



*Beyond
Roentgen
Imaging
Technologies*

*Next
Generation
Technologies*

*Big
Data
Ready*

ROENTGEN WORKS is BRIT's next generation Web server / PACS/RIS/VNA / Image Sharing solution. It has been architected from the ground up to support multiple tenants using modern technologies, such as HTML-5, Cassandra, and ElasticSearch. It extends BRIT's motto of any image, anywhere, anytime by providing a platform with no single point of failure, utilizing stateless applications and load balancers that work across geographically separate datacenters to provide near 100% availability. It also supports mobile devices, making reports and images available literally anywhere there is Internet across the globe. Clients access the system via HTML-5, zero foot-print browsers, making it easy to implement and readily available to users. Such technology becomes essential when extending access to mass numbers of users, as required with patient portals. Key modules and elements of the single database solution include:

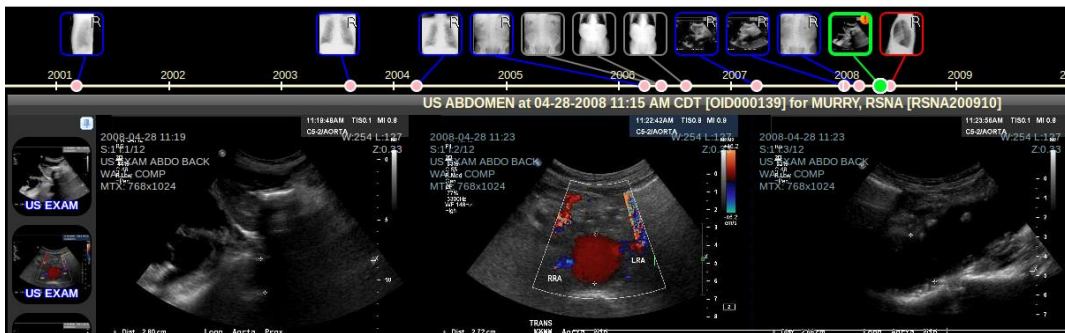
- **Multi-facility support** – each facility has its own users, password policies, active directories support, site defaults for viewer configuration and worklists, HL-7 connections, modalities, etc.
- **The VNA** turn Roentgen Works into a proxy server for all connected DICOM Servers: they only need to query Roentgen Works to receive a patient folder comprised of all studies from the connected PACS.
- **Image and Report Archive** - each site has its own retention policies
- **The integrated viewer**, WebWorks, removes hardware and operating system limitations from image and report viewing: all a user needs is an HTML-5 capable browser. Diagnostic enhancements, including 3D, are available.
- **The Patient Discovery Tool** provides a “poor man’s MPI” to find patients regardless of the patient ID schema.
- **The DICOM Router**, that can also route non-DICOM images and other files
- **Support for non-DICOM images** enables the storage, viewing and distribution of a wide variety of images and documents to users and DICOM servers.
- **A WADO Server**: Access via WADO allows users to access the studies directly from our server using their own browsers.
- **Critical Results Reporting and ER Discordance**
- **Roentgen Workflow module**, an enterprise worklist, that integrates with voice recognition products and third party workstations
- **Radiologist’s Reporting tool**, integrates with VR or uses voice recorder.
- **A RIS** that can be extended to ordering physicians and patients
- **Image Sharing Tools**, anyone with a browser can upload studies, attach files, download studies, burn PDI compliant CDs with an optional viewer, send email links to studies and reports, view studies and reports.
- **HL-7 Engine** – bi-directional and segregated by site.
- **Quality Control** – with support for Image Object Change Management

Even large instances of Roentgen Works can be operational within a few days when deployed within the Amazon S3 cloud. Hybrid solutions of local and hosted instances are also supported, providing local performance and geographic redundancy protection. Big Data enabled with Cassandra clusters and ElasticSearch, the solution is quickly, easily, and massively scalable.

ROENTGEN WORKS

Roentgen Works use of Cassandra's NOSQL database supports a flexible design schema allowing for the quick adaptation required to meet the rapidly evolving government regulations. Its design supports research queries for evidence based medicine, the advanced analytics that will be required in pay-for-performance, and implementing and navigating the knowledge engines required to run the government's appropriateness criteria and determine ICD-10 billing.

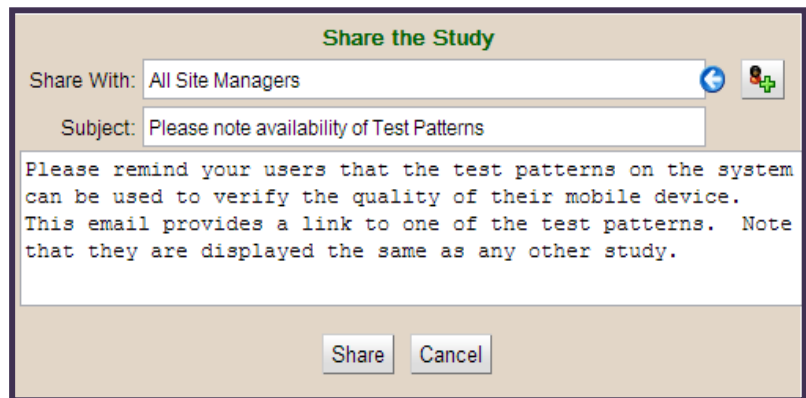
Roentgen Works readily integrates into EMRs via a URL interface, set-up by a system manager, often without any support from BRIT. Built in URL configurations are available for Epic, Meditech and others, including support for the URL timeout features. The server stores medical images along with non-DICOM images and files and it readily connects to multiple PACS while providing a single timeline of all of a patient's studies within WebWorks, the integrated viewer.



WebWorks Viewer with Federated Timeline of Studies for a Patient

SHARING MADE EASY:

Roentgen Works removes most of the challenges of acquiring images, too. Users can readily upload images via the integrated upload tool or via the more advanced, Windows based BRIT Transfer Tool, available as a download from the server. DICOM servers can send directly to Roentgen Works and it supports DICOM TLS for encryption on the wire, so a VPN is not required. Secure Tunnel connections are also supported.



Once a study or order is available on the system, any type of file can be selected and attached to the study. Documents can be scanned into the server and faxes can be sent. These are then attached to an order or study.

A patient's study can be shared by selecting the **Share** widget which sends a link to the study via email to any user. Users with permissions can create the user IDs / passwords on their own. The **Share** utility can also create a URL that can be placed in any document. Users with authority can download studies in PDI compliant format and optionally include a BRIT viewer. Disk spanning and encryption are both supported. The study and optional burner automatically burn onto the CD (this requires a small download).

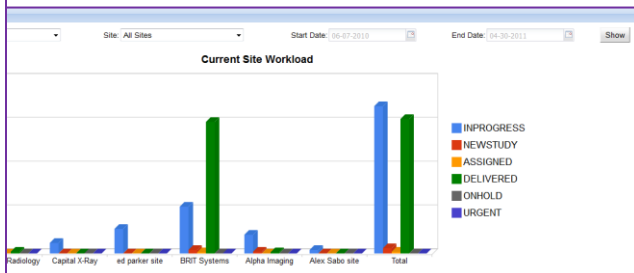
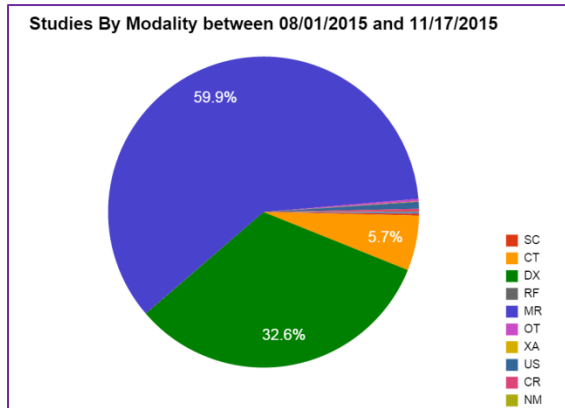
FLEXIBLE DESIGN:

Designed from the ground-up to support multiple facilities, it is an ideal platform for solutions spanning enterprises or cross enterprises. Each facility can be customized with its own logos, screen layout, report formats, AE Title, password rules, log-off times, remote DICOM servers, critical results reporting processes, procedures, password policies, active directory services, HL-7 connections etc. Users can be granted access to any subset of sites and users' roles are highly customizable. System managers can tailor screens by site and user role; and each user can further customize their screens, including default worklist queries, column layouts, viewer hotkeys and default toolset. Rich custom searches that aggregate responses from all the sites for which a user has viewing authority can be dynamically built, stored, and run by end users.

Site Information
Login Configuration
HL7
DICOM
Access Groups
Urgent Works
Discordance
Peer Review
Procedures
Image Viewing
Report Configuration
Site Defaults
Security
QC
Reading Workflow and Tools 
User Roles
Billing Invoice
Licensed Features

MANAGEMENT INFORMATION:

Extensive management information is available with a few clicks of the button. Turn around time analysis, study volumes and full study histories are readily available. HIPAA logs track access by users and by patients. Billing reports can be generated. All reports can be downloaded into excel for further analysis.



SAAS OR PURCHASE OPTIONS

Roentgen Works offerings are available as a SaaS offering or as a Purchase, or combinations of both. Amazon S3 implementations supported. All Roentgen Works offerings provide a clustered environment with geographic diversity. The optional Roentgen Works Entry Node provides local web access while synchronizing to the cloud offering. Roentgen Works can be tried by signing up of the free, 5 GB BRIT Cloud offering. Visit www.brit.com for details.

SYSTEM REQUIREMENTS FOR VIEWERS

Browser: Firefox, Internet Explorer 9 or later Safari on the Apple and Chrome
 Memory: Minimum 700 MB, Recommended 1GB