependent on the shop and workflow requests.

We recommend to use a Barcode Reader and an EPSON cash printer for fast receipt printouts. Additional in the office a standard Windows printer for reports and listings.

Device	Explanation	Examples
Barcode Reader / Scanner	Barcode Reader / Scanner <ul style="list-style-type: none"> Has to read Code39 and Code128 Programmable for Header (start character) / Trailer (Enter) 	Datalogic Gryphon Metapace S1 (nearly all readers)
CHIP SCANNER (Barcode + Chip Reader)	Datalogic Chipreader Reads Barcodes AND Chip Needs Serial port (COM Port)	Distributed only by S R Dealers
Credit Card Reader	Magnetic stripe reader for Tracks 1 + 2	
Cash drawer	Cash drawer Needs USB / Serial port (COM Port)	
Cash display	Cash display Needs USB / Serial port (COM Port) or EPSON port	
ID Scanner	Scanning passports / driving licenses as authentication and for reading customer address data.	Distributed only by S R Dealers
Touchscreen		Touch POS 15" (1024x768px)
Keyboard	Programmable keyboard <ul style="list-style-type: none"> Glide pad (mouse) Magnetic stripe reader Programmable function keys 	Cherry SPOS
Printer	Fast cashier printer for receipts	EPSON TM-T88V
	Standard printer for listings or receipt printouts with larger formats	Any Windows inkjet/laser printer
	Label printer For customer, service and pricing labels	Zebra GTX420t
Signature Pad	For taking the customers signature.	Distributed only by S R Dealers
Webcam	For taking customer pictures.	External USB Webcams are recommended.

SECURITY REQUIREMENTS

- UPS (uninterruptible power supply) at least for the computer with the database. Corresponding software for controlled shutdown of the computer.
- S|R continually backs up the database daily. An additional backup, for example on an external hard drive, is a good idea to prevent loss of data caused by hardware errors such as a hard disk crash.
- All Windows updates should be installed in a timely manner

Virus scanners, or any other security software, should NOT be used scanning the S|R directory! Depending on the type of virus detection, the rental process will be slowed down dramatically!