Strategies for Converting CDR Images to DICOM

Schick Technologies, Inc.
30-00 47th Avenue
Long Island City, NY 11101

(718) 937-5765
(718) 937-5962 (fax)

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1. Questions and Answers

1.1. What are Some Advantages of Converting Images to DICOM?

We feel there are several advantages to converting your existing images from our proprietary format to DICOM. If you have tried to share images with non-CDR users, you know that it is possible to export images from CDR into several popular graphic formats (BMP, JPEG, TIFF and others). This approach, easy to accomplish with a few images, can be cumbersome when there are many images to export or mail. In addition, patient and exam information is not maintained.

By converting your images to DICOM, you eliminate these constraints for yourself and the professionals, patients, or insurance carriers to whom you send X-rays. Mail an exam with DICOM images and the person receiving it needs only a simple DICOM viewer to see the images. All information regarding the exam and the patient is available. Many free DICOM viewers are available from the Web, and we have also supplied several sample viewers with your new software.

1.2. Should I Convert All My Images?

Yes, for these reasons. First, converting images is a necessary step to retrieve information about your patients, exams, and images with CDR DICOM software. Only images converted by our utility — or imported or received via e-mail with CDR DICOM software — will be accessible. Second, when your images are converted to DICOM, they are copied and then converted. Your original images are left intact (although you may want to archive them to recover disk space). Third, having a mix of X-rays in both proprietary CDR and DICOM formats runs counter to the best use of our software. Accessibility and operability form the core of the DICOM standard, and of CDR as well.

1.3. What Happens to My Original Images?

Your original images are not altered in any way by the conversion. Your converted images, however, now DICOM-compatible, cannot be converted back to proprietary CDR format.

Before converting images to DICOM, consider and plan for the conversion process, using the information in this document as a guide. To run the conversion utility, follow the steps in **Section 2**. The conversion itself can be monitored from the progress bar on the dialog box.

1.4. What About New Images?

After installing CDR DICOM software, CDR will automatically save your new images in DICOM format. There are no extra steps or procedures once you have installed CDR DICOM software.

1.5. How Much Hard Drive Space Will I Need?

Because the conversion process involves copying and converting your existing images, you will need to plan for the extra space this effort will require. As a general guideline for converting uncompressed images, you should have at least twice the amount of disk space currently occupied by your images.

The size of a converted image will depend on the compression type used during conversion. The following table provides an example.

Table 1. Comparing File Sizes Before and After Compression
(Sample Image Acquired with CDR Size 2 Intraoral X-ray Sensor)

Format	**Approximate File Size**
Uncompressed	565 KB
High Quality Compression	235 KB
Medium Quality Compression	104 KB
Low Quality Compression	26 KB

1.6. How Long Will the Conversion Take?

Several factors affect the conversion process:

- Number of exams to convert
- Media where exams are stored (hard drive, zip drive, CD, other)
- Factors specific to your computer (processor speed and RAM)
- Whether image compression is selected during conversion (compression may increase conversion time up to 2.5 times)

Although the contents of every patient database will differ in terms of exams and images, the best way to estimate the conversion task is to actually start the conversion utility (convertimage.exe). Refer to **Section 2** for step-by-step instructions.

If you have multiple image archives, repeat the steps for each archive.

1.7. To Resume the Conversion Process after Canceling it, Should I Choose a Different Folder to Store the Remaining Images?

No, once you have selected the location for your converted images, the conversion utility will continue to use that destination each time you start the conversion process. This information is also stored in your image database and is one way of helping to ensure that your new exams and images can be merged easily with earlier records.

1.8. After Running the Conversion Utility, I Notice that some Patients and Studies Seem to be Missing when I Open my Patient List in CDR DICOM. What Can I Do?

This problem can occur on systems with multiple image archives. Some users choose to store images in different locations — sometimes just a hard drive in a standalone setup — or, also likely, a central storage location in a client / server environment. Image folders can also reside on different types of media, such as CD-ROM, DVD, ZIP disk, or other format. To convert all your images, you will need to run the conversion utility for each image archive. If you have only one image archive, you will only run the conversion utility once. If you have several image archives, you will run the conversion utility for each archive.

When patient and study information appears to be missing after the conversion process is completed, it is possible that some image archives were not included in the conversion. The conversion utility uses the patient.db file in each image archive(s) as the basis for the conversion. If the patient.db is missing, or if you omitted an archive, those images will not be available when you start CDR DICOM.

To correct this problem, perform the steps in **Section 2** for each image archive. If you receive the message, "These images have already been converted. Please select another patient database or contact Product Support for further assistance," click **OK**, and select the next archive.

1.9. How Do I Validate the Conversion Process?

After converting images using the conversion utility, we recommend that you select the Validate feature. Validation is an additional quality check of the conversion process and is used to confirm that all of the images in your source database (in CDR 2.6) were converted successfully and can be accessed from your target database (in CDR DICOM).

The Validation tests are selected in the Conversion Validation dialog box. To open it, click **Tools** > **Validation**. There are three separate tests that can be performed:

1. *Validate last conversion*: This test can be used to identify problems that occurred during conversion and were not detected by other validation checks (*items 2 and 3).* For this reason, *Validate last conversion* can be thought of as a tool that may be needed after conversion. If no problems are reported in the Conversion results window, we do not recommend running this test, which can take a considerable amount of time to complete. (This is also the reason for leaving this option unchecked by default.) The test can be effective, however, with assistance of qualified support personnel, in identfying when certain problems (such as duplicate image UID numbers) have occurred.
2. *Scan for converted, yet missing images*: This test detects images that may have been reported as converted successfully but cannot be found in the DICOM database.
3. *Scan for unconverted images*: This test reports any images that were not converted successfully (this information is is also reported in the Results window).

If Validation reports a problem with missing or unconverted images, click on the Validate Report button to display the results, and then call your local or regional support representative for Schick products who will assist you further.

2. Step-by-Step Instructions

STEP 1

A. [Standalone] At the Windows desktop, click **Start** > **Programs** > **CDR DICOM for Windows > Data Conversion Utility**.

B. [Client / Server] At the Windows desktop, click **Start** > **Programs** > **CDR DICOM Server > Data Conversion Utility**.

C. Browse for the archive containing images to be converted. This is your "source" location.

D. You are reminded to rebuild the database for the selected archive. Click **Rebuild Database**.

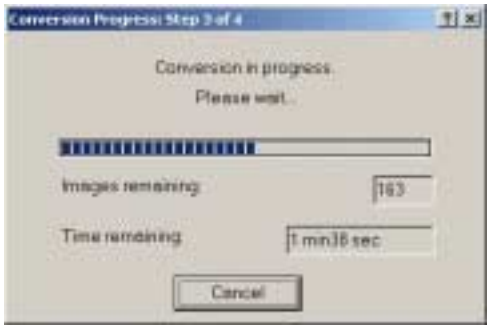
E. Decide whether you wish your images compressed during conversion. Several compression types are available from the drop down menu and more information about them can be found in the Help file. Alternatively, selecting “Uncompressed” will convert your images without any compression.

F. Click **Convert**.

STEP 2

A. The conversion utility scans the images in your storage location and estimates the time to convert them.

B. During the conversion process, a progress meter and a time-to-complete measurement are displayed and updated.

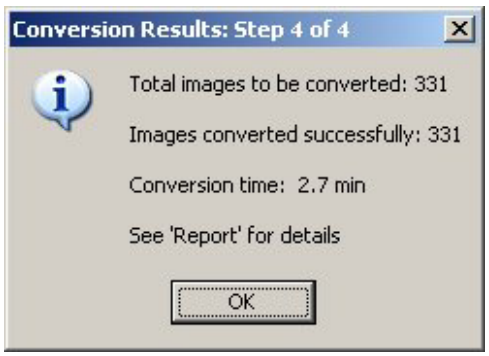


STEP 3

A. When the conversion is complete, a Results screen is displayed automatically.

B. Click **OK.**

C. If you wish, a list of converted exams and other information can be viewed by clicking **Tools > Conversion Report** at the first screen of the Conversion utility (shown in Step 1).

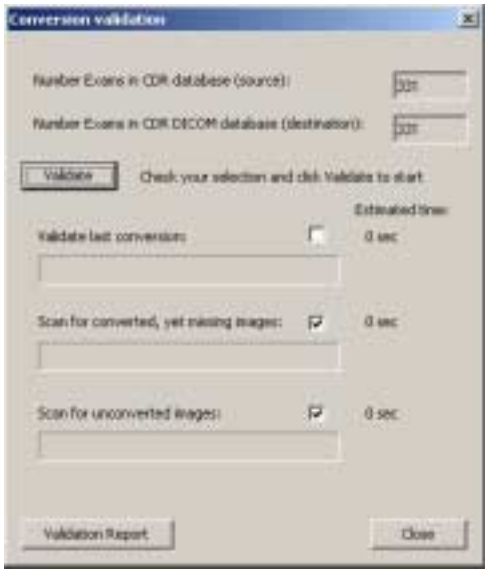


STEP 4

A. Validate the conversion process by performing the following steps.

- Click **Tools** > **Validation**.
- Select the tests you wish to have performed.
- Click **Validate** at the Conversion validation dialog box.
- When the validation process is complete, click on the Validation Report button to display the results.

B. Click **Close**.



STEP 5

If you have multiple image archives:

- Proceed to the next archive where unconverted images are stored
- Repeat the steps in this section. Keep the same "destination" location, as this will make it easier for you to evaluate the conversion process.