

Most Frequently asked IT questions about *syngo* WebSpace

1. What client is required for *syngo* WebSpace?

The remote client becomes a Rich-Thin-Client. This means a software package has to be permanently installed on the remote PC. This software (SW) package is downloadable (20 MB) from the server, which is integrated in the network with a certain IP. The Rich-Thin-Client is like a dedicated windows application that interacts with the server using a proprietary, interactive streaming protocol to send requests and commands to the server. It transfers all user interactions to the server, where all rendering jobs and data handling are done. The rendered images are then transferred as a stream back to the Rich-Thin-Client.

2. Does *syngo* WebSpace need separate cables or reserved lines?

On the one side, the *syngo* WebSpace server has to be connected to the CT scanner either by the Siemens real-time connection or by a DICOM connection. On the other side, the server has to be linked to the intranet or internet, because the connection between the *syngo* WebSpace server and remote clients is facilitated via the internet protocol. For both connections, a usual Ethernet connection is sufficient. A 1GB connection is highly recommended for both. If *syngo* WebSpace is to be used in the internet (outside the local intranet) we strongly recommend a virtual private network (VPN) which provides sufficient data encryption. We do not provide the infrastructure (e.g. VPN) for such remote access. It has to be provided by the local network administrator.

3. Do we as customers need additional Hardware (HW)?

syngo WebSpace consists of a *syngo* WebSpace server and a *syngo* WebSpace SW, which are sold only in a package. The server HW is a standard hp server with specialized highly sophisticated graphics accelerator cards, which ensure the high image quality and the high rendering performance. This HW configuration is validated and designed to ensure overall high performance. *syngo* WebSpace has not been validated with different HW from other vendors.

4. What Hardware requirements are there for the client computers?

syngo WebSpace is designed for Windows (Win 2000 or Win XP) with at least 512 MB RAM, 1GHz CPU and a Graphics card that supports Open GL 1.2. It is not designed for the Apple or Unix, or Linux, Operating Systems. However, for Intel based Apple Computers, "Parallels Software" and Win XP is a proven solution. Windows Vista is not supported in the current version, but will be supported in the upcoming version.

5. How much bandwidth does *syngo* WebSpace need in-house and remote?

Most of the hospitals have a 1GB backbone, but only 100 MBit for the clients. To date, not many hospitals offer their staff so far a VPN access from home to the hospital network, but several are willing and therefore want to know which bandwidth they should choose.

It's highly recommended to apply the *syngo* WebSpace server to the 1Gbit backbone, in order to ensure that all concurrently logged in clients get sufficient bandwidth and to ensure the data transfer from one or several scanners and to one or several PACS nodes works with reasonable performance. For the client connection, a 100 MBit bandwidth is sufficient. To connect from home to the *syngo* WebSpace server, a bandwidth of at least 2 MBit should be available. In addition, the used VPN software is a critical topic in this respect and can limit the residual bandwidth significantly. With a remote bandwidth of 6 or more MBits, *syngo* WebSpace works reasonably well.

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6. Does *syngo* WebSpace provide an interface for our User Management Server?

Due to their PACS and RIS environments, most hospitals have existing user management systems, which regulate authentication and authorization (e.g. LDAP server).

syngo WebSpace can not access an existing user management server, because it does not support Active Directory yet. But one can set up a bunch of user groups and accounts with appropriate permissions. If *syngo* WebSpace gets launched via PACS, those authentications are applied. The accounts and permissions of the user groups and their members have to be manually maintained however. There is no auto-synching between the two *syngo* WebSpace servers.

7. Can *syngo* WebSpace be used as archive or only as temporary storage?

Several hospitals have a special server to store their thin slices temporarily and delete them afterwards. Others send all their thin slices into PACS.

syngo WebSpace is ideal to replace the existing thin-slice storage. It can be used as temporary thin slice storage with a standard storage capacity of 800 GB (= 1 600 000 CT images). This can be extended to 1, 7 TB (3 400 000 CT images) or 4, 9 TB (9 800 000 CT images). *syngo* WebSpace stores these images on a RAID 5 system (one hard disk can fail without data loss), but doesn't archive them. In order to get the image data securely archived, the thin slices must be forwarded to PACS or a Long Term Archive. *syngo* WebSpace has not yet been tested to support a Storage Area Network (SAN) or Network Attached Storage (NAS) of the hospital environment.

8. Can *syngo* WebSpace be integrated in our PACS SW?

Most of the PACS solutions offer the possibility to incorporate third-party SW via a command line or defining a macro.

syngo WebSpace uses this very simple command line interface. The interface facilitates the launch of the *syngo* WebSpace client. Furthermore *syngo* WebSpace receives information about the patient and the current case. Thereby the client can display the same case as the the PACS. So far, we have successfully tested a PACS integration with Siemens PACS, Emageon PACS and Agfa PACS.

9. How does *syngo* WebSpace handle the virus protection, backup utilities and Microsoft hotfixes?

Some hospitals have contracts with certain virus protection SW companies, therefore they want to use their existing product. Also many of the administrators switch their network to automated downloading of hotfixes.

Siemens offers the Trend Micro virus protection SW in the standard bundle. It can be switched off by the administrator, if the customer doesn't want to use it. In case the administrator wants to install his own virus protection software, he is doing it at his own risk. Generally, all brand name virus checkers are ok. *syngo* WebSpace offers a back-up tool for patient data, for configuration data, but not for the patient images. These have to be back-uped manually.

For software upgrades, we can ensure that all data are saved and can be recovered after the upgrade. The Microsoft hotfixes are validated on a regular basis at Siemens and the administrator is informed about the validated hotfixes.

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10. Is *syngo* WebSpace capable to do 2D reading?

We can generate screenshots or MPR ranges with *syngo* WebSpace, both are stored as DICOM secondary captures (2D images). 2D images and DICOM secondary captures can not be viewed with the current WebSpace version (Displaying of secondary objects will be possible with the completion release), but as DICOM objects they appear in the patient browser and can therefore be manually stored back to the PACS which appear as a new DICOM series under the DICOM study to which the original series belonged.

11. How can images be deleted from the *syngo* WebSpace server?

The administrator owns the permission to delete images. Besides this you can configure an auto delete mechanism, which starts to delete images when the data base is filled up to a configurable level. If a second configurable level is reached, *syngo* WebSpace refuses to accept further images. The auto delete mechanism deletes just unprotected patient data until the data base volume moves under the first level. The criterion for the deletion is the date the data appeared at the *syngo* WebSpace server; deletion starts with the oldest (first in, first out principle).