Operator EXEC_LOGICIEL

1 Goal

The goal of this operator is to carry out an external software since code_aster on the local machine. That can be any program or achievable script.
A first alternative is to carry out a maillor instead of an unspecified program in order to produce a file of grid. In this case, SALOMÉ is started or GMSH while passing to him a data file in argument and one recovers then a file of grid.
The second alternative consists in calling on a session SALOMÉ already open on the local machine or a distant machine and carrying out there a script (visualization for example).

2 Syntax

```
EXEC_LOGICIEL (
# or if GRID is present
e-mail = EXEC_LOGICIEL (                                          [grid]

    ◊  |  SOFTWARE  =  nom_exe,                                   [TX]
          ◊  ARGUMENT  =  (arg1, arg2,… )                         [l_TX]
          ◊  SHELL     =  /  'NOT',                               [DEFECT]
                          /  'YES',

       |  /  GRID   =  _F (
             ♦  FORMAT    =  /  'GMSH',                          [TX]
                             /  'SALOMÉ'
             ◊  UNITE_GEOM   =  /  igeom,                        [I]
                             =  /  16                            [DEFECT]
             ),

       |  /  SALOMÉ    =  _F (
             ♦  CHEMIN_SCRIPT   =  script,                        [TX]

             ◊   MACHINE        =   machine ,                        [TX]
                 # if MACHINE is indicated
                 ♦ USER   =  user,           [TX]
             ◊  PORT            =  /  port,                       [I]
                                   /   2810,                      [DEFECT]
             ◊  FICHIERS_ENTREE     =  L_arg ,                    [l_TX]
             ◊  FICHIERS_SORTIE     =  L_arg ,                    [l_TX]
             ◊  ♦  NOM_PARA         =  L_arg ,                    [l_TX]
                ♦  VALE             =  L_arg ,                    [l_TX]
             ),

       ◊  CODE_RETOUR_MAXI =  /  icode,                           [I]
                              /  0,                               [DEFECT]
       ◊  INFORMATION  =  /  1  ,                                       [I]
                          /  2  ,                                 [DEFECT]
)
```

3 Operands

3.1 Operand SOFTWARE

◊ SOFTWARE = nom_exe

Name of the order or achievable to call. It is a character string (between ‘), it is necessary to specify way complete to reach the achievable one.
This operand can also to be used to overload the order by default during the creation of a grid or of the call of SALOMÉ.

3.2 Keyword ARGUMENT

◊ ARGUMENT = l_arg

Allows to define the list of the arguments passed in the achievable one. To each element of the list an argument provided to the achievable one corresponds. If an argument contains a space, the achievable one will recover a character string containing space (see keyword SHELL).
This keyword is obligatory if one creates a grid with the format SALOMÉ. In this case, it is necessary to provide a single argument which is the name of the file which is produced by the script of grid.

3.3 Keyword SHELL

◊ SHELL = ‘YES’/‘NOT’

The good practice consists in carrying out a program (keyword SOFTWARE) with a list of arguments (keyword ARGUMENT). One leaves then SHELL with its value by default which is worth ‘NOT’.
Sometimes, one wishes to not carry out a program to which one passes from the arguments but a command line supplements (for example starting with a test yew). In this case, it is necessary to use SHELL=' NON'. The keyword SOFTWARE and the possible ones ARGUMENT[S] additional are joined with a space to compose the complete command line.
See the documentation of the module subprocess of Python for shelves of SHELL=' NON' (False).

3.4 Keyword GRID

◊ GRID = _F (

Allows to produce a grid by calling directly since the command file one of the following tools: GMHS or SALOMÉ. Grid e-mail is turned over by the operator.
By default, the order to carry out the maillor is defined in the file of installation xxx/share/aster/external_programs.js.
One can use SOFTWARE (and ARGUMENT/SHELL) to call another achievable.

3.4.1 Operand FORMAT

/ FORMAT = ‘GMSH’

Creation of a grid to format GMSH.

/ FORMAT = ‘SALOMÉ’

Creation of a grid to the format SALOMÉ, or more generally a file with format MED.
In this case the keyword ARGUMENT is obligatory and contains the name of file MED produced by script.

3.4.2 Operand UNITE_GEOM

UNITE_GEOM = igeom

Logical number of unit associated with the data file used to create the grid.

3.5 Keyword SALOMÉ

SALOMÉ = _F (

Allows to carry out a script in an authority of SALOMÉ who must already to be impetus (Code_Aster does not launch SALOMÉ in this case and does not finish it either), on the same machine as the object computer DE Code_Aster or on a distant machine. It is the launcher Salome who manages the contact of a distant authority.
Script SALOMÉ must be with syntax Python and being exécutwhitebait since SALOMÉ via one File*Load Script*. It must follow a certain number of conventions of writing, in particular on the variables used for the input files (i.e. used by script) and the output files (i.e. generated by script), bus of the adjustments/replacements are operated before the execution in SALOMÉ.
By default, one uses script … /outis/salome but one can overload this value by using the keyword SOFTWARE.
In the event of connection to a distant session, it is necessary to indicate, with the keyword SOFTWARE, the site of script on the distant machine. Failing this, it will be supposed that it is to install at the same place as on the local machine (and thus that the repertoire of installation of Code_Aster is the same one).

3.5.1 Operand CHEMIN_SCRIPT

CHEMIN_SCRIPT = '/. /script.py'

This keyword makes it possible to specify the way of script SALOMÉ. One can use an absolute way (/home/user/mon-script.py) or relative (./fort.99 will open the file fort.99 contents in the temporary repertoire of execution DE Code_Aster).
If script needs files as starter and/or creates output files, the keywords are used FICHIERS_ENTREE and FICHIERS_SORTIE. See the two paragraphs hereafter.

3.5.2 Operand MACHINE

MACHINE = machine

This keyword makes it possible to specify the name of the machine or sound address IP on which is openE the session of SALOMÉ to be contacted. Louse to use the local machine, this keyword should not be used.

3.5.3 Operand USER

USER = user

This keyword is obligatory if MACHINE is well informed. It is the name of the user who started the authority SALOMÉ on the distant machine.

3.5.4 Operand PORT

PORT = port

This keyword makes it possible to specify the port of the authority SALOMÉ which one seeks to be attached. This port is displayed during the launching of SALOMÉ starting from a terminal. By default, it is worth 2810 but it should be checked!

3.5.5 Operand FICHIERS_ENTREE

◊ FICHIERS_ENTREE = ['/. /fichier_in1', '/. /fichier_in2',…]

This keyword makes it possible to specify the list of the data files who could be used by script SALOMÉ (for example a file MED if script corresponds to a postprocessing).
For that, script will be modified by replacing the character strings INPUTFILE1 with INPUTFILEn by N files of FICHIERS_ENTREE. If necessary, the launcher Salome takes care to copy these files from the distant machine, then of (Re) modifying script to write the name of the files there after recopy.

3.5.6 Operand FICHIERS_SORTIE

◊ FICHIERS_SORTIE = ['/. /fichier_out1', '/. /fichier_out2',…]

In a symmetrical way with FICHIERS_ENTREE, one can recover the files generated by script SALOMÉ. Script produces files under the names OUTPUTFILE1 with OUTPUTFILEp. These character strings will be replaced by the files of FICHIERS_SORTIE.
In the event of distant launching, LE launcher Salome takes care of (Re) modifying script to insert there the names used on the distant machine, then to repatriate the produced files by using the names of FICHIERS_SORTIE.

3.5.7 OperandS NOM_PARA and VALE

◊ NOM_PARA = ['para1', 'para2',…]
◊ VALE = ['vale1', 'vale2',…]

These two keywords allow paramétriser script SALOMÉ by replacing each occurrence of para1 by vale1, para2 by vale2, etc.

3.6 Operand INFORMATION

◊ INFORMATION = information

If INFO=2, the messages coming from the order carried out are printed in the file MESSAGE. It is the value by default. That makes it possible to preserve the trace of the execution.

3.7 Operand CODE_RETOUR_MAXI

◊ CODE_RETOUR_MAXI = icode

Maximum value of the code return returned by the order or the software which is tolerated to consider that the execution proceeded well. By default this value is worth 0, if it is affected to – 1, the code return of the order is ignored.

4 Examples

One can find examples of use in the CAS-test zzzz151a.
The macro-orders are also of good examples of use of the various possibilities, in particular STANLEY for the execution of script in a session SALOMÉ.