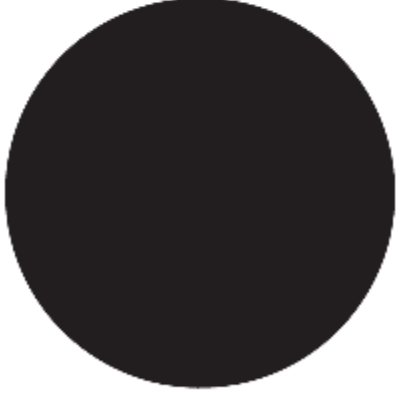
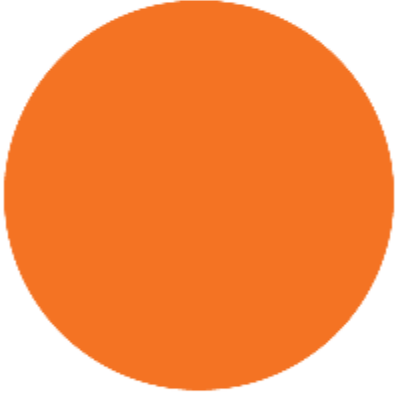




SmartLink 2.1
Technical Folder – Technical Requirements – EN – v1.2



DOCUMENT INTENDED PURPOSE AND READERS

This document lists the minimal environmental requirements (Hardware, Operating Systems, Networking,) to be set up to install and run SmartLink 2.1 and its components.

This document purpose is to provide useful information to communicate or check the SmartLink 2.1 operating environment in order to market the product, install and give technical support.

Concerned readers of this document are Mindray sales, marketing, technical operators involved in SmartLink projects, commercial offers, installation and maintenance.

CHANGES OF THIS DOCUMENT FROM THE PREVIOUS SOFTWARE VERSION (2.0)

This document has been updated inserting in the Paging devices table the new models of tested Smartphones . It has been inserted also a new table concernig the Data sources connected with Smartlink.

DOCUMENT FIRST ISSUE

Document Name	Version	Date
1.09.1 - SL2.1 - Technical Requirements	EN-v1.0	24 ago 2015

DOCUMENT REVISIONS

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1.09.1 - SL2.1 - Technical Requirements	EN-v1.1	02/11/15
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SMARTLINK 2.1 TECHNICAL FOLDER TECHNICAL REQUIREMENTS

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NOTICE

The listed requirements are intended as minimal requirements.

In the following tables:

- “<undefined>” means that there's no need for a special brand or model,
- “<not allowed>” means that this feature has not to be present (possible malfunctioning),
- “<not used>” means that the feature can be installed but will not be used by SmartLink 2.1.

Other features have not been listed since they either don't affect any internal test result or are not clearly related to possible interferences with SmartLink's 2.1 operation.

SERVERS & CLIENTS

Servers & Clients	Server (single PC)	Server (virtualized) single virtual machine	Client (single PC)	Required when installing			
				Smart Waves	Smart Alarms	Smart Reports	Smart Pager
Brand	<undefined>	<undefined>	<undefined>	X	X	X	X
Model (Type)	<undefined>	<undefined>	<undefined>	X	X	X	X
Version	<undefined>	<undefined>	<undefined>	X	X	X	X
Processor	2 x intel core i5	2 processors	1 x intel core i5	X	X	X	X
RAM (32bit OS)	3 Gbyte	3 Gbyte (Note 1)	3 Gbyte	X	X	X	X
RAM (64bit OS)	8 Gbyte	8 Gbyte (Note 1)	8 Gbyte	X	X	X	X
Storage (available disk space)	60 Gbyte (Note 1)	60 Gbyte (Note 1)	20 Mbyte	X	X	X	X
Graphic card	<undefined>	<undefined>	1280x800 with 512 Mbyte (or more) dedicated memory	X	X	X	X
Virtualization O.S.	<not allowed>	ESX/5.5.0 VMware virtualization system (or later)	<not allowed>	X	X	X	X
Operating System	Windows 7 professional, Windows 8 professional, Windows server 2008 or later	Windows 7 professional, Windows 8 professional, Windows server 2008 or later	Windows 7 professional, Windows 8 professional	X	X	X	X
Web server	IIS 6 or later	IIS 6 or later	<not used>	X	X	X	X
Internet Browser	Internet Explorer 9 or later (Note 2)	Internet Explorer 9 or later (Note 2)	Internet Explorer 9 or later	X	X	X	X
Wired network card # 1 – server (dedicated to CMS connection)	1000 Mbps	1000 Mbps	<not used>	X	X	X	X
Wired network card # 2 – server or wired network card – client (Hospital network connection)	100 Mbps	100 Mbps	100 Mbps	X	X	X	X
Available bandwidth on wired server's network card #2 or on wired client's network card	50 Mbps	50 Mbps	400 Kbps	X	X	X	X

(Note 1) The required available disk space is enough to store: software applications, database, 31 days of data received from 31 patient monitors. Additional storage space can be added: the additional disk space to store 1 day of data received from 1 patient monitor is about 25 Mbyte.

For Virtual Machines, the required amount of RAM has to be intended as reference: depending on the configuration of the server that hosts the virtual machines and on the configuration of the virtual machines, the required amount of RAM might be smaller.

To define the right RAM amount for virtual machines, benchmark tools generally provided by the virtual machines producers shall be used.

(Note 2) The internet browser can be executed to run the SmartLink client from inside the SmartLink server ONLY FOR MAINTENANCE AND TROUBLESHOOTING.

SmartLink client execution is NOT ALLOWED on the SmartLink server for any other purposes.

NETWORKS

Networks	Wired Network	WiFi Network	3G Network (Note 3)	Required when installing			
				Smart Waves	Smart Alarms	Smart Reports	Smart Pager
Connection between Central Station (Hypervisor) and SmartLink's server	Dedicated connection 1000 Mbps certified	<not allowed>	<not allowed>	X	X	X	X
Connection between SmartLink's server and the Hospital Network.	100 Mbps	<not allowed>	<not allowed>	X	X	X	X
Connection between SmartLink client and the Hospital Network (see Note 4 for RDP connections)	100 Mbps (SmartLink's server and clients shall be connected to the same LAN/VLAN). (From the outside a VPN connection is required).	20 Mbps (SmartLink's server and clients shall be connected to the same LAN/VLAN) (From the outside a VPN connection is required). 2.4 or 5 GHz frequency. 802.11 a/b/g/n	Download speed (per each connection) > 2 Mbps; upload > 256 kbps (SmartLink's server and clients shall be connected to the same LAN/VLAN) (From the outside a VPN connection is required).	X	X	X	X
Connection between paging devices (see dedicated section for list) and SmartLink's server	<not allowed>	1 Mbps (Note 5)	Download speed > 300 Kbps; Upload > 50Kbps. (Note 6)				X

(Note 3) Using 3G connection waveforms display might appear jerking or stopping and restarting.

(Note 4) RDP (Remote Desktop) connections can be used to run the SmartLink client (Windows .NET application) using devices with operating systems other than Windows (Apple, Android).
 A separate PC is recommended for this solution: the PC will be equipped with Windows Server O.S. and a number of allowed users equal or greater than the number of the possible RDP connections.
 Each user will run his own separate RDP session and, inside this session, the SmartLink client.

(Note 5): The specified WiFi network speed is enough to support up to 10 paging devices at the same time.
 In case of additional paging devices, add 100 Kbps of speed for each added device.

(Note 6): The specified 3G network speeds are enough for one paging device connected through the 3G network.

PAGING DEVICES

Paging Devices (Note 7)	Smart phones	Required when installing			
		Smart Waves	Smart Alarms	Smart Reports	Smart Pager
Brand	Samsung				X
Model(s)	Galaxy S3 mini Galaxy S3 neo Galaxy Xcover2 Galaxy Grand Neo Galaxy Xcover3 Galaxy Core Prime				X
Operating System	Android 4.1 or later				X
Conditions of use	Exclusive – dedicated to SmartLink paging				X

PRINTING DEVICES

Printing devices	Printers	Required when installing			
		Smart Waves	Smart Alarms	Smart Reports	Smart Pager
Brand	<undefined>			X	
Type	color printer			X	
Technology	InkJet or Laser			X	

DATA SOURCES

Data Sources	Version	Required when installing			
		Smart Waves	Smart Alarms	Smart Reports	Smart Pager
Mindray CMS	06.10.00	X	X	X	X
Mindray PDS Gateway	06.08.00	X	X	X	X
Mindray eGateway	5.2 or 5.3		X		X
Capsule Technologies Data Captor	5		X		X



Software Team srl

Via Carducci, 39
20099 Sesto San Giovanni
Milano (Italy)
Phone +39 02 84148166
softwareteam@swt.it
www.swt.it