

Techila with R



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Minimalistic syntax and optional parameters

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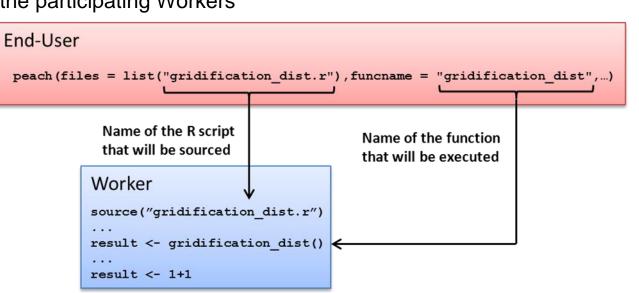
Simple interface for creating Projects

Typically the R peach syntax will define:

- The name of the function that will be called
- The name of the R-script that will be sourced on the Worker
- Input arguments for the executable function
- Files that will be transferred to the participating Workers
- Number of Jobs
- Location of the gmk directory



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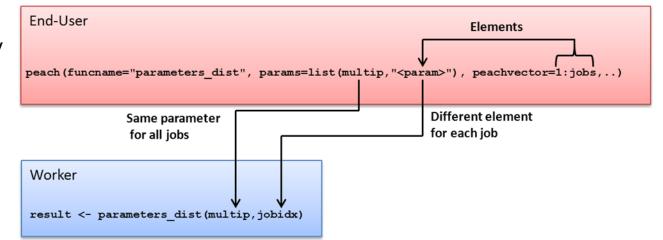




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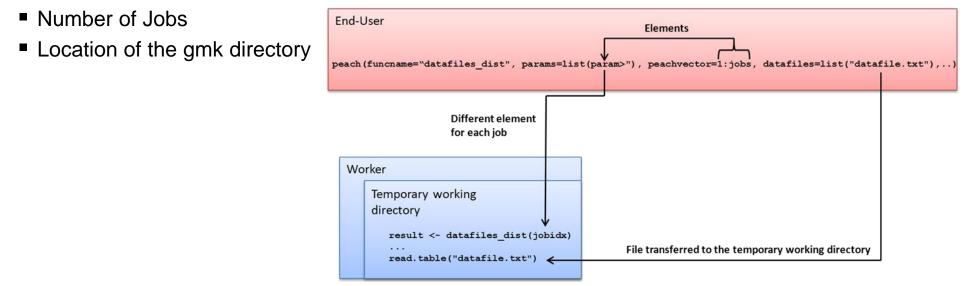




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Introduction of the R peach syntax

Example of a complete R peach syntax:



Peach features can be enabled by adding more parameters:

```
# Function executed on Workers
peach(funcname="functionName",
      files=list("exampleSript.R"),
                                          # Script sourced on Workers
     params=list("<param>",parameter=10),# Input arguments
      datafiles=list("datafile.txt"),
                                          # File transferred to Workers
                                          # Number of Jobs set to 10
     peachvector=1:10,
      gmkroot="../../../..",
                                          # Path of the 'gmk' directory
                                          # Runtime Bundle version
     Rversion="2101",
      stream = TRUE,
                                          # Enable streaming
      callback="cbFun")
                                          # Execute 'cbFun' once for
                                          # each result.
```



Preparation

Accessing the peach interface requires two R packages

- rJava (available in repositories)
- techila (included in the Techila Grid Management Kit)

Installing rJava package

- 1. Launch R
- 2. Install from R with the following command:

install.packages("rJava")

Installing techila package

- 1. Change your directory in R to "<full path>/gmk/grid/R"
- 2. Install with command:

```
install.packages("techila", repos=NULL, type="source")
```



Creating a test Project

1. Change your current working directory in R to:

<full path>/gmk/examples/R/Tutorial/1_gridification

2. Source the run_gridification.r script:

source("run_gridification.r")

3. Create the test Project:

result <- run_gridification(5)</pre>

4. When prompted, enter your password

RGui (64-bit) - [R Console]		X
<u> R</u> <u>E</u> ile <u>E</u> dit <u>V</u> iew <u>M</u> isc <u>P</u> ackages <u>W</u>	indows <u>H</u> elp	- 8 ×
🖻 🗗 🖬 🛍 🗘 🕋 🎒		
[1] "C:/TechilaGMK/gmk/example		^
<pre>> source("run_gridification.r" > result<-run gridification(5)</pre>		

Acceleration factor = 14,29%.		
CPU time used 0 d 0 h 0 m 2 s.		
Real time used 0 d 0 h 0 m 14		
**********************	******	
Project Statistics:		
4 workers participated		=
Avg efficiency per job:	55,12%	
CPU Time per job:	0,482s (min) 0,501s (avg) 0,530s (max)	
Memory used per job:		
I/O read per job:	1,736MB (avg) 1,764MB (max)	
	0,002MB (avg) 0,002MB (max)	
Average total I/O per job:	1,738MB (3,470MB/s)	
[1] 2 2 2 2 2		
>		
1		P

5. A status bar will be displayed containing Project information



Requests on what features to demonstrate

- Techila Grid Management Kit contains examples of:
 - Streaming & Callback
 - Job Input Files
 - How to include your own libraries
 - Managing result files with the filehandler
 - Iterative Projects
 - And more...

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