



DICOM Shrinkinator

High-speed in-transit compression of DICOM images

Medical data is huge

With the introduction of site to site transfers, remote backup, and scheduled export to central repositories, aggregate size of medical data is ever more important:

- An average instance contains 1MB of pixel data
- Typical series can be hundreds of megabytes in size
- Many instruments don't compress data prior to storage, and DICOM workstations don't support some of those that do
- Continuous transfer of series within and across facilities puts a tremendous load on the network
- Bandwidth costs are significant, and,
- Mandatory retention policies impose significant long term costs

Expectations for the immediacy of data have come into firm contact with the very real limits of networks..



4 Gigabytes

This is how much can be saved when applying lossless compression to 5 gigabytes of raw data.

We can help

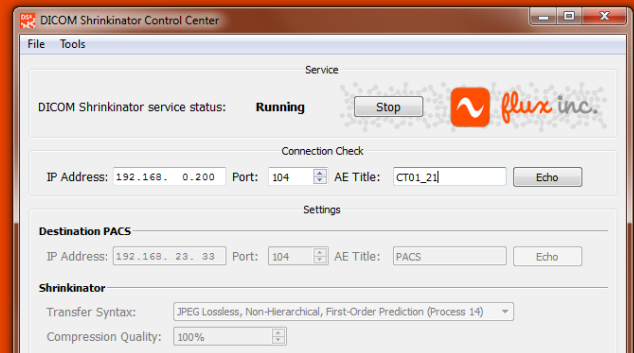
In 2012, Philips Healthcare asked us to reduce repository export traffic and long term storage costs for their key clients. The result of this engagement is Shrinkinator, an efficient DICOM compression gateway that:

- Compresses data in transit into both lossy and lossless formats using a dynamically throttled parallel processing engine
- Accepts multiple simultaneous associations
- Selectively applies compression based on matched attributes, or even drops superfluous instances completely
- Is incredibly easy to install and configure

Shrinkinator supports a long list of network services, including CT, CR and MR. Even with lossless compression, the savings can be as high as eighty percent!



DICOM Shrinkinator



How does it work?

Shrinkinator sits between your DICOM devices and your PACS:

- Devices are configured to point to Shrinkinator.
- Shrinkinator compresses data using either lossy or lossless syntaxes and transmits along to PACS.
- You get impressive on-going savings in data consumption.

Some other cool features

We've gone to great lengths to make Shrinkinator fit neatly in your enterprise:

- **Configurable DICOM attribute filters** can exclude certain instances from compression, or drop entirely from storage.
- **Application entity impersonation** can make Shrinkinator respond with whatever AE title your devices are expecting; It can also make Shrinkinator transmit using the individual AE title of the source device.
- **Zero-configuration upgrades** – Updating is as easy as launching the installer and clicking a few buttons.

What kind of performance can you expect?

Shrinkinator is written in C++/Qt, and has been developed for high-performance applications. Additional features that aid reliability and throughput:

- **Dynamic association throttling** responds automatically to available bandwidth and memory.
- **Parallel processing** can be enabled to ensure compression speed has minimal impact.
- **No database** is used, ensuring that disk performance is not a bottleneck.

It is usually the case that speed of processing is limited only by the speed of your network.

Supported Syntaxes

- JPEG Lossless & Lossy
- RLE Lossless
- JPEG2000 (optional license required)

Supported PACS Systems

- Any DICOM compliant PACS

Network Services

- US, CT, DR, MR, SC, NM, RAW Storage SCU/SCP
- Verification SCU/SCP
- Storage Commitment Push Model SCU/SCP (optional)

Basic Specifications

- Windows executable, runs as a system service
- Receives as Store SCP
- Compresses or skips according to configurable rules
- Transmits to PACS via a DICOM interface as Store SCU

System Requirements

- x86 or x 64 CPU at 2 GHz minimum
- 2 GB memory for 32-bit and 4 GB for 64-bit operation
- Windows XP SP3, Vista, 7, 8, 2003 Server, or 2008 Server
- 200 MB of storage, for binary and first three years of logs files
- TCP access to both source and destination systems



Shrinkinator

Some of our customers

We have over 2,500 active customers, nearly two dozen vendor-partners, and a history of powering reliable clinical workflows.

Here are some sample successful partnerships:

In Canada:

- Aymes Medical – For 15 years we have provided support of last resort service in radiology informatics.
- Ellesmere X-Ray – Our high-volume PACS injection engine silently and accurately processes over 100,000 documents every year for a network of nine radiology facilities.
- MOLHC – We created a prototype system for province-wide encrypted peer-to-peer HL7 aggregation network.
- Philips Healthcare – With whose help with we have worked to create workflow solutions for radiology and cardiology.
- Influx Cardiology – For which we provide the digital glue for a comprehensive cardiology reading, reporting, billing and distribution system.
- Halton Healthcare – At the beginning of this year became the first Shrinkinator compression gateway site.

In the United States:

- Siemens Healthcare in Mountain View – For whom we created measurement transmission gateways for Radiology and Cardiology ultrasound carts.
- Parkland Hospital in Dallas – This was our first Combobulator site. A flawless deployment supporting eight heavily utilized devices.
- Virtual Media Integration in Pensacola – Who we're helping apply digital radiography for the US Navy.
- Plus dozens of radiology, veterinary, legal and engineering customers throughout the continental US and possessions.

Latin America

- Active at over 1,000 Radiology facilities, increasing at a rate of over 50 each month.

Asia

- Deployed at nearly 200 Radiology facilities, increasing at approximately 10 sites each month.

Europe

- Numerous vendor partnerships, including Acteon, who asked us to create a DICOM layer for their award winning WhiteFox cone-beam CT instrument.

Oceania

- Dozens of radiology sites storing CT to PACS using our tools.



flux inc.



Shrinkinator

Pricing and How to Contact Us

Simple Pricing

Our prices are counted per seat. One seat corresponds to a single instance of Shrinkinator, operating at one physical site.

First Seat
@ New Site

7,900
+10% per year

Additional Seat
@ Same Site

4,740
+10% per year

Unlimited Seats
@ Whole Site

31,600
+10% per year

Support Fees

Your first year of priority same-day support is included in the license price. Basic, next-business-day support is included with the 10% annual maintenance fees. If you require additional peace of mind, then extended same-day priority support is available for an additional price of 15% per year.

Contact Us

United States + World

Web: <http://fluxinc.ca>

United States: 1 (877) 358-9462

International: +1 (416) 900-1007

E-Mail: sales@fluxinc.ca

Canada

In Canada, please contact Aymes Medical, who have been distributing and supporting clinical equipment for over 20 years.

Canada: 1 (800) 590-1281

E-Mail: info@aymes.ca

