Introduction

This document outlines how to set up Blue Pearl VVS for operation using both the GUI and Scripted flow.

Both flows use, a base TCL script which configures the tool with the rules in line with those agreed with ESA.

To get started with this flow you need to have a Blue Pearl VVS installed and the environment variable set correctly to enable scripts to call the CLI.

On the GitHub directory you will find four files, these are

1. bps_setup.tcl – This script is called on start up for both GUI and Scripted flows, it creates the ESA IP Package of checks which are used by both GUI and Scripted flow

2. esa_analysis.tcl – This script will create a blue pearl project and run the analysis, writing out the rule violations to CSV files. The files analysed are determined by the input_files.f macro file.

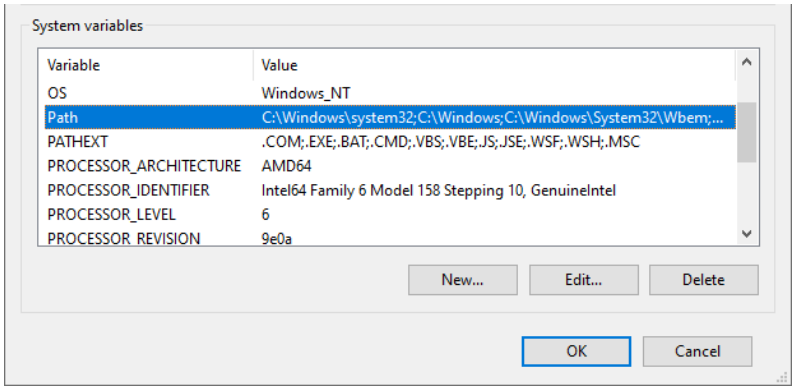
3. Input_files.f – The file contains the list of files to be analysed by the script esa_analysis.tcl

4. get_blue_pearl_results.bat – Running this file will call the three previous scripts and generate the analysis results and store them in CVS files.

Changing between the scripted flow and the GUI will be demonstrated as part of these instructions as well to enable visual debugging of any warnings raised by the script in the GUI.

Setting the environment variables for Windows 10

To set the environment variable open the environment variables window, double click path.



Click New and add the path to Blue Pearl Software install

C:\Program Files\Blue Pearl Software, Inc\Blue Pearl Visual Verification Environment x64

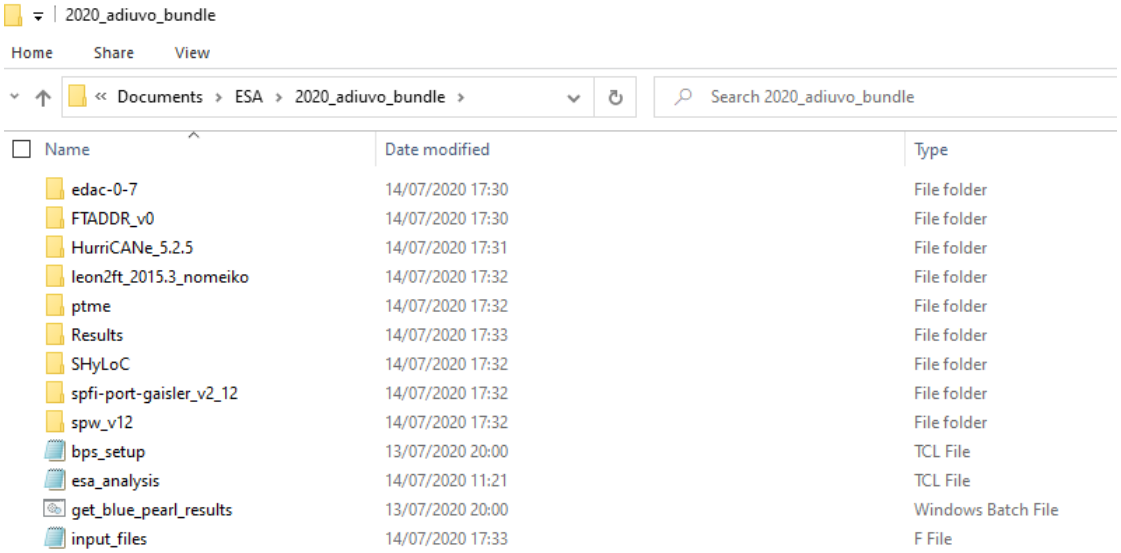
Obtaining the Scripts

The scripts can be obtained by cloning the github repository

https://github.com/ATaylorCEngFIET/BPS_Rules

The scripts are available under the script's directory.

Place the scripts in the RTL directory you wish to analyse.

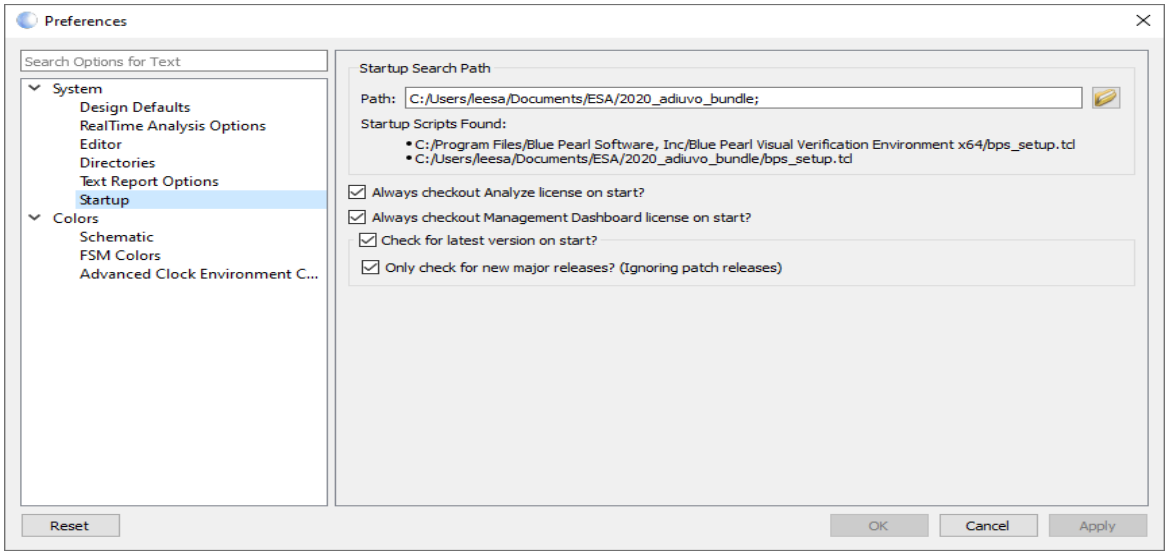


Setting Up the VVS & GUI Flow

To set up the GUI to use the ESA rules we need to set the location of the bps_setup.tcl file in the GUI preferences.

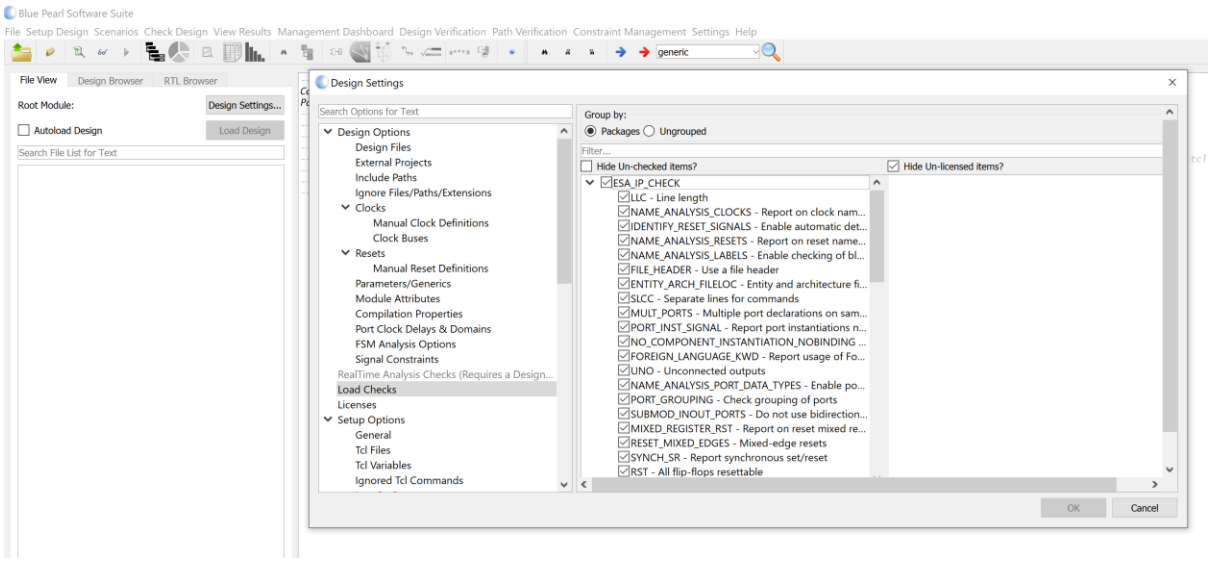
This can be set up using the Settings -> preferences

Navigate the Startup Search Path directory to one containing the location of the bps_setup.tcl file

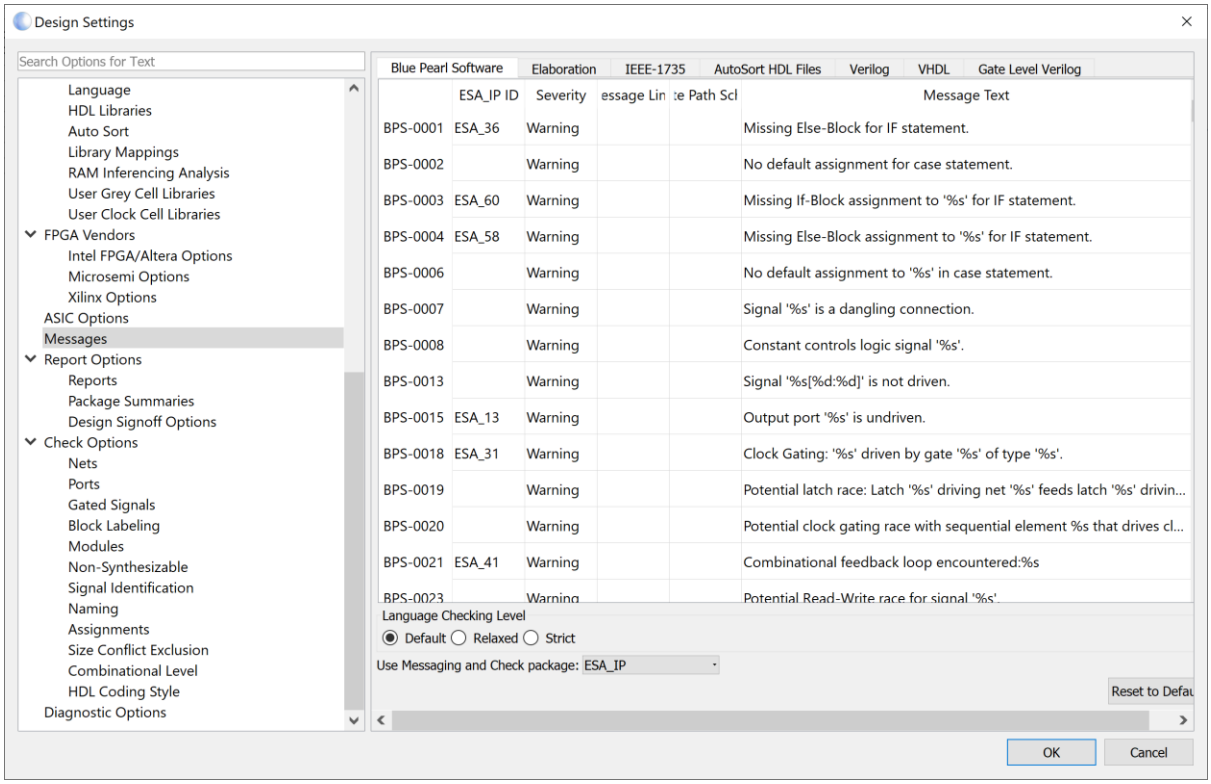


After this change close and restart the tool.

To check installation click on Design Settings -> Load Checks you should only see one package in the list which is the ESA IP Check rules



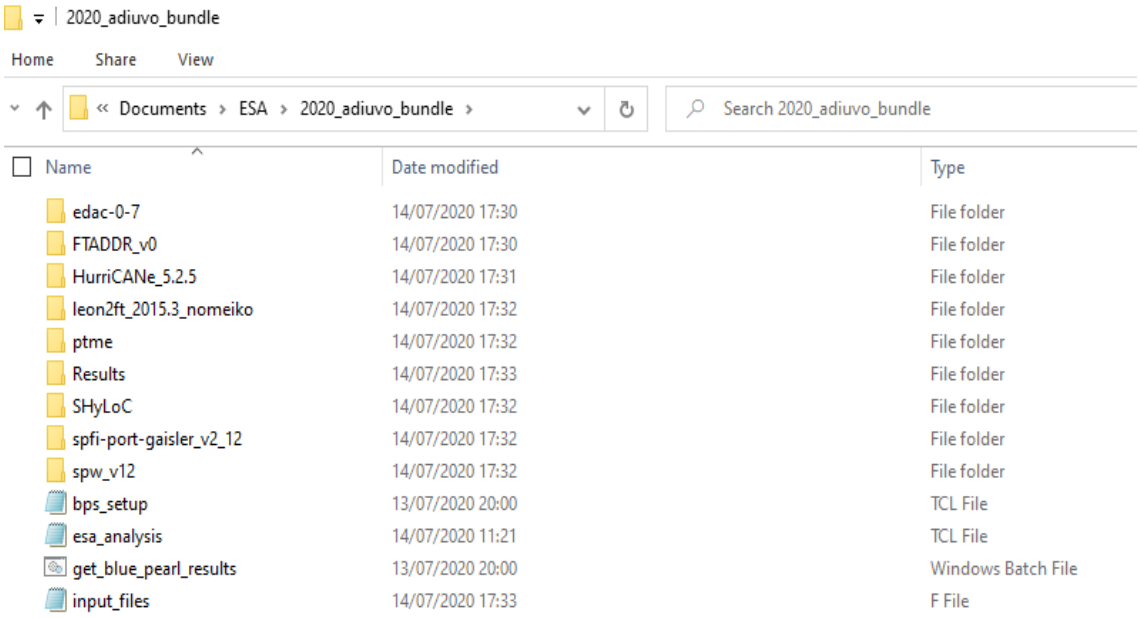
To provide further information on the ESA rule violations should they occur in design settings select Messages and from Use Messaging and Check Package drop down select ESA_IP



We are now in a position where files can be added to the project and the project saved and the design loaded and analysed.

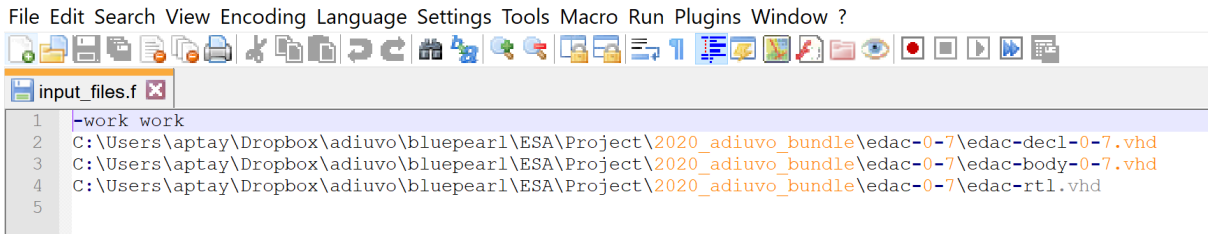
Scripted Flow

The scripted flow uses all four of the scripts cloned from the GitHub Repository. We will use the input_files.f macro to select the files to be loaded.

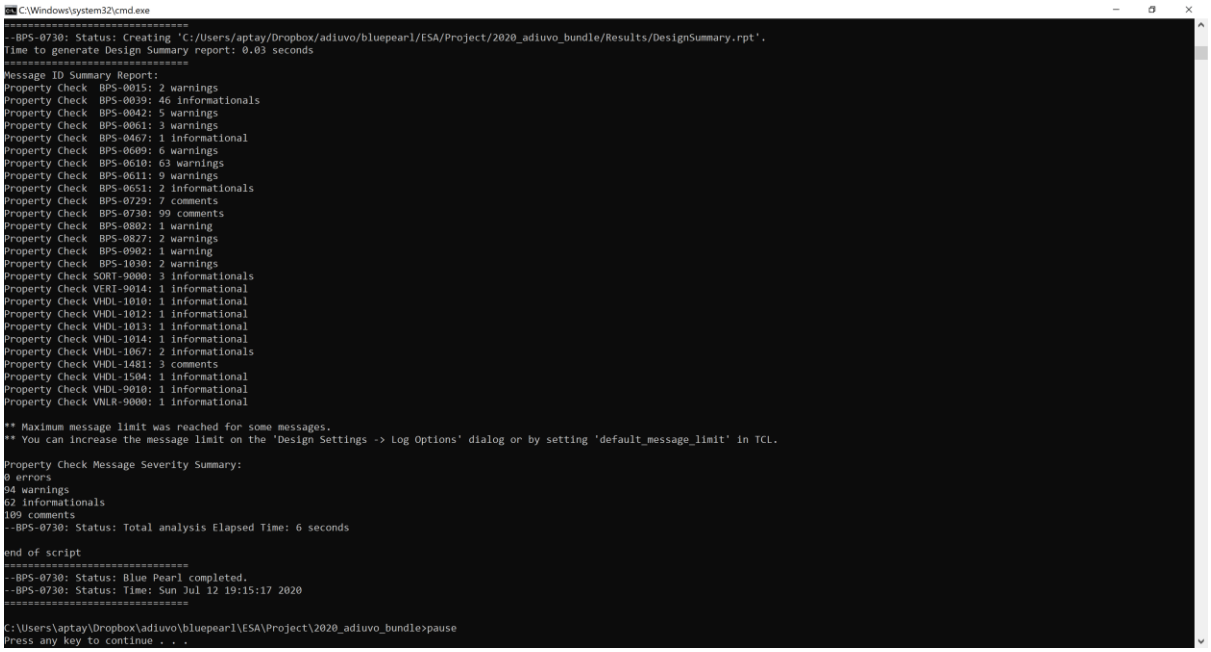


The four scripts located above the top of the RTL projects to be analysed

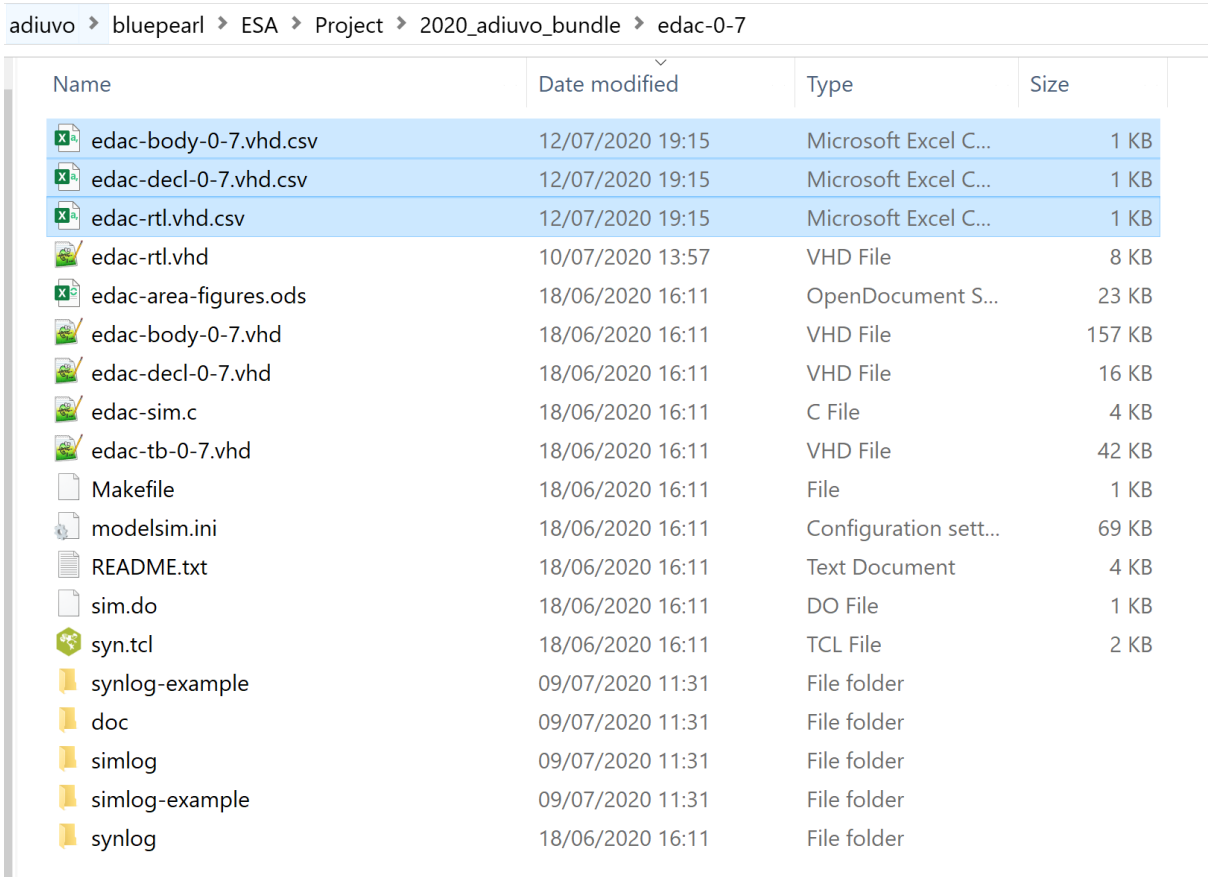
The ONLY file which needs to be changed to run each of the projects is input_files.f this contains the source code to be added to the project created and analysed.



To run the analysis double click on the get_blue_pearl_results.bat this will open a Blue Pearl CLI session in a command window and run the analysis



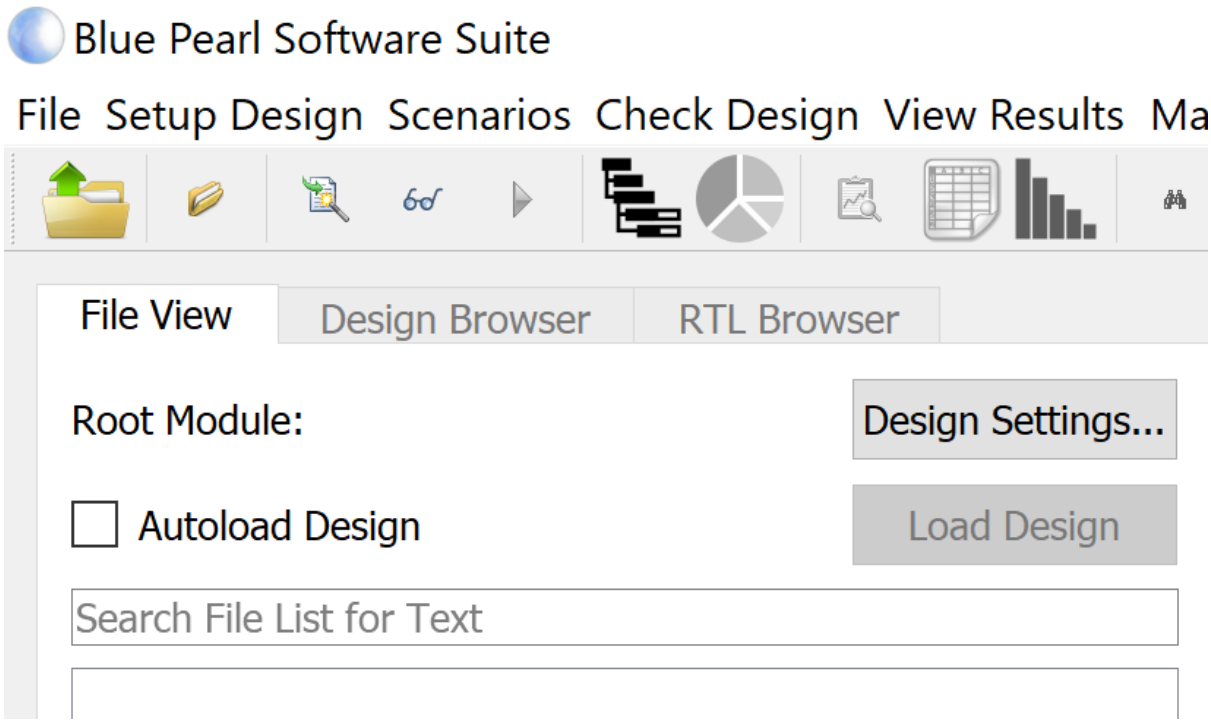
The results can be observed in the command window, the results are also written out to CSV files. One CSV file is generated for each file analysed; these CSV files will be located in the same directory as the analysed source code



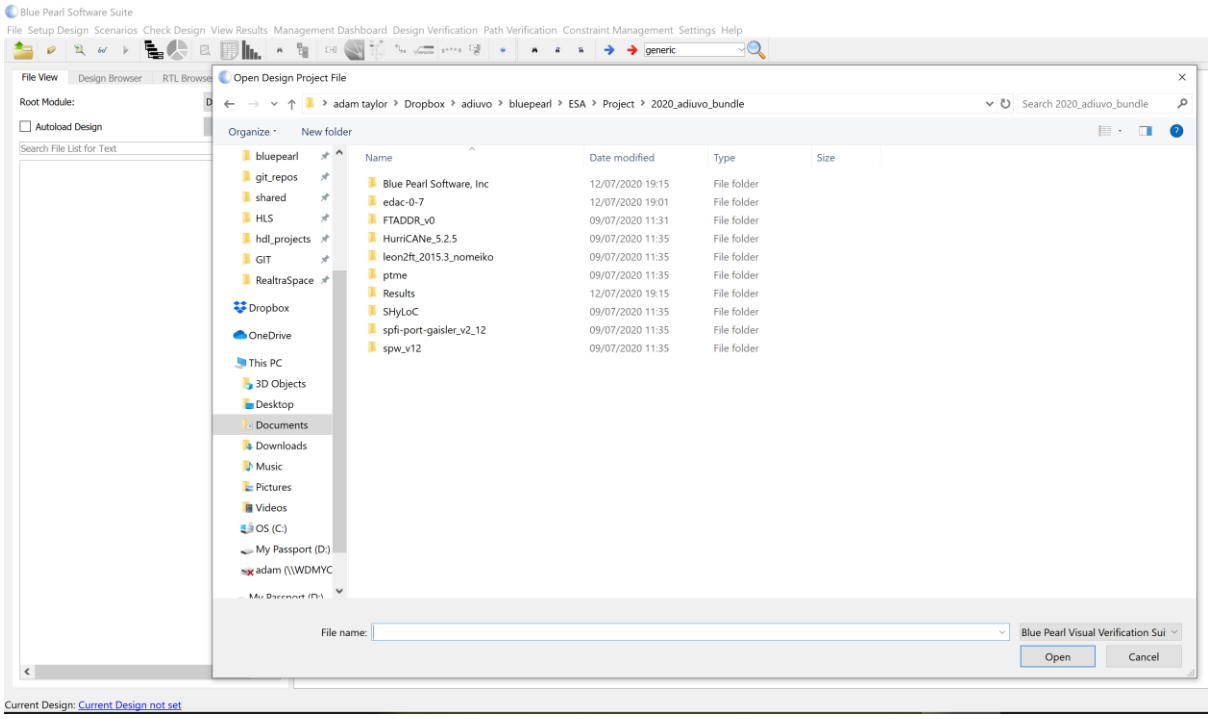
Switching from TCL to GUI

When the TCL scripts have been run it may be necessary to examine the issues identified in the GUI using the visual tools.

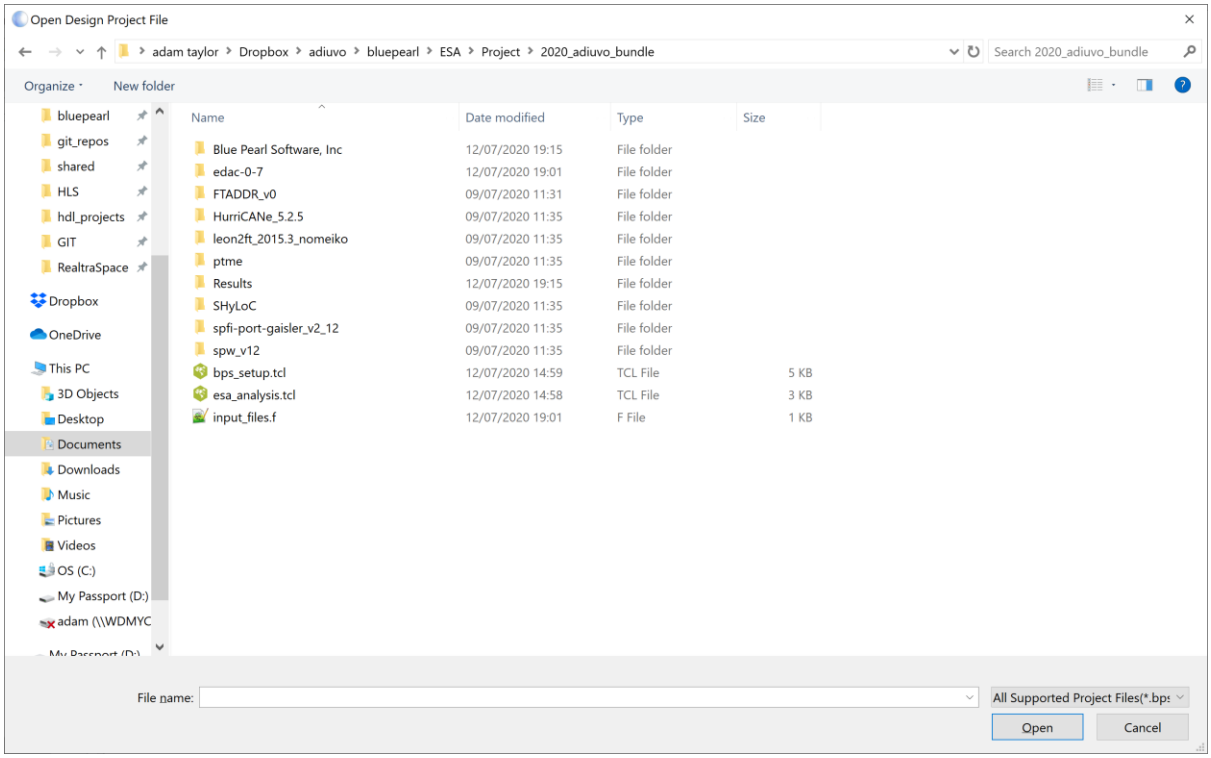
This can be achieved quite simply, open the GUI (ensure it is set up as section one) ensure the Autoload design feature is NOT enabled



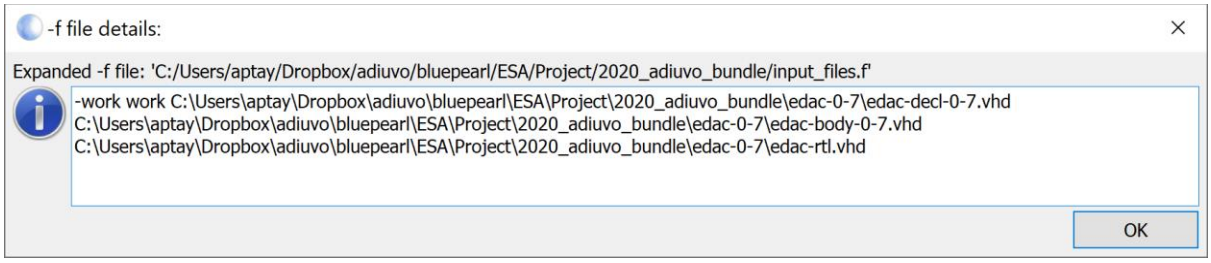
We can then open the design, select open design and navigate to the directory containing the scripts



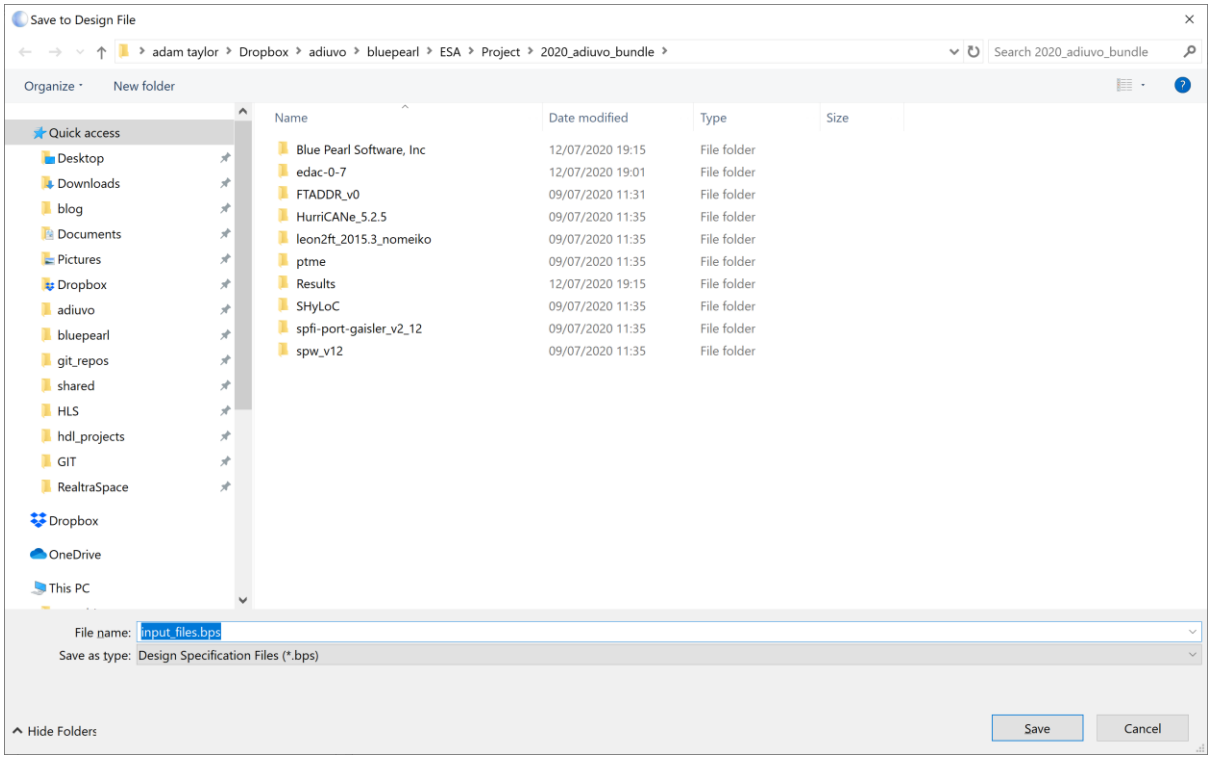
Change the file type to open from Blue Pearl Visual Verification Suite project to All supported project types.



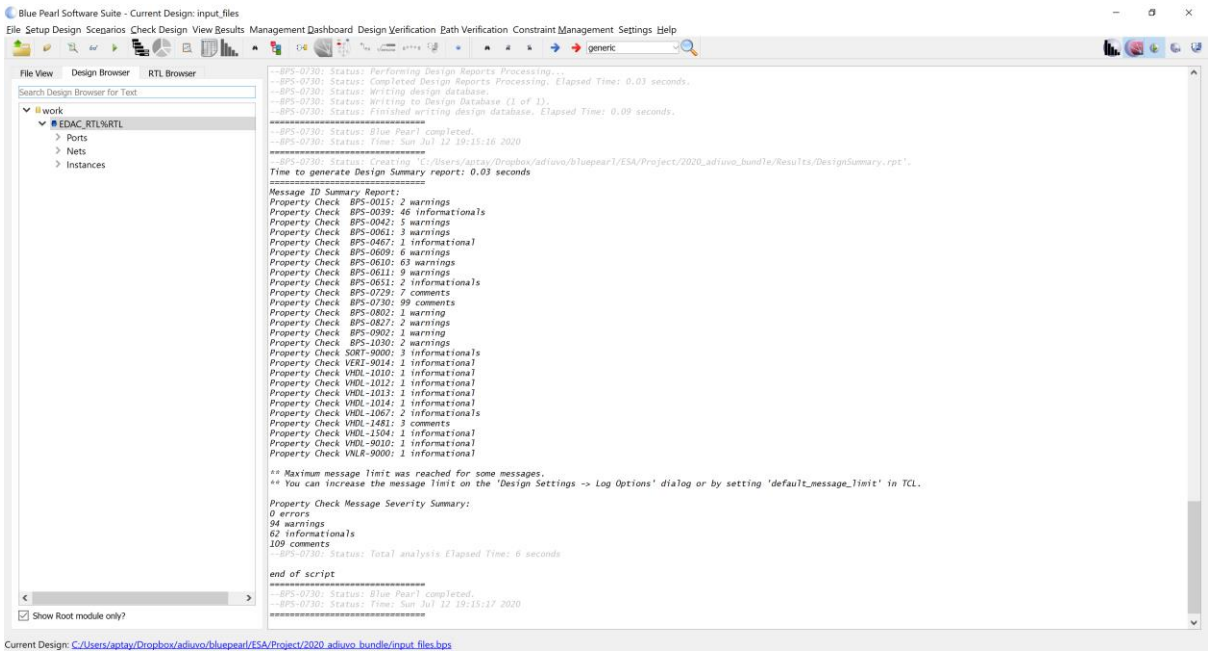
Select input_files.f and select open, this will open a listing of the files being imported



When prompted enable the BPS file to be saved, this saves settings for the GUI



This will open the Results directory which was previously created by the TCL script as it ran.



You can now analyse the elements of the design which require visual debugging e.g. clock domain crossing analysis results.