

# BNCS V3Compile Utility

The V3Compile utility is a tool to assist with the compiling and testing of individual BNCS Version 3 projects during their development. It is based on the V3Convert tool that was designed to batch process multiple BNCS 16bit Version 2 projects into 32bit Version 3 projects, this needs to be installed prior to use of the V3Compile utility. A full installation of BNCS Version 3 should also have been done as this includes the required 32bit custom controls for the panels and Borland Resource Workshop with the 16bit custom controls required for editing the GUIs. A standard text editor can be used to edit the string tables if preferred.

When the Utility first opens, the file path to the last project from the previous session is recalled. An alternative resource file may be selected using the standard windows 'File Open' dialog. The file details are retained throughout the session and a time-stamped backup copy of the RC file can be saved periodically from the File menu.

The V3Compile utility attempts to open the Resource file to test that the file exists and then checks the file name and path for any space characters as the Borland compiler will object to those. Tip: use '\_' underscores instead

The reference V3ApplCore file is copied and renamed as the target executable file to be bound later with the compiled resource code during the link stage.

The text within the resource file is syntax checked with the 'ConvertRC' utility for 'zero length' text strings "", these are caused by empty stringtable lines and are known to be a problem when creating the intermediate 32bit .RES file. Two hyphens '--' are used instead to replace empty lines and these are later filtered within V3ApplCore so that they are not loaded and executed.

The V3Compile Utility issues the command line instructions to the Borland resource tools that are used to convert the RC file into a .RES intermediate file and then to bind that with the V3Applcore to create the final executable panel application.

The compiled application can be launched from the Run button. If the 'Compile & Run' option is selected then the completed application is launched automatically after a slight delay for the file system to settle. Additional delay can be added if required. Command line parameters, such as device number, offsets etc. can be appended to the Run command.

The V3Compile utility determines when external console utilities have finished their tasks by waiting until it is able to open the file that has been created at each stage. The ConvertRC utility application creates a log file and a copy of the original rc file in the target folder but as panel development tends to be an incremental evolution these are deleted along with the intermediate .res files.

The ApplCore copy stage is omitted for speed on subsequent compile operations on the same project until either another project is selected or the Utility is re-started.

## Configuration & Ini file settings:

The V3Compile Utility can be started from any location, it creates a config file (V3Compile.ini) in the System directory with all the default values required. When the utility is closed, the last project path, command line parameters, debug and Runmode states are saved to V3Compile.ini

[Configuration]

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The default paths to V3applcore, Borland BRC32 and ConvertRC syntax checker are as installed by the V3Convert application – these are User Editable.

RunMode=1/0 - compile and run state saved by application at closedown.

DebugMode=1/0 - debug window state saved by application at closedown.

RunDelay= 0 - editable delay time (seconds) for filesystem to stabilise after compile.

LastFile=C:\bncs\project1.rc - filepath saved by application at closedown.

CommandLine=123 - Cmd Line parameters saved by application at closedown.

## Limitations:

The utility does not check for presence of V3CSI before running the compiled ApplCore panel.

Multiple instances of the utility can be run allowing development work on a number of panels simultaneously in a session but only one compile operation should be initiated at a time so as not to overlap calls to the external applications.

## Borland Info:

The actual compile and link process is done externally using Borland applications.

The Borland Utility BRC32.exe is a shell application through which BRCC32 and RLINK32 are started.

BRCC32 is a command-line version of the resource compiler. It accepts a resource script file (.RC) as input and produces a resource object file (.RES) as output.

RLINK32.DLL is the Borland resource linker that binds resources in .RES file format, to an .EXE file and marks the resulting .EXE file as a Windows executable.

## Compiler Jargon:

An object file is the representation of code that a compiler or assembler generates by processing a source code file.

Object files contain compact code, often called "binaries". The .RES file is like an .obj file for resources,

A linker or link editor is a program that takes one or more objects generated by compilers and assembles them into a single executable program.

## Version History

- A1.00.04 Bug fix – Removed rogue character left behind on end of filepath when changing to another project at a higher directory level.  
Modified - Run button now enabled if .exe found when .rc file opened
- A1.00.03 Debug testing –corrupted filepath investigation
- A1.00.02 Ini file moved from application to system directory  
Clean up extended to remove the .original and the .log file  
Added feature to send Command Line parameters (saved in ini file)  
Added menu feature to save time-stamped copy of .rc file
- A1.00.01 Released for evaluation