Windows 10 with Cygwin for Cinelerra limited

To run Cinelerra on a Windows 10 computer, you will need to have Cygwin installed on your system, along with the CinelerraGG static tar and a patched library: libxbc. This setup has been tested with Windows 10, version 1909, on an HP EliteBook 820 at 2.3 GHz.

This limited version provides "core" functionality at this time with the standard Windows FFmpeg executable, meaning that specific modifications in FFmpeg needed for Cinelerra are not available. Limited capabilities include only a few render output formats available – for example mov, qt as mjpeg, and mpeg for videos and avi and qt as s16le for audio, but not mkv or mp4. This is due to the fact that several codec and utility libraries are not currently compiled to work with Windows.

Installing Cygwin:
Cygwin is an environment that runs natively on Windows which allows Unix programs to be compiled and run on Windows. With cygwin installed on your Windows 10 computer, you will be able to run CinelerraGG. Before installing cygwin, you need to be *warned* that the Avast anti-virus software kills files necessary for cygwin installation and execution, so you will have to remove it and use alternative anti-virus software (the standard default already included with Windows 10 is Defender). Below are the steps for installation:

1) Download cygwin for your 64-bit computer at: https://www.cygwin.com/
2) Generally just take the defaults as they show up or follow the directions for steps 1-8 as provided at:
   https://www.faqforge.com/windows/windows-10/how-to-install-cygwin-on-windows-10/
3) For the list of things to install, leave all set to "Default" except set these to "Install" instead:
base	devel
gnome	graphics
system	video
X11	

   This install takes a long time – 2 hours on an EliteBook and requires approximately 20GB storage.
4) Finally you will want to have the icons on your desktop (already default) and then click Finish.

Then to install the Cinelerra tar files, you will need to start a cygwin console terminal from the startup menu as shown here:
        Start → Cygwin → Cygwin64 Terminal

Installing CinelerraGG:
1) Download the tar file at:
        https://cinelerra-gg.org/download/testing/libxcb-bld.tar.bz2
2) Install libxbc from the tar file – installs into /usr/local and requires approximately 21MB storage.
        # tar -C /usr/local -xJf /path/libxcb-bld.tar.bz2
The libxcb path repairs an error (XIOError), which stops the program.
3) Download the tar file at:
        https://cinelerra-gg.org/download/testing/cygcin-bld.tar.bz2
4) Install cygcin from the tar file – this installs into home directory. Note this is cygcin NOT cygwin.
        # cd
        # tar -xJf /path/cygcin-bld.tar.bz2
This creates ~/cygcin, a user build installation of Cinelerra and requires approximately 400MB storage.

Running Cinelerra:
You will need to start a cygwin desktop from the startup menu:
1) Start→Cygwin-X→ Openbox

You should start a console controlling terminal so that you can see program logging.
2) Start→Cygwin→ Cygwin64 Terminal
This opens a separate window, that can survive a cygwin hang and bugs. Without these logs, it is much more difficult to use.

3) Type in that console controlling window, the following:
     # export DISPLAY=:0.0
4) Change directories to where Cinelerra is installed:
     # cd /path/cygcin   (NOT cygwin)
5) Finally keyin:
     # ./cin
which starts up your 4 Cinelerra windows.

The most noticeable difference from the Linux versions is that Cinelerra seems to run very slowly on Windows 10. You must be very tolerant and patient to see this work. It can however exhibit astonishing speed when encoding. Cinelerra has to be downgraded significantly due to lack of supported interfaces, codecs (for example h264/h265), and utilities. The only graphics driver is X11 and the only sound driver is pulseaudio. Almost all configurable omissions are applied to this build.

Cinelerra build on cygwin from source code:
1) Download and install ffmpeg into /usr/local :
     download ffmpeg (currently 4.2.2)
     # cd /tmp
     # tar -xJf /path/ffmpeg-4.2.2.tar.bz2
     # cd ffmpeg-4.2.2
     # ./configure
     # make -j
     # make install
2) Download and install a patched libxcb:
     # cd /tmp
     # rm -rf libxcb-1.13/
     # tar -xf /path/libxcb-1.13.tar.bz2
     # cd libxcb-1.13/
     # patch -p1 < /path/cinelerra-5.1/thirdparty/src/libxcb.patch1
       patching file configure.ac
       patching file src/xcb_in.c
     # ./autogen.sh
     # ./configure
     # make -j
     # make install
3) Download cinelerra-gg:
     # cd /build_path/
     # git clone "git://git.cinelerra-gg.org/goodguy/cinelerra.git"
     # cd cinelerra-gg/cinelerra-5.1
4) Apply cygwin patch:

patch -p2 < blds/cygwin.patch
5) Run the build with:
        # ./blds/cygwin.bld

This produces a directory: /build_path/cinelerra-gg/cinelerra-5.1/bin
which is used to create the cygcin archive.

Currently, the targets are not stripped and can be run from gdb.
There is only very limited signal handler dmp file support.
Running gdb from inside a desktop resident console (not a cygwin64 window) will hang cygwin (and
cin) when it hits a breakpoint. You must run from an external console window to avoid this issue.