Pukka-j

Nexus Release Notes

Version 3.04.00

Pukka-j Limited

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Release Date: April 30, 2024

1 Introduction

This release introduces some new features for main the Nexus application and has extended the functionality of some features from the previous release.

2 New Features

There are some new Nexus nodes and better Nexus configuration access control in this release's new features.

2.1 Gzip Node

The Gzip node can be used to compress the pixel data in a single frame image file for compressed transfer across the network. The output file from this node is not readable by systems other than Nexus, so care needs to be taken when using and forwarding the output from this node. When a DICOM file passes through this node, the pixel data is compressed using the Gzip algorithm and the compressed data replaces the original byte array in the pixel data tag. The SOP class of the DICOM file is updated to a proprietary SOP class. This allows the system to send the image data through a DICOM output node in a compressed manner. The receiver of the data should pass the received file through the Gunzip node to restore the original file format. This node only works with single frame data and SOP classes that are not already compressed (Implicit or Explicit Little Endian files). There is no configuration for this node.

2.2 Gunzip

The Gunzip node does the reverse of the Gzip node and decompresses the pixel data and restores the original byte array to the pixel data tag and restores the original SOP class value. There is no configuration for this node.

2.3 Multi-User Edit Protection

Before this version, if multiple users had the Nexus UI open in a web browser, it was possible for both users to unlock the network, make a change and save the configuration. If two users were doing this at the same time, it could result in a "last edit wins" scenario whereby the last edit made by a user would overwrite any that had been made while the last user had the network configuration open in the browser. This release has an update to the user interface and server

side components to track that a user has the configuration unlocked and prevents concurrent unlocking from occurring. As well as this lock prevention, the system also tracks connections so that in the event that a new configuration is applied, any connected users receive an update notification which causes a browser refresh event which in turn displays the changes to the network configuration.

3   Improvements

3.1   Data Purging

An external DICOM lookup has been added as part of the internal purging configuration whereby it is now possible to check whether a DICOM study has been removed from an external system before it is removed from the database being purged. An "analysis only" option has also been added for testing and set up.

3.2   DICOM to HL7 Node

The DICOM HL7 Node has had an option for and external PACS lookup for completion events added.

The "Completion" options allow for an additional HL7 message to be sent after all DICOM images have been received. If the received facility is a Pukka-j Nexus service, the receiving service will mark the study as complete in the OrderManagement database table. Switch on the completion service by ticking "Send additional HL7 message when all images in a study are received".

Progress text must be included in the HL7 message. Choose the HL7 field: "Message field to update" (the system will default to ORC.0.5). The text to denote study in progress and completed can be altered. These are IP and CM by default, but can be changed for specific user requirements. In the default case, "IP" will be placed in ORC.0.5 for the first HL7 message, ORC.0.5 will contain "CM" for the final message and any additional message in between will contain "IP".

Default behaviour is to assume that if no images are received for 120s (Maximum wait for study completion) after the last image for the same study, then there are no more images expected and the HL7 message is sent. The maximum wait (in seconds) can be altered. It is also possible to ask the sending service how many DICOM images are available in the study and use that value to trigger the final HL7 message that marks completion. To enable this feature, tick the item "Use DICOM query to count number of expected images" and add the URL of the DICOM server to query.

For DICOM queries on very busy systems, the user can increase the number of threads, allowing more concurrent queries. When multiple studies are received in a short time, studies queries

are queued. By default, 50 queries are allowed in the queue but this can be increased on very busy systems.

4   Bug Fixes

4.1   DICOM Validation Node

Issue: The DB Validation could initialise an outbound connection with the wrong AET.
Resolution: The initialisation phase, which could be used to establish an outbound association is held back until the DICOM header has been checked to verify that the primary details are correct to allow the AET to be changed in the event of a conflict.

4.2   Nexus UI Stream Splitter Menu location

Issue: When right-clicking on the pipe of a splitter in the Nexus UI, the menu was not appearing in the correct place.
Resolution: The location of the selection is now better used to locate the origin point for the menu.

4.3   Nexus Reporting - Prior Reports

Issue: When viewing an order to report in the reporting tool, if there were prior reports available, it was possible that selecting them would not result in the prior report being displayed.
Resolution: The URL call to retrieve the prior report has been updated.

4.4   Nexus Reporting Lists - Name Search

Issue: When viewing a list in the reporting pages, the name search didn't auto-wildcard the name field.
Resolution: The search parameter is now automatically appended with * to automatically wild-card the search to allow searching be surname without manually having to add the wildcard (*).

5   Known Issues

There are no new known issues, but this issue, previously detailed, hasn't been identified and fixed yet.

5.1 Max PDU Value

Issue: It has been observed that in some cases, a restart of the service can result in the Max-PDU field in the DICOM Listener Node becoming populated with the default user name which can cause an issue with communications.
Workaround: Clear the field and re-apply the configuration.

6 Installation Instructions

Before making any changes, the **docs** and **lib** folders in the install directory should be backed up along with the **nexus.jar** in the install root.

The libraries required for this release are:
nexus.jar   3.04.00
pjk.jar   1.19.18
pacsology.jar 1.23.00
mint.jar   1.26.00

Plugin library versions are:
anon.jar   1.12.05
broker.jar   1.12.00
redact.jar   1.11.03

For Origin users:
websocket.jar   1.12.02

An update MySQL library is potentially required depending upon the MySQL service.

The UI is updated via the files:
cloe.js.gz
pj.css