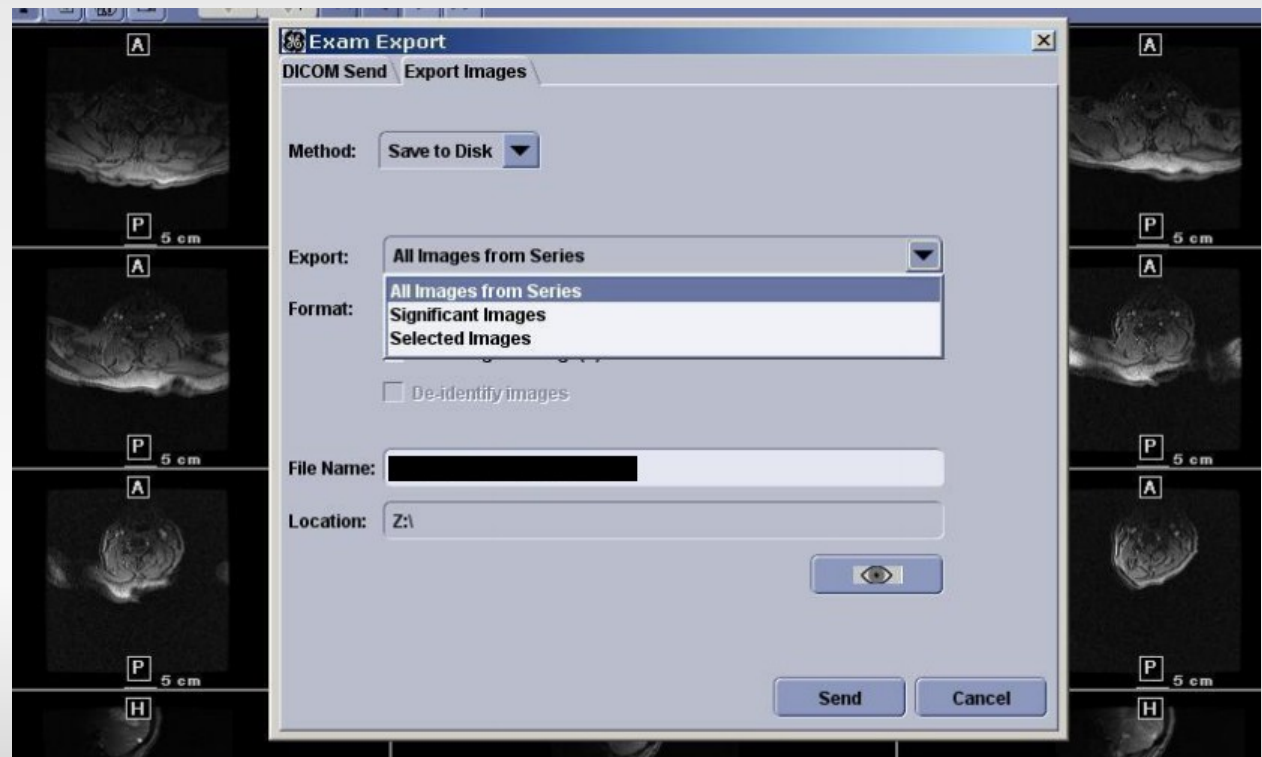


# FRIEDA: Fast Radiology Ingenious Educational Delivery System

- FRIEDA allows radiologists to easily export selected images from the PACS into a powerpoint they can download and use in teaching demonstrations.
- At Weill Cornell Medical College, since Nov 2010 FRIEDA has been used by
  - 69 radiologists to export
  - 70,843 de-identified images into
  - 1314 powerpoint presentations.
- <https://github.com/jledoux/FRIEDA>

# Step 1: Radiologist Exports Images

- A radiologist finds an interesting case in the PACS.
- Selects significant images and exports them to a shared (samba) network drive inside their directory.

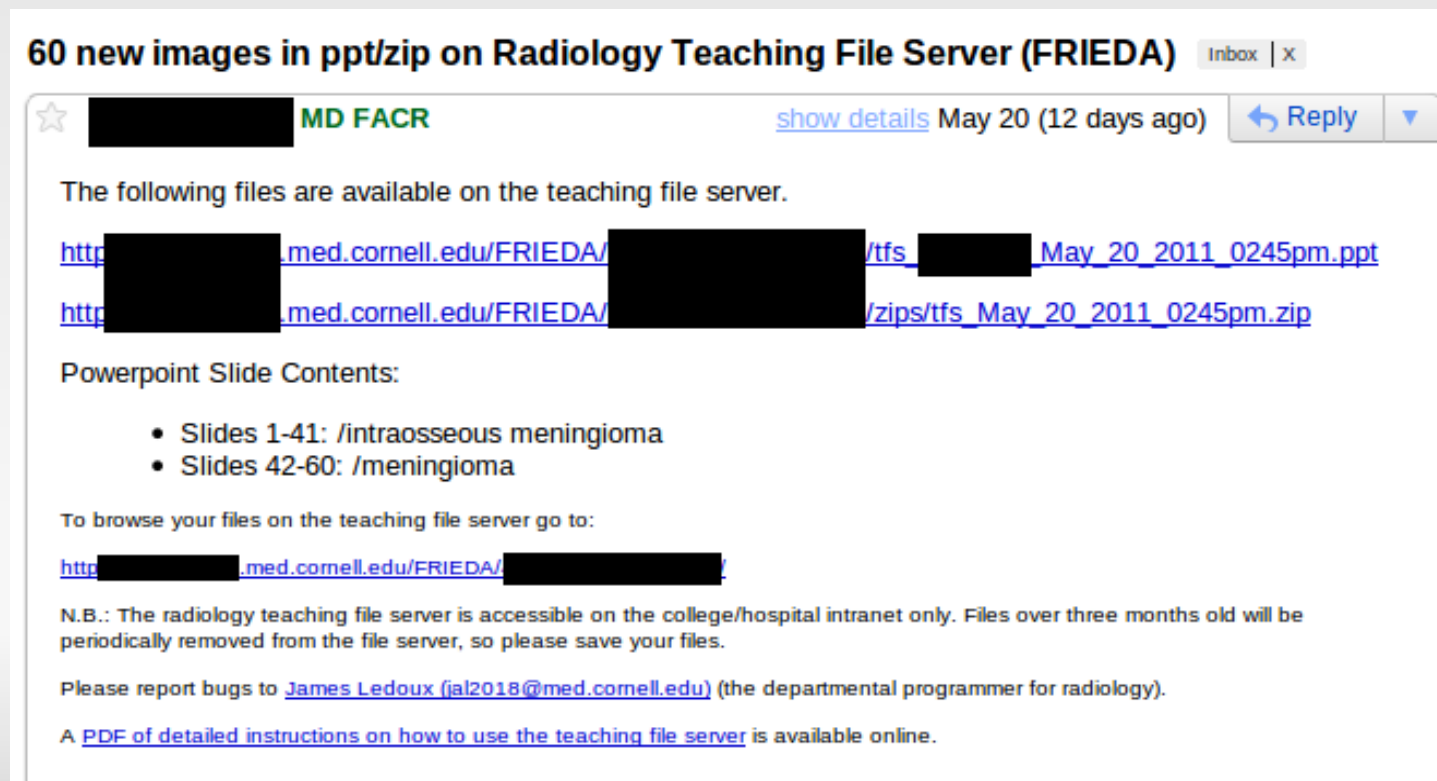


## Step 2: Radiologist Does Something Else

- 10 minutes after images are last saved by a radiologist, a powerpoint is automatically generated, moved to an internal web server.
- Images requiring conversion or deidentification is performed as necessary.
  - Convert 16-bit TIFFs to 8-bit,
  - De-identify DICOMs & convert to PNGs
- An email is sent out notifying the radiologist of a private link (salted hash) to download their ppt from the intranet.

# Step 3: Radiologist Downloads PPT.

- Radiologist Receives an email with links to ppt, zip of de-identified images, and table of contents (based on directory structure when exporting images).



# How FRIEDA Works: python + opensource tools

- A Samba network drive running on a linux server is connected to the PACS on an intranet computer.
- A python script running periodically (as a cron job) checks for files on the network drive that haven't been modified in the past 10 minutes.
- Images requiring conversion or deidentification are converted using pythonmagick and dcmtool.

# Creating the Presentation

- An ODF (Open Document Format) presentation is created within python using `odfpy` a GPL open-source library. (ODF commonly used in [openoffice.org](http://openoffice.org) / [libreoffice](http://libreoffice.org)).
- `unoconv.py` is used to call `openoffice-headless` to convert the open document presentation to a powerpoint presentation.
- Note: `openoffice-headless` frequently hangs and must be checked and `SIGKILL` when stuck to complete conversion. (Checking done in cron script).

# Benefits of FRIEDA

- No need for thumb drives (potentially containing viruses) connect to PACS.
- Remove repetition of inserting images to PPT or converting them to proper format.
- Makes it easier for radiologists to save images off of PACS and use in teaching.

# Installation Instructions

- To install, requires configuring and installing:
  - Webserver to host files(e.g., nginx/apache)
  - Mail server to send announcement emails
  - Windows File Share (samba) for files to be saved to.
  - Setting linux user permissions so everything works.
- Instructions available in README



# Quick Installation Instructions

- Works on ubuntu 10.04 from scratch
- Requires gmail account
- Edit `frieda_settings.py` to correspond to your settings. (At the very least `YOUR_HOST`, email `LOGIN_NAME`, email `LOGIN_PASSWORD`)
- Also edit `quick_install/sample_nginx_server` to change `localhost` to your hostname.
- Run `'bash/quick_install.sh'`