



Customer Release Notes

eRAD PACS
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New Features and Enhancements

1. Add usage metrics information to the streamer's logs

The stream server log, `~/var/log/streaminfo.log`, includes transmission and reception metrics used by the monitoring tools to track streaming statistics.

2. Add monitor.jsp tool to Server Information page

The monitoring tools are available from the Application server's Admin/Server Information page to users with Admin or Support rights.

3. Support Origin/Replica mode

Added support for Origin and Replica modes. An Origin server shares the state of the data/dicom repository(s) with a Replica server using proprietary notifications instead of formal communication mechanisms (such as DICOM forwards). Notifications are available to share a study's storage location, indicate objects are created and deleted, and convey data repository activity. Includes support for new Origin and Replica device types. Use the device's Ping command to verify the Origin or Replica device is available and configured to recognize the server. To enable Origin mode, set the Origin attribute in `~/var/conf/self.rec` and restart `medsrv`. To enable Replica mode, set the Replica attribute in `~/var/conf/self.rec` and restart `medsrv`.

4. Support Origin/Replica mode for the repo handler

Added repository handler support for Origin and Replica modes where the core repository handler notifies the Replica's core repository handler when changes are made.

5. Support Origin/Replica mode for dicom object acquisition/update/delete

Added support for DICOM forward requests initiated on an Origin device by any activity, including acquisition, edit or deletion, made by the user or the system, to send a notification containing the shared DICOM repository on which the data resides to the Replica device, instead of initiating a DICOM forward. Additionally, an Origin device can accept and process edit and deletion updates sent from the Replica device. In most cases, the Origin device performs the operation and then notifies the Replica device to apply the same change.

6. Add repository management activity to the monitoring module

The monitoring tools include displaying cache, data, processed and other repository management activity (moves, deletes).

7. Add mysql connection saturation to monitored data

The monitoring tools include displaying the percentage of MySQL connections used.

8. Eliminate jdbc warning when invoking java from the command line

The reheatStudies.sh script no longer reports deprecated driver classes warnings.

9. Farm validator enhancements

Some enhancements have been made to the farm validator, including mounts on shared repositories are checked as well as the repository root; cache, data, meta, tempdata, processed, user and shared folders are checked on applicable farm servers only; failure messages are reported in the application server's rc.log file; data repository sharing is not checked on servers running in Replica mode; and shared folder error messages indicate this detail rather than using a generic description.

10. Retire Post Process action and create Prepare Study action

UPGRADE NOTICE: Existing Post Process actions, if any, are disabled when action.jsp runs. Since prefetching has been retired, the Post Process action is unnecessary. It has been retired as well. A new action, called Prepare Study is available to reheat a study. The applicable action settings are available on the Prepare Study configuration page, available from the Other Lists table. When the action runs, details are logged in the info log.

11. Manage "dead mounts" more robustly against temporary database issues

When the database is unavailable, the system does not assume the mount is inaccessible and start creating dead folders.

12. Study status should not be cooked if tasks are queued on another registration server

The Cooked status applies when all objects acquired on any registration server have been processed. When a single registration server completes processing and detects another registration server has unprocessed objects, the study's processing state is set to Partial.

13. Optimize db access in repohandler

The repository handler uses the existing database access facilities to avoid creating and closing new connections to the database every time the check overload function checks the repository handler's dirty state.

14. Origin default user cannot be set to mandatory

When defining an Origin or Replica device, the Service User setting is required.

15. Webservice to provide study keys for third party clients

A token is used to indicate credentials have been verified for access to specific studies. Web services clients can request these keys using the StudyQuery command. Details are available in the *eRAD PACS Web Services Programmer's Manual*.

16. Webservice queries to support compound queries

The web services interface includes a StudyQuery command that supports compound queries, allowing an OR within the column field and an AND across the columns. For example, select all studies with a patient ID of X and a study date of Y. Details are available in the *eRAD PACS Web Services Programmer's Manual*.

17. Webservice call to query studies with priors

The web services interface has a StudyQuery command that includes an option to return a study and its priors, including those that don't match the access restriction. The priors are uniquely identified in groups encoded in the results. Details are available in the *eRAD PACS Web Services Programmer's Manual*.

18. Webservice call to provide study location on the shared archive

The web services interface can return the location of a study on the data repository. The StudyQuery command can include an option to return the location on the storage repository. Details are available in the *eRAD PACS Web Services Programmer's Manual*.

19. Web viewer open should trigger reheat on cold studies

When the web viewer requests images for an unprocessed study, it generates them on-the-fly by initiating a processing event. As the images become available, they are streamed to the web viewer and displayed.

Resolved Issues

1. Review and fix monitoring results

Some monitoring tool, specifically Time of SQL Query (s), Memory Usage and Memory Usage Actual, mishandled the input data format, resulting in invalid or no output graphs.

2. User data takeover is broken

Importing users and groups from v7.2 failed because the group table name changed, empty table checking was missing and the action filter table was missing an ID field.

3. Null pointer exception in FilterPanelBase

When applying a (worklist) table filter by dragging a value into the filter criteria area, the COLID could be missing, resulting in an exception and a failed query.

4. Handling of MySQL NULL values in joined tables

When applying compound lists, it was possible to miss records that satisfied one of the lists but not the other if the second list included criteria that excluded the records on the first list. By handling the query as a union of separate lists, all matching studies are included.

5. Creating a report saves empty Study Date/Time to the SRt object

Report submitted from the viewer failed to insert the Study Date and Study Time values since changing the database date/time record format.

6. Forgotten password vulnerability

A security vulnerability occurring when using the forgotten password feature has been eliminated.

7. Import device exclude option applies to dicom devices only

The option to exclude devices in the device import script, importdevices.sh, mistakenly applied to DICOM devices only. Now all devices are checked against the exclusion list.

8. GetMountPathForDirectory does not work if repository root is a link

Some calls to retrieve a repository's absolute path failed if the repository root itself was a symbolic link.

9. Temporary DICOM objects did not get deleted from repository tmp

When the repository root is the same as the repository mount point, temporary files are placed in the repository root directory rather than the tmp directory. When the object was moved to the repository, the system attempted to remove the file from the data tmp directory, instead of the repository root directory, leaving unmanaged files in the data tmp directory.

10. Suboptimal movement of IQ images on filesystem during registration

The initial quality (IQ) images were saved to the processed repository on (slow) tier 3 storage rather than the local cache repository (on fast tier 1 storage).

11. Inefficient locking in native code

When a study is processed in parallel on multiple threads, locking controls were inefficient because they took a long time between retries.

12. Too many SessionException in the error.log

An open viewer with an open patient folder panel whose viewer session has timed out issues refresh calls, resulting in exceptions recorded in the error log.

13. SQL exception may cause unfiltered lists/actions

When an SQL exception occurred while searching the database, it could be mishandled and, in some cases, clear an action's "done" list. The next time the action performed the query successfully, all the studies would get (re)processed.

14. The default user of new webservice device keeps old value

When creating a new web service device, the default user from an existing web services device would be inserted at the default user of the new device.

15. Stream server using too much cpu with idle connections

Idle stream connections were entering a sleep mode that was not yielding sufficient CPU cycles.

16. Purging not working on NFS mount points

If purging is enabled for an NFS shared drive, makespace() failed to run because the tool used to collect the disk usage data does not work with NFS-mounted devices. The tool now uses the mounted directory instead of the device.

17. Large number of completed tasks showing in tasks GUI

Under some conditions, perhaps mostly when reheating a study, when the system completes multiple tasks within a short period of time, the task counts were not updated correctly and some completed jobs remained visible on the Tasks page.

18. Study status changes to cooked even if errors force prepstudy into retry

When cache processing encountered an error, the error was handled correctly but the status was set to Cooked, regardless. Error values are checked now, assuring the status reflects the processing results.

19. Receiving new objects for a cold study result in a corrupted/incomplete cache

No solution was in place to trigger reheating a cold study after acquiring new objects.

20. Reheating 0-image studies does not work

Studies with no images were excluded from the cooking process, even though they require herpa data and empty blobs before a user can open them.