Transferring the MRI data from the workstation

There are various ways of transferring your data from the MR workstation onto your computer or home directory on the network. Which way you choose will depend on what the data will be used for:

1. Screenshots
Can be used when you need a quick and easy way to generate MRI pictures for presentations or emails.

2. DICOM data
Can be used when you need to perform simple image processing such as calculating tumor/fat volume, perfusion time course, etc. Most of today's image processing software handles DICOM format.

3. RAW data
This is the most important data as it includes ALL the information of the scan. If you would like to have a safe and complete backup of your work, you should export the RAW data (maybe in addition to DICOM data). Raw data can be used when you need to perform a more elaborate analysis using external software (e.g. Matlab) or when you need to re-process the data using Paravision (e.g., to perform a new reconstruction of the data).
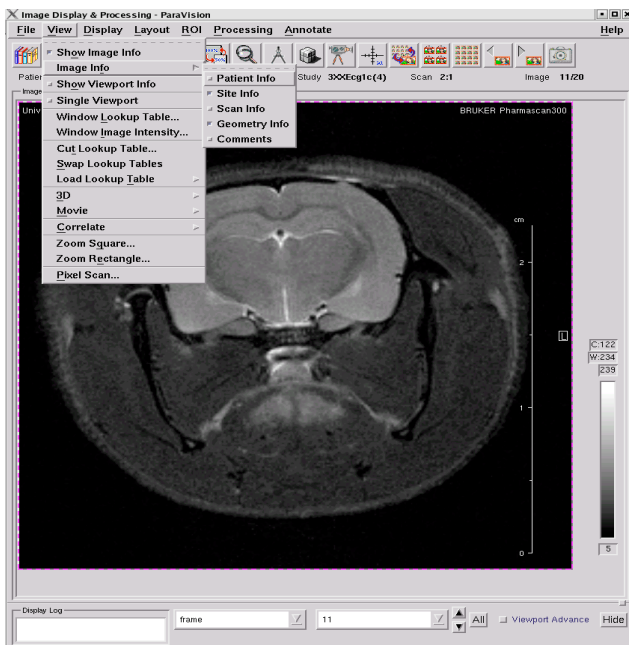
1. Screenshots

Screenshots are literally *snapshots* of the screen.

a. Preparing Display Before Export

The export function exports everything you see on the *Image Display/Processing* screen, including text overlay and ROIs. You can determine what is displayed on the *Image Display/Processing* screen by selecting/deselecting the following information:

- ✓ *View → Image Info*
  - → *Patient Information*
  - → *Site Information*
  - → *Scan Information*
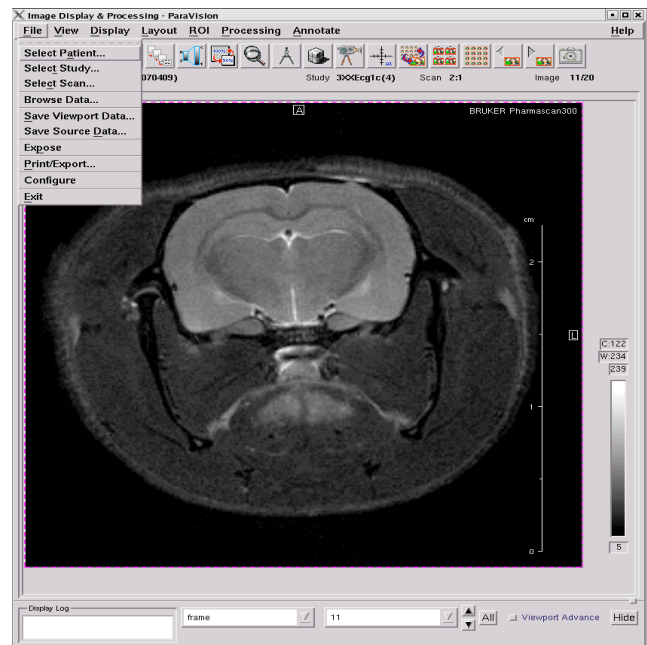 - → *Geometry Info*
  - → *Comments*

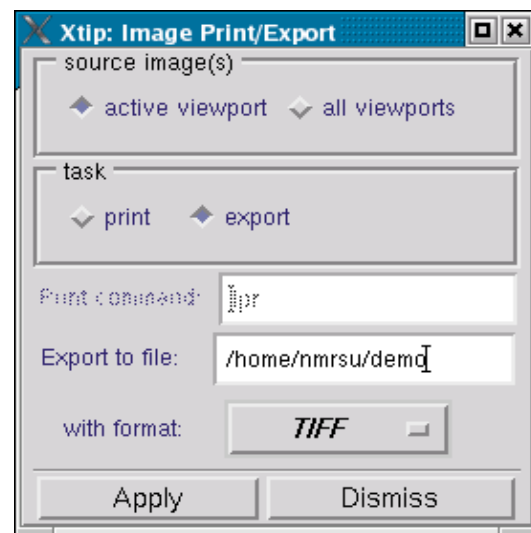This has to be done before you export the pictures.

b. Exporting Screenshots

In Paravision *Image Display & Processing* window you select
- ✓ *File → Print/Export*

You are now presented with the following box:

Task:
Select *export* if you want to save (not print) the images.

Source image(s):
Use *active viewport* if you want to export one picture or a set of previously selected pictures (marked by a pink border)
Use *all viewports* if you want to export everything you see on the *Image Display & Processing*

Export to file:
This is usually set to your home directory and is probably something like */home/username/*
You can change this or use it as your default path. Remember to enter a file name at the end of the path.

With format:
For presentations you should select TIFF or PNG as these are lossless formats.

✓ Press *Apply*.

Your pictures are now stored in folder */home/username/*.

Files can now be transferred to a memory stick, burned on a CD or transferred via network.

2. **DICOM Data**

DICOM stands for "Digital Imaging and Communications in Medicine" is a standard for handling, storing, printing, and transmitting information in medical imaging. It includes a file format definition and a network communications protocol. DICOM files can be exchanged between two entities that are capable of receiving image and patient data in DICOM format.

Included in the DICOM header you can find information on patient ID, scan attributes, parameters etc.

Vivarium does not yet have a picture archiving and communication system (PACS), so all file transfers have do be done manually.

To convert RAW data into DICOM format:
✓ Start *Data Manager* from *System Control* window by selecting *Tools → Data Manager*

Users have different needs, so the DICOM export is set by default to a very simple export.

However, it is possible to configure the *Data Manager* so that users have access to different transferring preferences. The system manager (Kai Brandt) can arrange such that your files are automatically transferred to e.g. your home directory at the university or another account.

In addition to DICOM transfer it is also possible to use FTP/SFTP, SCP, external hard drive, memory stick etc.
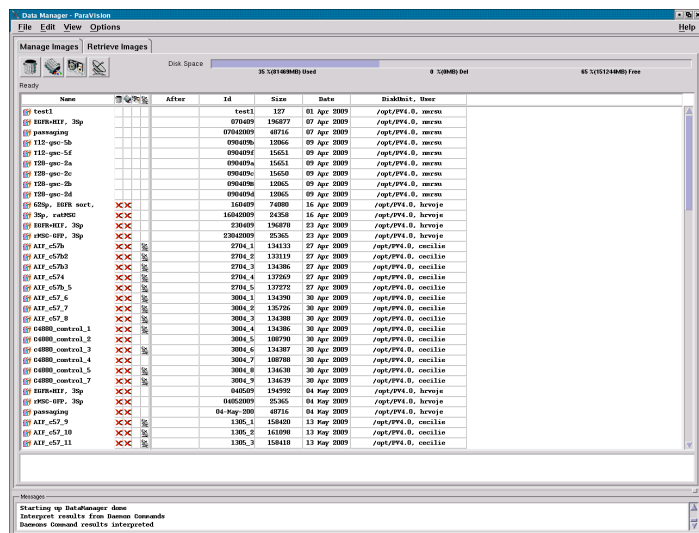
When you first start the *Data Manager* you get the following screen

In this example we are going to use the default method available for all users. Contact Kai Brandt if you would like to individualize exporting preferences.

✓ Select the scans you want to export
✓ Use the combination of CTRL/SHIFT to select multiple scans.
✓ Right click on the blue field
✓ Select *Transfer Immediately*

If you get some error messages this is probably because you have an empty scan. To check, read the export log in the bottom of the screen. Here you can find detailed information about the export.

Your files are now stored in the folder called: /opt/DICOM.

Files can now be transferred to a memory stick, burned on a CD or transferred via network.

After the transfer of DICOM files:
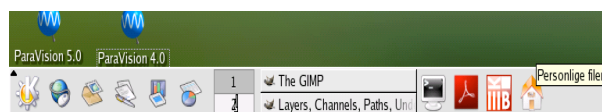✓ Delete your DICOM files from the /opt/DICOM folder.

3. <u>RAW Data</u>

The raw data is stored in the following folders:

For PV4 the folder is:
/opt/PV4.0/data/username/nmr/
For PV5 the folder is:
/opt/PV5.0/data/username/nmr/

RAW data is usually very big so an external hard drive or a memory stick is the easiest transferring method. You can also transfer data via network, but the transfer might take a while.

Below we describe how to copy files (snapshots, DICOM or RAW data) onto a memory stick.

4. <u>Copying files into a memory stick or external hard drive</u>

✓ Connect your memory stick or external hard drive
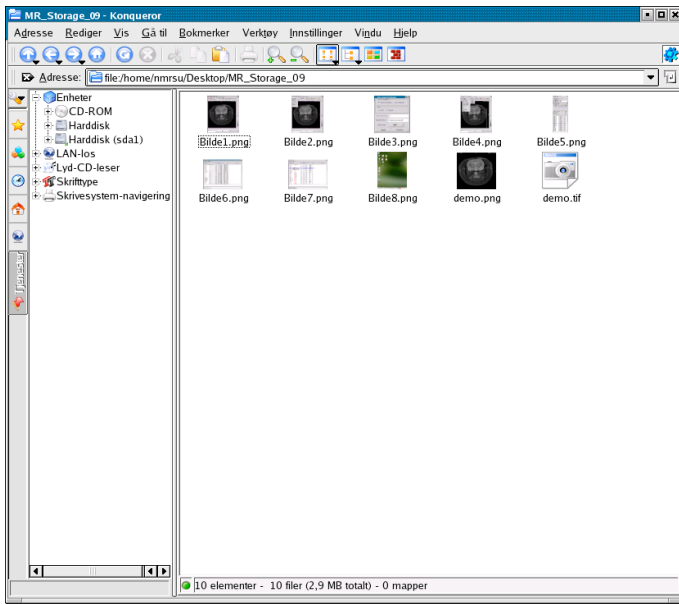✓ Double click on the USB Stick icon

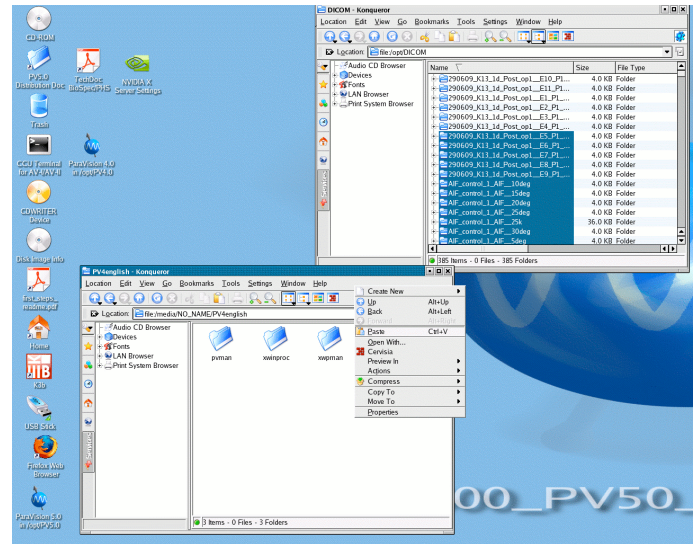A new browser window opens. You now have access to the files on your memory stick or external hard drive.

✓ Click on the *Home* icon on the taskbar

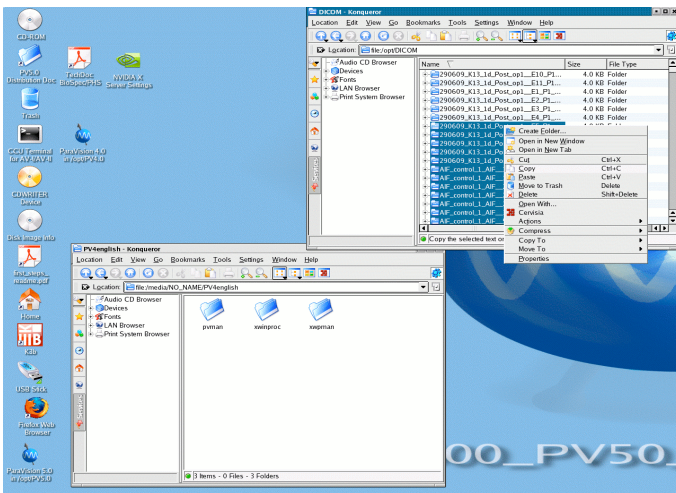A new browser window opens. You now have access to the files on your home folder.

To access files in folders other than *Home* folder:

✓ Change the path in the Location field to e.g. /opt/DICOM (this is where DICOM files are stored)
✓ Select the files you want to copy, right click and select *Copy*. Or press Ctrl + C

✓ Move the files to your memory stick or hard drive window.
✓ Right click and select *Paste* or use Ctrl + V

When copying is finished you have to Unmount the volume (memory stick or external hard drive)

✓ Empty the trashcan and close the file manager
✓ Right click on the USB Stick icon.
✓ Select *Unmount*

When the volume is mounted you should see a green arrow. The arrow should disappear when the volume is unmounted:

5. **Copying files via network onto a home directory**
   (in progress)