

DicomWare

Integrated management for the diagnostic imaging department

DicomWare is Exprivia's suite for storing diagnostic images in centralised archives.

DicomWare may be integrated with various products such as RIS, image generation modes, reporting stations and archiving systems, in an environment that is perfectly integrated for the end-user.

With the release of Version 4 of the DicomWare archiving and Medstation reporting system, Exprivia is launching a suite of natively integrated, leading-edge products, enabling the radiology department to enjoy the greatest possible benefits from the advances in software and hardware technologies.

A decade of working in the RIS-PACS sector together with our in-depth technological knowhow have enabled us at Exprivia to devise a simple, user-friendly, flexible and powerful integrated solution.

The DicomWare Archive Manager 4 archiving system

The archiving system is the heart of the PACS solution and requires a complex set of functions in order to deal fully with all the various scenarios found in diagnostic departments.

DicomWare Archive Manager 4 (DWAM 4) was designed and completely re-engineered in 2005 on the basis of Exprivia's ten years of working alongside its customers.

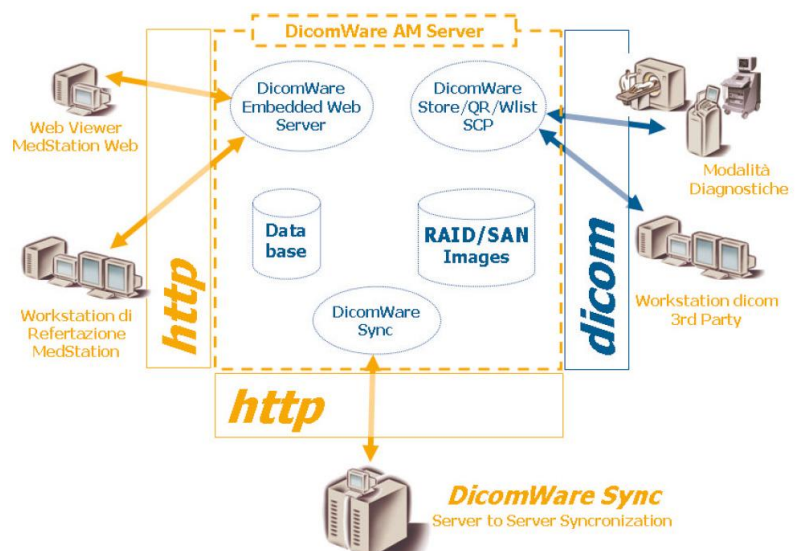
This is a highly configurable multi-platform (Windows, Unix) system capable of meeting the needs of systems all the way from a miniPACS up to Enterprise PACS, thanks to its intrinsically scalable architecture.

Compliant with DICOM and IHE standards, DWAM4 is an extremely open system, with a wealth of functions which mean that it can even be used in contexts where existing diagnostic devices and IT systems are non-standard. For example, images can be acquired in analog mode, and all patient details coming from diagnostic systems which do not support Dicom Worklist (Booking Search) can be verified, and image flows can be routed automatically to specific destinations (Autorouting), etc.

Product architecture

Operating Systems and Databases

DicomWare Archive Manager 4 is a multi-platform system supporting Windows, Linux, AIX and Solaris operating systems. So it is always possible to migrate from one system to another without losing any of the data in the system. Cluster and multi-processor configurations are supported. DWAM4 supports two different relational DBMSs: for entry-level and embedded configurations, this is based on SQLite, the most popular multi-platform shareware database available on the web, whereas larger installations are carried out using Oracle.



Scalability: multithreading & multiprocessing

DWAM4 was designed as a Multithread and Multiprocess application. This means that the software is intrinsically paralleled in order to optimise performance on the hardware platform it runs on (multithreading) and is designed to be distributed over a number of servers so as to be able to handle substantial workflows.

Storage architecture

DicomWare Archive Manager is based on a completely flexible, hierarchical storage architecture, enabling the archive to be configured by combining several short-term devices (typically based on rewritable technology) with several long-term devices (which usually involve non-rewritable technology and activation of a digital signature in accordance with CNIPA standards – Resolution no. 11 dated 19-02-2004). The range of storage devices is constantly updated so as to keep it in line with the most recent advances in technology.

Embedded Web Server

DicomWare was built on native web architecture: so it has a web server embedded in the application, capable of supporting MedStation Web, the diagnostic imaging viewer in Exprivia's PACS suite.

Furthermore, all communications between the DicomWare server and the MedStation reporting workstations, as well as those between two or more DicomWare servers, are carried out on an https web channel. This allows distributed architectures to be created in extremely flexible ways, suitable for multi-clinic/multi-site configurations, based on data centers, designed for telehealth use, according to specific customer requirements.

Managing the PACS system

The flexibility of the DicomWare Archive Manager system allows for various solutions so as to better meet the real needs of each single department. Simultaneous and hierarchical management of different archives ensures a plethora of redundant information.

The graphics interface for the management solution makes it easy to link up the various archives (short term, compressed short term, long term) present in the system and to establish criteria, which can be programmed according to the needs and operating logic of a radiology service, by which images are moved from one archive to another.

Remote assistance

DicomWare Supervisor is a software module installed on all server systems supplied by Exprivia. This software gathers a daily set of parameters on the status of the system, both from the point of view of the systems analyst (space in the file system, device access errors, tablespaces in Oracle databases, etc.), and in terms of the application itself (mastering errors, image send/receive errors, optical support missing, etc.).

