ScadaBuilder / ISaGRAF Conversion Steps

The secret is you must have all of the ISaGRAF v5 work done and in the common project database before you import your ScadaBuilder v5 nodes and change your controller type to a Pinnacle.

For each ISaGRAF v3.54 node you wish to import…
1. Move the project folder to a simple path like C:\ to avoid long path issues in 3.54.
2. Use ScadaBuilder v3.10 to…
    a. Export the register listing for the node.
    b. Start ISaGRAF 3.54 and under the Make/Application Run time options, delete any value in the Retained variables: Memory field.
    c. Next select compiler options and select the default button.
    d. Using the ISaGRAF Workbench, build the node
3. Export the node from the ScadaBuilder node menu.
4. Run the IAC (IAC.EXE - ISaGRAF Application Conversion) utility from the ISaGRAF 5.2 BIN directory.
    a. Open, then verify the project. Select into the node folder, not just the project folder. If the IAC program does not find an application then the "appli.300" file might be missing. If that's the case then copy the file into the node folder.
    b. Verify the import has the correct items selected in the tree.
        i. Deselect the "Not supported" tree
    c. Select Build Project Exchange file
        i. Resource name **MUST** be "[Node Name]_Rsc" and must match the original node name (case sensitive also).
            1. This is the name ScadaBuilder v5 will look for in ISaGRAF
        ii. Target name **MUST** be "ICLV5"
        iii. Target version **MUST** be "ISaGRAF 5"

Then setup the initial ISaGRAF project database…
5. Start ScadaBuilder v5.00
    a. Create a new project in a new folder and a dummy Pinnacle node to initialize the ISaGRAF project database. Also make sure the "Enable IsaGraf" and "Generate default I/O register" checkboxes are checked.
        i. Do an IsaGraf Make in ScadaBuilder.
        ii. You'll delete this node at the end of the conversion process.

Now, for the actual import…
6. Start ISaGRAF v5.20 from ScadaBuilder if it is not still running.
    a. Select the Hardware Architecture screen and insert a new configuration for each node from your original project that you are converting.
        i. Target MUST be "ICLV5"
        ii. Config name **MUST** be "[Node Name]_Cfg"
            1. This is the name ScadaBuilder v5 will look for in ISaGRAF

    b. Return to the Link Architecture screen and use File/import for the Exchange File previously created with the IAC utility.
- i. Select Import from file.
- ii. The RXF file will be located in the original project folder that you opened in the old IsaGraf, in the node folder.
- iii. You'll have to change the file type to RXF in the open dialog box.
- iv. Import each exchange file into the previously created configuration.
- v. Resource number SHOULD be unique (?)
- vi. Click the Close button and not the Next button after the last node has been imported.
- vii. You may need to drag the resource window for the new nodes to the right to see all of the resource windows. This is optional but helpful in the future.

7. In ISaGRAF use File/export for ALL variables to Excel File.
    a. Use the default options (other than Excel vs CSV).

Format the data…

For the next section, follow closely and don't skip steps. The goal here is to properly format the unpopulated address column in the ISaGRAF export using the original ScadaBuilder addresses.

8. Using Excel, put the correct HEXADECIMAL address into the Address column (N) using the following steps:
    a. Open the ScadaBuilder v3.10 variable export using NOTEPAD
- i. Select All (Ctrl-A)
- ii. Copy (Ctrl-C)

    b. Open the ISaGRAF 5 variable export in Excel.
    c. Insert a new worksheet
    d. Paste ScadaBuilder register data into newly created worksheet
    e. Select the Data menu, Text to columns option.
- i. Select Delimited
  - 1. This should be the only option selected
  - 2. Click Next, Pick Comma for delimiter.
- ii. Click Finish

    f. Sort the list
- i. Default sort is by column A, Register Name

    g. Back in the first worksheet from the new IsaGraf variable export, select the top number under the Address heading at N2.
    h. Insert the function DEC2HEX and select the top number at B1 on the 2nd sheet containing the old variable export. Leave the Places box empty and click OK.
    i. You will be automatically taken back the first sheet. Select the top address again and drag down to select all of the address boxes.
    j. You will now have a hex equivalent of the decimal address from the original project variables. These formula values will work when importing back into the new project where just having the original hex numbers will not. This is

due to the fact that the original hex numbers containing an "E" will be converted to an exponent type number instead of a hex number.

    k. Save the spreadsheet as an XLS file to preserve the 2nd sheet (CSV does not support keeping the second sheet).

    l. Delete the contents of all cells containing "0" or "#N/A".

Get addresses back into ISaGRAF

Now it's time to get the addresses back into ISaGRAF and actually bring the node into ScadaBuilder

9. Return to ISaGRAF and import the variables
   a. Select an Import Mode of APPEND
   b. Attempt a compile
      i. The customer may have logic unsupported in ISaGRAF 5.
10. Return to ScadaBuilder and Import each of the node files to the new project
    a. Change the controller type to a Pinnacle controller
       i. Use the default COM port assignments
          1. Customer will need to verify the assignments, so just accept the SB defaults when prompted.
    b. If you are prompted with the ISaGRAF Variable Import window (Prune / Delete Registers) select **cancel** and then follow these steps:
       i. Open the About Dialog.
       ii. Press Ctrl-S then close the about window
          1. This will set a checkbox next to the Import From ISaGRAF menu option.
       iii. Select the ISaGRAF menu, then Import from ISaGRAF (The checkbox).
          1. This will populate the ScadaBuilder variable database with the ISaGRAF 5 data so they will be in sync again.
11. Lastly, remove the dummy Pinnacle node
    a. Don't forget to clean up the folders by removing the ISaGRAF 3 files inside of each node folder.
       i. Pinnacle nodes have nothing in the node folder.