SwiftComp-Patran GUI installation manual
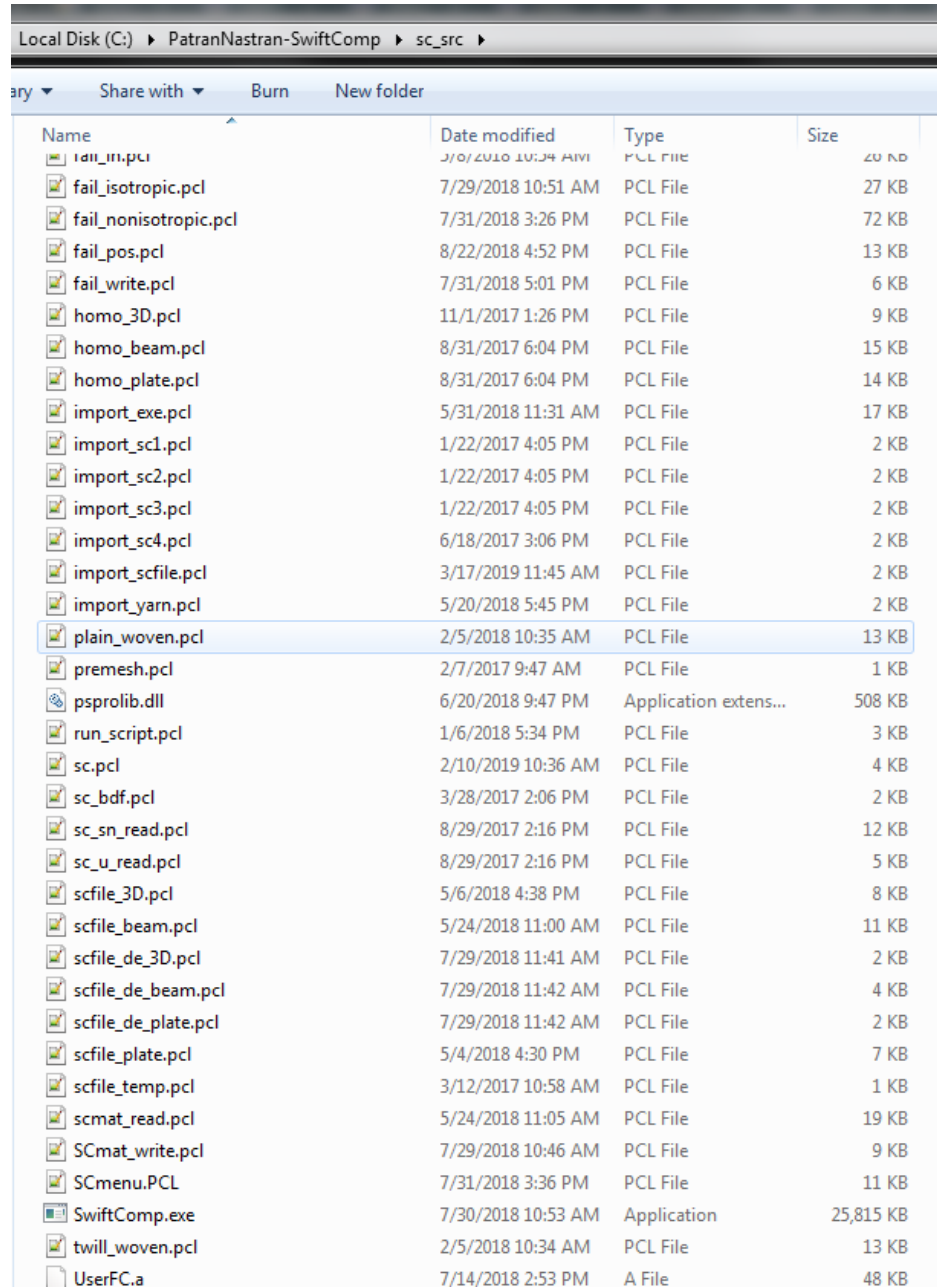
1. Download sc_src.zip, and unzip it. Copy all the files to your local computer folder (e.g. C:\PatranNastran-SwiftComp\sc_src).

Name	Date modified	Type	Size
fail_in.pcl	3/8/2018 10:54 AM	PCL File	20 KB
fail_isotropic.pcl	7/29/2018 10:51 AM	PCL File	27 KB
fail_nonisotropic.pcl	7/31/2018 3:26 PM	PCL File	72 KB
fail_pos.pcl	8/22/2018 4:52 PM	PCL File	13 KB
fail_write.pcl	7/31/2018 5:01 PM	PCL File	6 KB
homo_3D.pcl	11/1/2017 1:26 PM	PCL File	9 KB
homo_beam.pcl	8/31/2017 6:04 PM	PCL File	15 KB
homo_plate.pcl	8/31/2017 6:04 PM	PCL File	14 KB
import_exe.pcl	5/31/2018 11:31 AM	PCL File	17 KB
import_sc1.pcl	1/22/2017 4:05 PM	PCL File	2 KB
import_sc2.pcl	1/22/2017 4:05 PM	PCL File	2 KB
import_sc3.pcl	1/22/2017 4:05 PM	PCL File	2 KB
import_sc4.pcl	6/18/2017 3:06 PM	PCL File	2 KB
import_scfile.pcl	3/17/2019 11:45 AM	PCL File	2 KB
import_yarn.pcl	5/20/2018 5:45 PM	PCL File	2 KB
plain_woven.pcl	2/5/2018 10:35 AM	PCL File	13 KB
premesh.pcl	2/7/2017 9:47 AM	PCL File	1 KB
psprolib.dll	6/20/2018 9:47 PM	Application extens...	508 KB
run_script.pcl	1/6/2018 5:34 PM	PCL File	3 KB
sc.pcl	2/10/2019 10:36 AM	PCL File	4 KB
sc_bdf.pcl	3/28/2017 2:06 PM	PCL File	2 KB
sc_sn_read.pcl	8/29/2017 2:16 PM	PCL File	12 KB
sc_u_read.pcl	8/29/2017 2:16 PM	PCL File	5 KB
scfile_3D.pcl	5/6/2018 4:38 PM	PCL File	8 KB
scfile_beam.pcl	5/24/2018 11:00 AM	PCL File	11 KB
scfile_de_3D.pcl	7/29/2018 11:41 AM	PCL File	2 KB
scfile_de_beam.pcl	7/29/2018 11:42 AM	PCL File	4 KB
scfile_de_plate.pcl	7/29/2018 11:42 AM	PCL File	2 KB
scfile_plate.pcl	5/4/2018 4:30 PM	PCL File	7 KB
scfile_temp.pcl	3/12/2017 10:58 AM	PCL File	1 KB
scmat_read.pcl	5/24/2018 11:05 AM	PCL File	19 KB
SCmat_write.pcl	7/29/2018 10:46 AM	PCL File	9 KB
SCmenu.PCL	7/31/2018 3:36 PM	PCL File	11 KB
SwiftComp.exe	7/30/2018 10:53 AM	Application	25,815 KB
twill_woven.pcl	2/5/2018 10:34 AM	PCL File	13 KB
UserFC.a	7/14/2018 2:53 PM	A File	48 KB

2.

3. Open ini.pcl in Patran installation folder (e.g. C:\MSC.Software\MSC_Nastran_and_Patran_Student_Editions\20171\Patran), add the following line at the end of ini.pcl file: *file_add_path(0,"c:\PatranNastran-SwiftComp\sc_src"))*. Note the file path in the string is the same as the folder path in step 1.

```
ui_exec_function("uil_file_new", "init")
IF( is_csrs()    ) THEN  uil_file_new.load_template(p3_home // "/template.db"         )
IF( is_md()      ) THEN  uil_file_new.load_template(p3_home // "/md_template.db"       )
IF( is_msc_afea() ) THEN uil_file_new.load_template(p3_home // "/mscmarc_template.db"   )
IF( is_msc_dfea() ) THEN uil_file_new.load_template(p3_home // "/mscnastran_template.db" )
IF( is_msc_fea() ) THEN  uil_file_new.load_template(p3_home // "/mscnastran_template.db" )
IF( is_sinda()   ) THEN  uil_file_new.load_template(p3_home // "/mscsinda_template.db"  )
IF( is_sesam()   ) THEN  uil_file_new.load_template(p3_home // "/sesam_template.db"     )


!!INPUT p3epilog.pcl NOERROR


IF( !p3_home_set ) THEN user_message( "ERROR", 0, "INIT.PCL", "Variable P3_HOME not set properly!" )

#  file_add_path(0,"c:\SwiftComp\sc_src")
file_add_path(0,"c:\PatranNastran-SwiftComp\sc_src")
```

3. Open sc.pcl file in the folder created in the first step (e.g. c:\SwiftComp\sc_src). Change "sc_pcl_dir" to the folder you where you store pcl files in step one. In this case, the folder is the "C:\PatranNastran-SwiftComp\sc_src". Note users can put the pcl files and SwiftComp.exe to any folder, and then change the corresponding folder name in step 2 and 3. Next, change "sc_dir" to the folder you want to store all the SC data files. SC data files refer to SC input file (.sc), SC homogenization results file (.k) and dehomogenization displacements and stress/strain files (.u and .sn) and so on. In my case, the folder is C:\PatranNastran-SwiftComp\sc_data. Change "python_dir" to the directory where you installed python2.

```
********************************************************************
********************************************************************/
Global string sc_pcl_dir[100]
Global string sc_dir[100]
Global string python_dir[100]
Global Integer model_flags
model_flags = 3
sc_pcl_dir = "c:\PatranNastran-SwiftComp\sc_src"   /* path contains all .pcl files and SC exe file */
sc_dir = "c:\PatranNastran-SwiftComp\sc_data"      /* folder contains all .sc related files */
python_dir = "c:\01-Work\01-Software\Anaconda2\python.exe"     /* path of python.exe */

file_add_path(0,sc_pcl_dir)
```

4. Require SwiftComp license from Prof. Wenbin Yu, and open Patran model. Type "!!input sc.pcl" in the Patran command window.

Local Disk (C:) ▶ 01-Work ▶ 15-Nastran ▶ workspace ▶ working

Burn   New folder

Name	Date modifi
license	10/11/2016
patran.ses.01	3/13/2017 1
patran_file.db	3/13/2017 1

```
$# Current graphics driver type in use: HardwareDriver
$# Session file patran.ses.01 started recording at 13-Mar-17 10:36:39
$# Build: 22.0.412320 Fri May 20 10:46:11 PDT 2016
$# Recorded by: Patran 2016   (Student Edition)
uil_file_open.go( "C:\01-Work\15-Nastran\workspace\working\patran_file.db" )
$# Database version 3.17 created by Patran 2016   (Student Edition) successfully opened.
$# Warning reported in application FILE by application Journal
$#    Journal file C:\01-Work\15-Nastran\workspace\working\patran_file.db.jou does not ex
$# FLEXlm initialization complete.  Acquiring license(s)...
$# License File: EDU
$# Patran 2016   (Student Edition) has obtained 0 concurrent license(s) from FLEXlm per a re
$# Begin Reading RMB Menu definitions
$# Done Reading RMB Menu definitions
$# Loading dynamic library C:\MSC.Software\MSC_Nastran_Student_Edition\20160\Patran

!!input sc.pcl
```

or Help, press F1