

Codonics Virtua Copy to USB

Overview

The Codonics Virtua Copy to USB feature provides a method of copying studies to a USB flash drive or hard drive rather than to optical media. USB drives may be preferable to optical media in some circumstances, but using USB drives requires a different workflow. For optical media, a user can manually or automatically record studies to multiple discs with little user interaction since the Virtua Recorder handles all disc movement. For USB drives, a user must physically insert a USB drive, manually copy studies to that USB drive, and then physically remove the USB drive before inserting another. To reduce the risk that patient data on a USB drive is distributed to an unintended party, Virtua only allows copying to a single USB drive at a time.

NOTE: Unlike optical media, Virtua is not able to automatically apply a physical label to a USB drive. It is the responsibility of the Virtua user to provide adequate physical labeling of the USB drive. See the USB Drive Labeling section below for physical labeling recommendations.

NOTE: USB drives must be provided by the Virtua site, not by Codonics.

Prerequisites

Confirm that each of the following items is available:

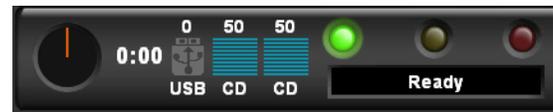
- ◆ Copy to USB requires a feature key on Virtua's SmartDrive. Contact Codonics Technical Support or your Codonics Representative to obtain the proper key.
- ◆ 4.2.0 software or later is installed on Virtua.
- ◆ USB drives provided by the Virtua site (Codonics does not supply these). USB drives must already be formatted with a single partition using a supported file system (FAT32 or NTFS).
- ◆ User systems running Windows XP® or newer.

Copy to USB Workflow

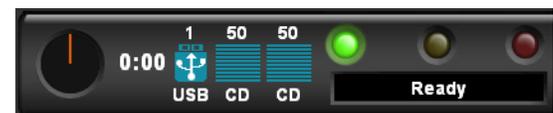
When the Copy to USB feature is enabled, Virtua shows a USB drive indicator in the dashboard and shows the USB drive information in the Status Details dialog.

NOTE: The Virtua user may insert a USB drive into the front USB port of the Virtua, or a USB port in the rear panel of the Virtua E or C.

When no USB drive is inserted, the USB dashboard indicator will unobtrusively show that no drives are available.

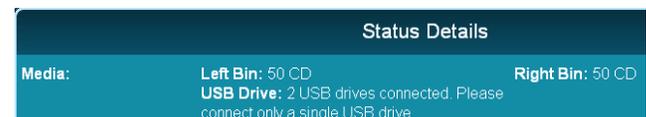
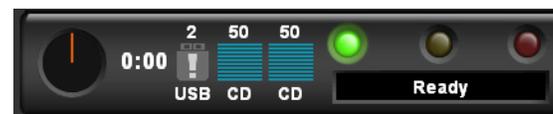


If the user inserts a single USB drive into Virtua, the USB dashboard indicator will clearly show that a single drive is available, and the Status Details dialog will indicate how much space is free on the drive.



When exactly one USB drive is available, Virtua will allow copying to USB.

If the user inserts more than one USB drive into Virtua, the USB dashboard indicator will clearly show that more than one USB drive is available.



When more than one USB drive is available, Virtua will not allow copying to USB.

NOTE: If the USB drive is formatted with more than one partition, Virtua will detect that more than one USB drive is available, and will not allow copying to USB.

An existing parameter has been updated to allow a new possible value in the `job/job.XXX.txt` profiles:

Parameter: **mediaType**

Settings: **CD | DVD | USB | AUTO**

Default: **CD**

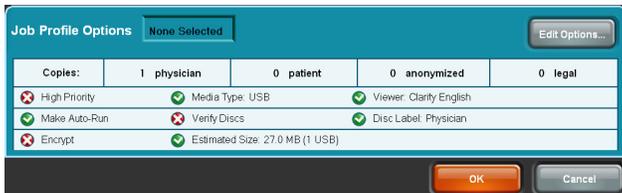
Description: Specifies the type of media on which to record studies. AUTO will choose either CD or DVD based on the size of the studies to be recorded.

NOTE: The new manual USB Job Profile has the media type set to USB and will verify that studies were correctly copied to the USB drive.

To copy studies to USB when one USB drive is available, select the desired studies and press the Record button. The Job Confirmation screen will show how much space is required for the selected studies and allow you to choose USB media if desired.

NOTE: If studies are sent to an AE Title corresponding to a Job Profile with mediaType set to USB, Virtua will automatically set the media type to USB when manually recording the studies.

NOTE: Some viewers do not work properly when copied to a USB drive, since files are copied to a subfolder rather than the root of the drive. Virtua will show a warning for any viewers that are known to be incompatible, but you may still choose to copy the viewer(s) to USB anyway.



Press the OK button to copy the studies to USB. If the USB drive does not have enough space for the studies or if disc spanning options would require the use of more than one USB drive, an error will be shown. Otherwise, Virtua will create a uniquely-named subfolder on the USB drive and will copy the studies into that subfolder. Virtua copies the same set of files that would be recorded on a disc, including any viewers, encryption, etc. After copying and possibly verifying the files copied to the USB drive, the system automatically safely removes the USB drive. The system status message will say "Remove USB", and the user may then physically remove the USB drive from Virtua.



NOTE: Do not remove the USB drive until copying is complete or the USB drive may become corrupted. If a USB drive is removed before copying is complete, it is recommended to reformat the USB drive, which will destroy any data on the USB drive.

NOTE: Since all files are copied to a uniquely named subfolder, any files that already exist on the USB drive will not be modified.

NOTE: Since USB drives are rewritable, it is possible for the Virtua user to reuse the same USB drive for more than one job which might result in having studies for more than one patient on the same USB drive. It is the responsibility of the site to manage this risk.

NOTE: USB drives have varying write speeds. While copying files to a USB drive, the system will monitor the speed at which files are copied and adjust the estimated time remaining for the USB job accordingly. This may result in fluctuations in the estimated time remaining at various points during copying.

USB Drive Labeling

Unlike optical media, Virtua is not able to automatically apply a physical label to a USB drive. It is the responsibility of the user to adequately physically label each USB drive that Virtua has copied studies to. The Integrating the Healthcare Enterprise initiative (IHE) recommends that the Patient Name, Patient ID, Patient Birthdate, Media creation date, Study date(s), and Name of the Originating Institution be physically labeled on the USB drive. IHE cautions that it is not sufficient merely to label the package in which the media is transported since the media may become separated from the package.

See IHE Radiology Technical Framework Volume III (Rev. 9.0 2008-06-27) Section 4.47.4.1.2.2.4 Media Identification for further details.

Viewing Studies Copied to a USB Drive

When a USB drive with studies copied from Virtua is inserted into an end user's computer, the user must manually browse to the desired uniquely named subfolder. The user must manually start the Launchpad program in that subfolder to view any studies in that subfolder on the USB drive.

Limitations

- ◆ **Virtua only allows copying to a single USB drive at a time.** This reduces the risk that patient data on a USB drive is distributed to an unintended party and also simplifies the workflow for the user.
- ◆ **Autorecord jobs and Direct to Disc jobs with media type set to USB are not supported.** Since the user must be present at the Virtua in order to manually insert a USB drive, only manually submitted jobs are supported.
- ◆ **Studies cannot be spanned over multiple USB drives.** The entire set of studies must be able to fit in the space available on the single USB drive that the user has inserted when they submit the job. This prevents Virtua from spanning studies over multiple USB drives in a byPatient or byStudy fashion, and prevents Virtua from recording more than one copy of a USB job.

- ◆ **The maximum file size for individual files copied to a USB drive formatted with FAT32 is 4GB.** Attempting to copy a study with a file greater than 4GB or attempting to Encrypt a study with a total content size greater than 4GB will result in a failed job. (Note that this same limitation applies to jobs on DVD).
- ◆ **Files (including a DICOMDIR file) will always be copied to a new, uniquely named subfolder on the USB drive.** This is not compliant with the DICOM Standard Application Profile for USB storage (PS 3.11 J.3 STD-GEN-USB) which requires the DICOMDIR file to be in the root of the USB drive. In practice, this should not significantly affect the use of USB drives to view or import DICOM files. Most DICOM import methods (including Codonics Integrity) will be able to locate all files on the USB drive even without the DICOMDIR in the root of the drive.
- ◆ **USB drives will not auto-run on an end user's computer, like CDs and DVDs may.** When the USB drive is inserted in a computer, the Launchpad cannot auto-run even on older versions of Windows since files are located in a subfolder on the USB drive. Modern versions of Windows do not allow autorun at all from removable media such as USB drives or CDs/DVDs.
- ◆ **USB hubs may not be used.** Copying studies to a USB drive that is plugged into a USB hub attached to Virtua may result in failures to copy studies to that USB drive. Only one USB drive can be copied at a time so there should be no need for a USB hub.
- ◆ **Virtua E and C do not have a front USB port.** USB drives can be plugged directly into the rear panel of the Virtua E or C or a USB extender cable can be plugged into the rear panel, allowing the Virtua user to plug USB drives into the extender cable near the front of the system.

Known Issues

- ◆ **The following optional viewers for Virtua systems will work with Copy to USB:**
 - ◆ Clarity™ Viewer
 - ◆ Clarity™ 3D/Fusion Viewer
 - ◆ eFilm Lite™
- ◆ **Other viewers may not function correctly when run from a subfolder of a USB drive.** If a viewer does not run, please contact the viewer manufacturer.
- ◆ **USB drives are available with varying degrees of quality.** Lower-quality USB drives may experience failures to read or write data, either on the Virtua or on an end user's computer. It is the responsibility of the site to provide USB drives of acceptable quality.

- ◆ **Copy to USB performance.** USB drives have varying write speeds, constrained by USB 2.0 and Virtua hardware. USB hard drives tend to have higher write speeds than USB flash drives, but it varies. When copying larger studies or sets of studies, it is recommended to use either a USB drive that is known to have higher write speeds, or to use DVDs if available. USB drives do not perform adequately.
- ◆ **End user can't use Window's "Safely Remove" function for a USB drive after viewing protected medical data.** When an end user views medical data from a USB drive subfolder with Virtua encrypted content, the files are decrypted to the user's temporary folder. A program is started to monitor when the Launchpad closes and when the media has been ejected, so that it can remove medical data in the temporary folder. For USB media, this program leaves a file handle open to the USB drive, which prevents Windows from being able to safely remove the USB device. However, the user can still physically remove the USB drive from the computer with no undesirable effects.

- ◆ **USB drives may contain viruses.** Autorun for USB drives has been disabled on Virtua, so a virus on a USB drive should not infect Virtua. It is more likely that an end user's computer would become infected by a virus on a USB drive.
- ◆ **USB drive corruption.** If a USB drive is removed before copying is complete, the filesystem on the USB drive might be corrupted. If a USB drive is removed before copying is complete, it is recommended to reformat the USB drive which will destroy any data on the USB drive.

Technical Support

If problems occur during software installation, contact Codonics Technical Support between the hours of 8:30AM and 5:30PM EST (weekends and U.S. holidays excluded).

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