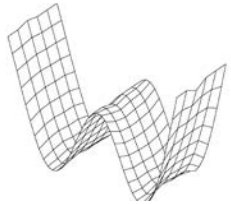
PEST::cloud

pest.cloud

S.S. Papadopulos & Associates, Inc.



Watermark Numerical Computing

Calibrate with Confidence in the Cloud

1.
Zip all PEST
and model files

2.
Upload your zip
file to PEST.cloud

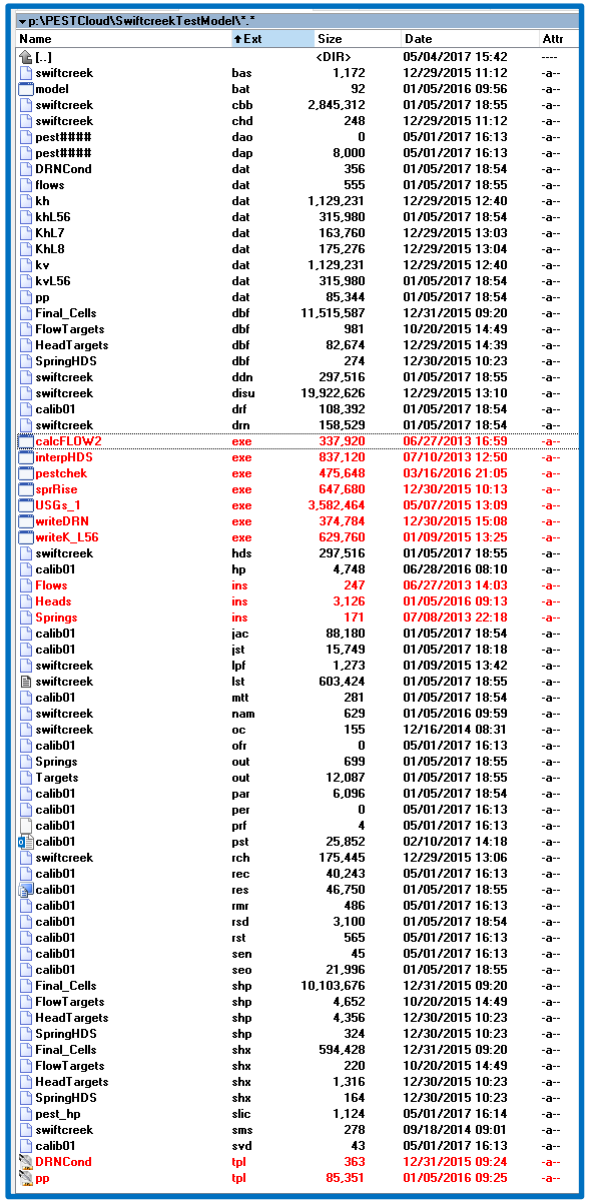
3.
Choose number
of agents and deploy!

1. ZIP

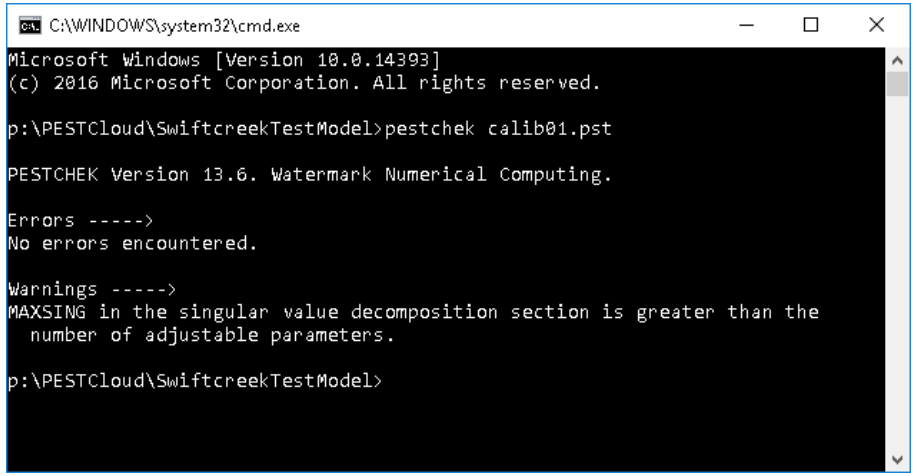
Ensure all PEST and model files are in the same folder
(and any dependencies)

Run PEST v.14 with new /hp switch – this executes and saves information about the base model so it does not need to be repeated in the cloud

ZIP all the files in the folder

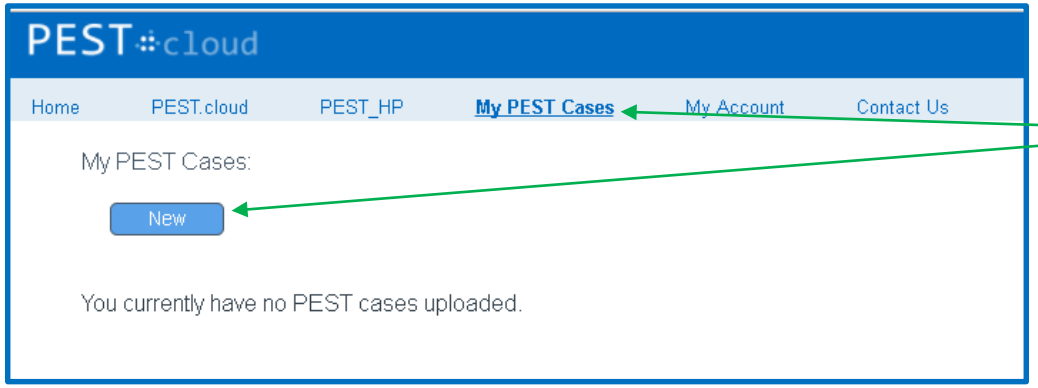


Be sure to run PESTCHEK!

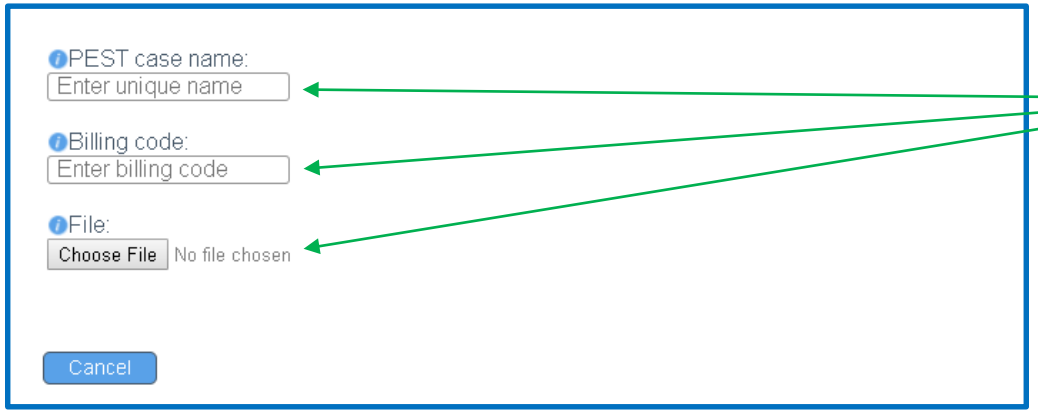


pest.cloud

2. Upload



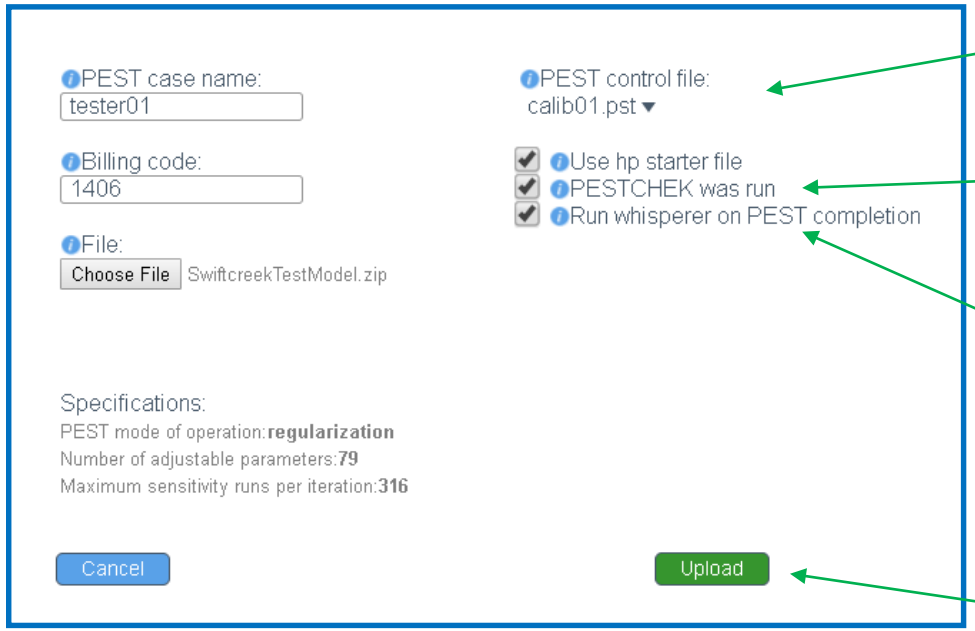
After registering – go to ‘My PEST Cases’ and choose ‘New’



Enter a name, a billing/project number, and choose your ZIP file

2. Upload

PEST cloud



Choose PST file from dropdown
(from list of all PST files in ZIP file)

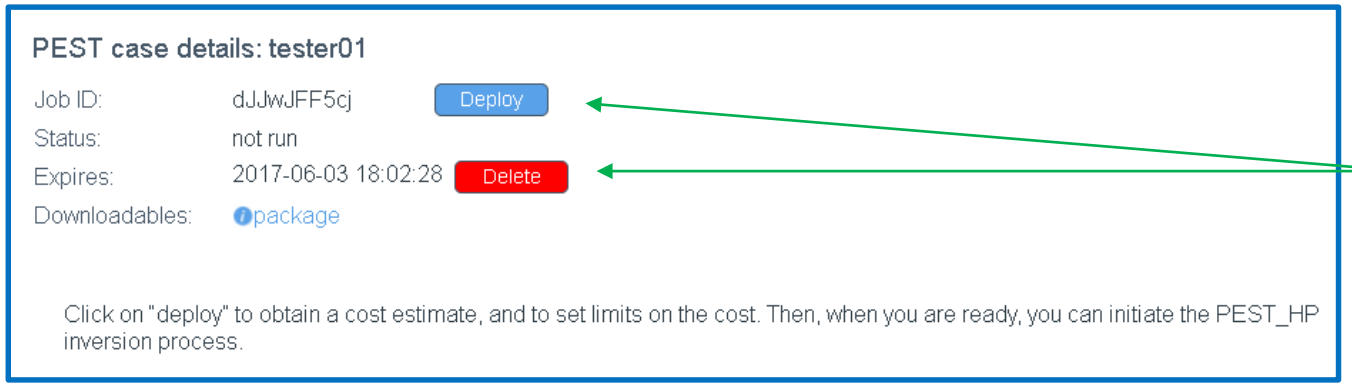
Verify PESTCHEK was run on local machine
prior to upload

(Optionally) run new PEST Whisperer program,
which evaluates various PEST_HP output files and
and provides advice on what settings may result
in better performance next time

Upload your ZIP file and preferences to
PEST.cloud

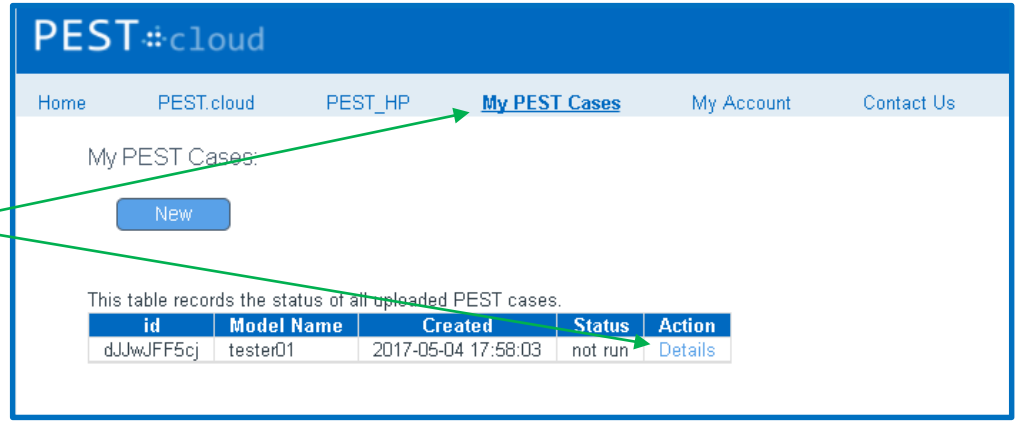
pest.cloud

3. Deploy



After uploading your ZIP, you can choose to 'Deploy' or 'Delete' your file from the cloud

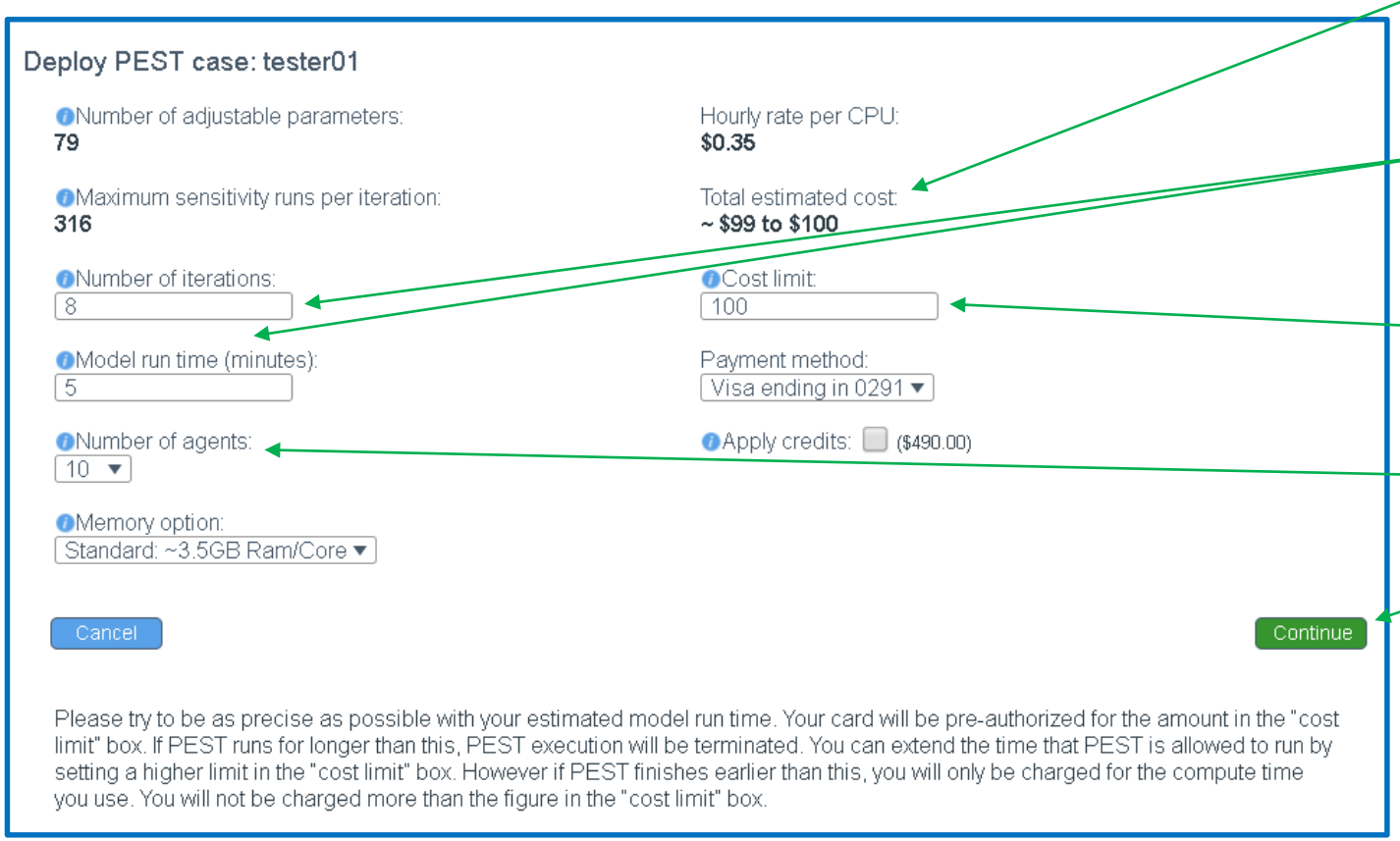
Also, after uploading your ZIP, you can choose to 'Deploy' or 'Delete' at a later time by going to 'My PEST Cases' and clicking the 'Details' link for that case



pest.cloud

3. Deploy

PEST cloud



Before deploying, PEST.cloud provides a cost estimate to complete your PEST_HP case

You must provide an estimate of the number of PEST_HP iterations (up to NOPTMAX) and the model run time (in minutes)

Enter a NOT-TO-EXCEED cost limit
(PEST.cloud will terminate once it reaches this limit)

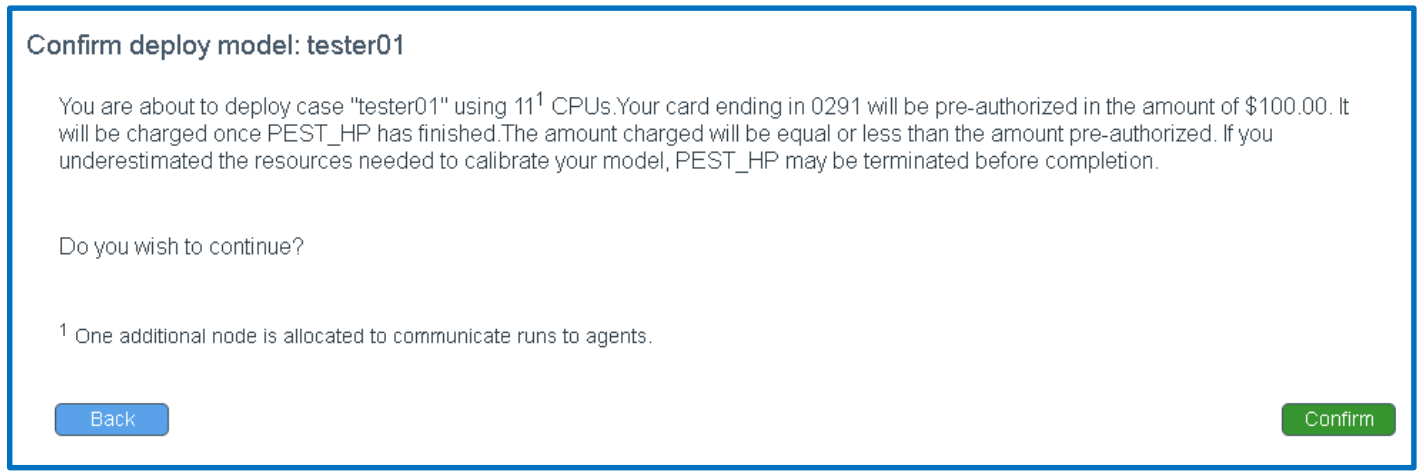
Choose the number of cloud agents you would like to use

and 'Continue' when ready

pest.cloud

3. Deploy

PEST cloud

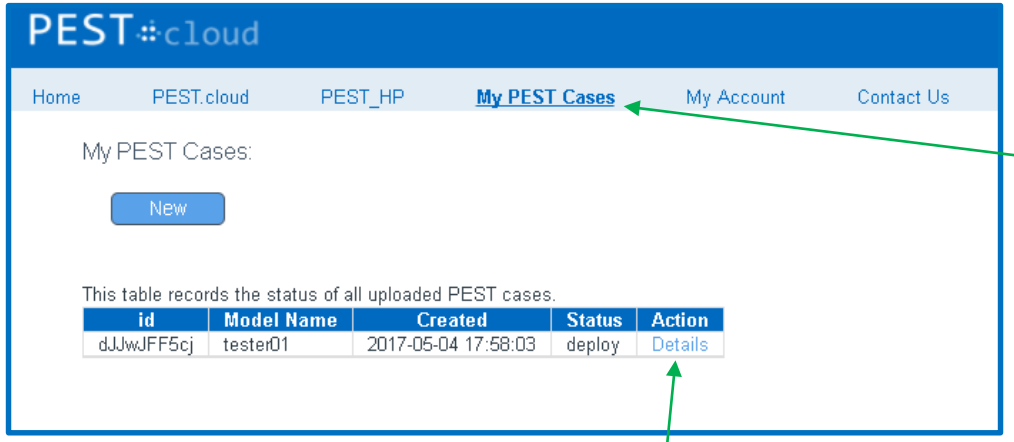


Confirm Deployment

pest.cloud

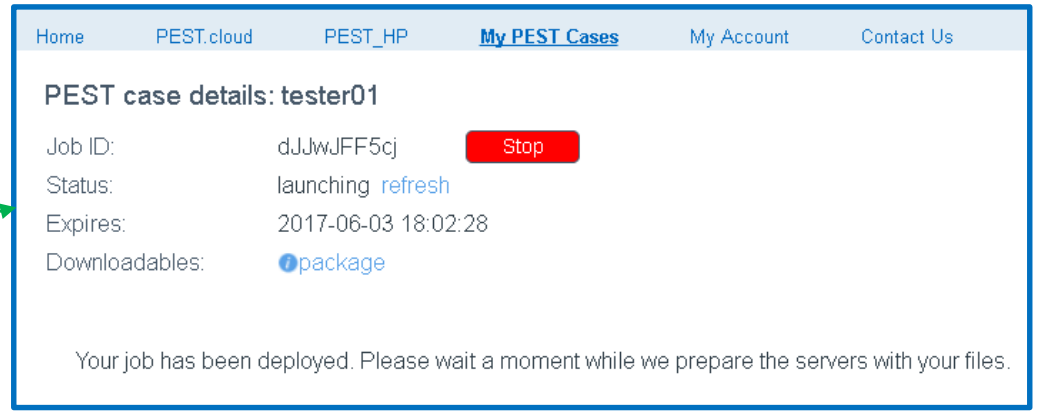
4. Execution

PEST cloud



After deploying, you are taken to ‘My PEST Cases’

Click the ‘Details’ link to get the status of your deployment and to review or download PEST_HP files

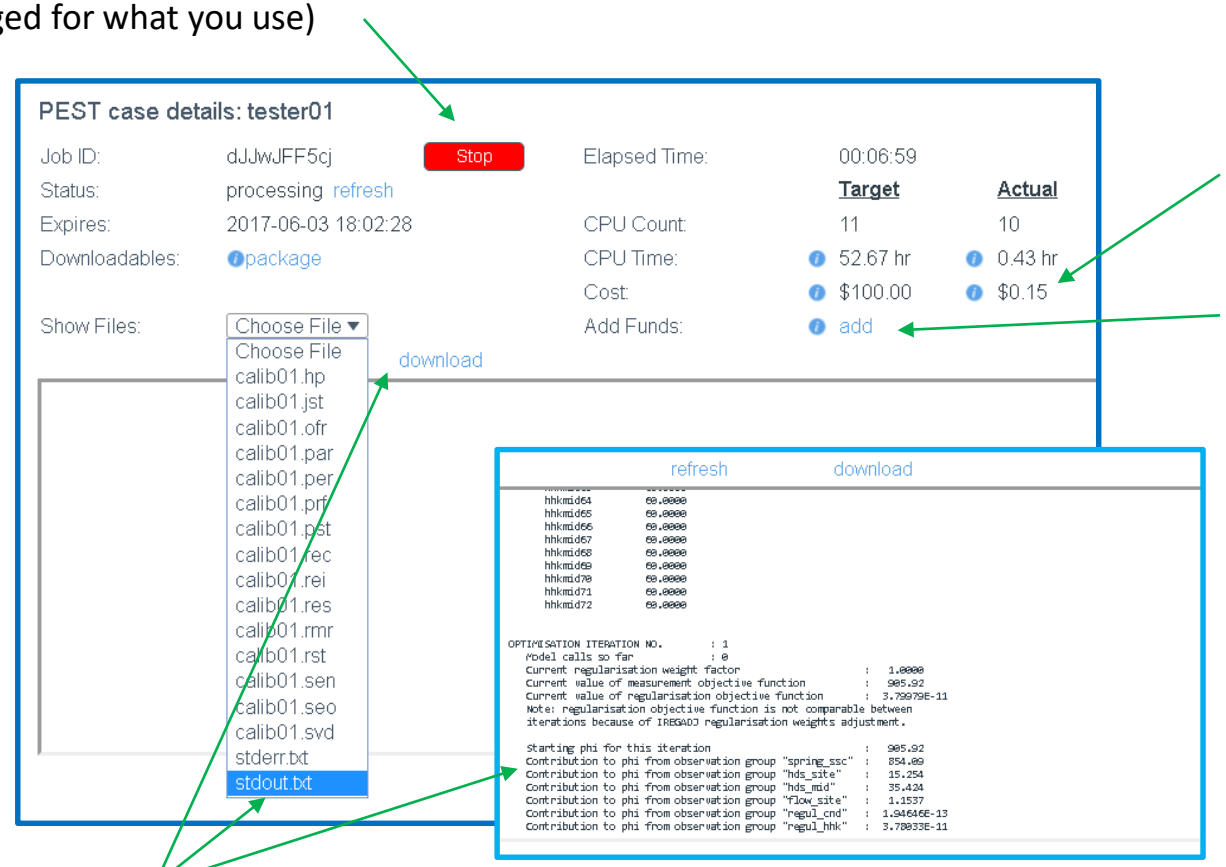


pest.cloud

4. Execution

PEST cloud

Stop your calibration at any time
(only get charged for what you use)



Track cost in real-time

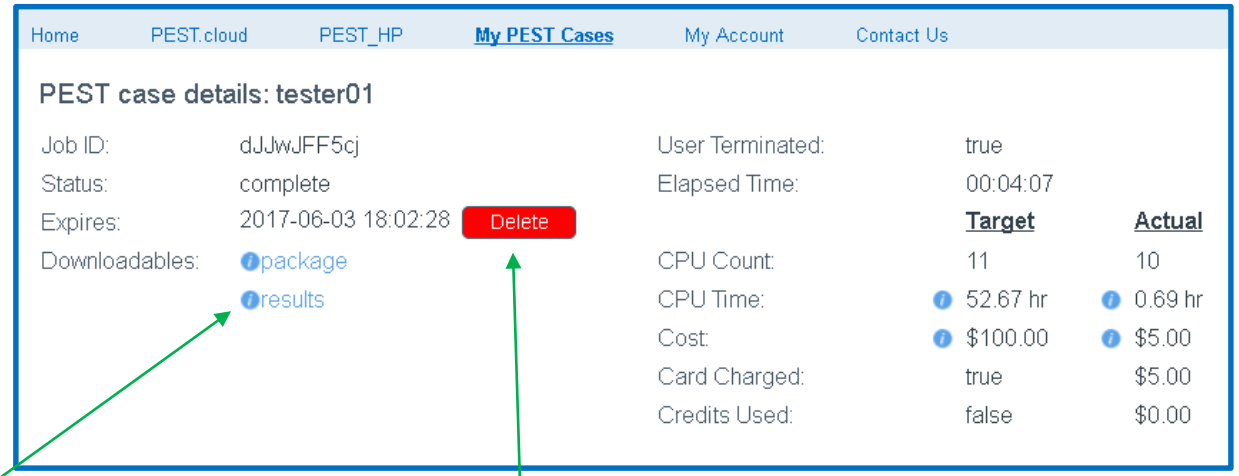
Add funds at any time to prevent pre-mature termination

Review/download any PEST_HP output files
(including the Master console - STDOUT)

pest.cloud

5. Completion

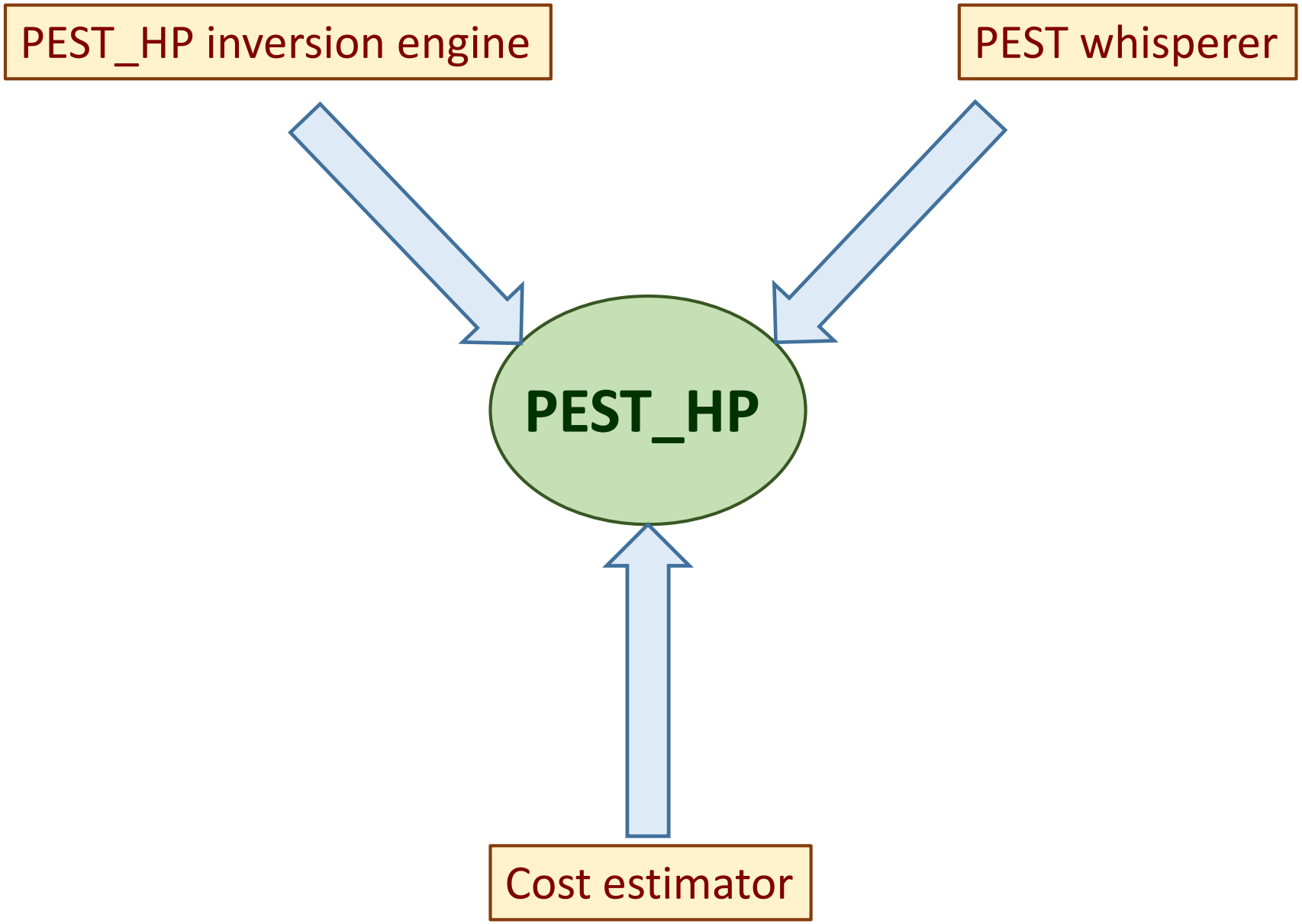
PEST cloud

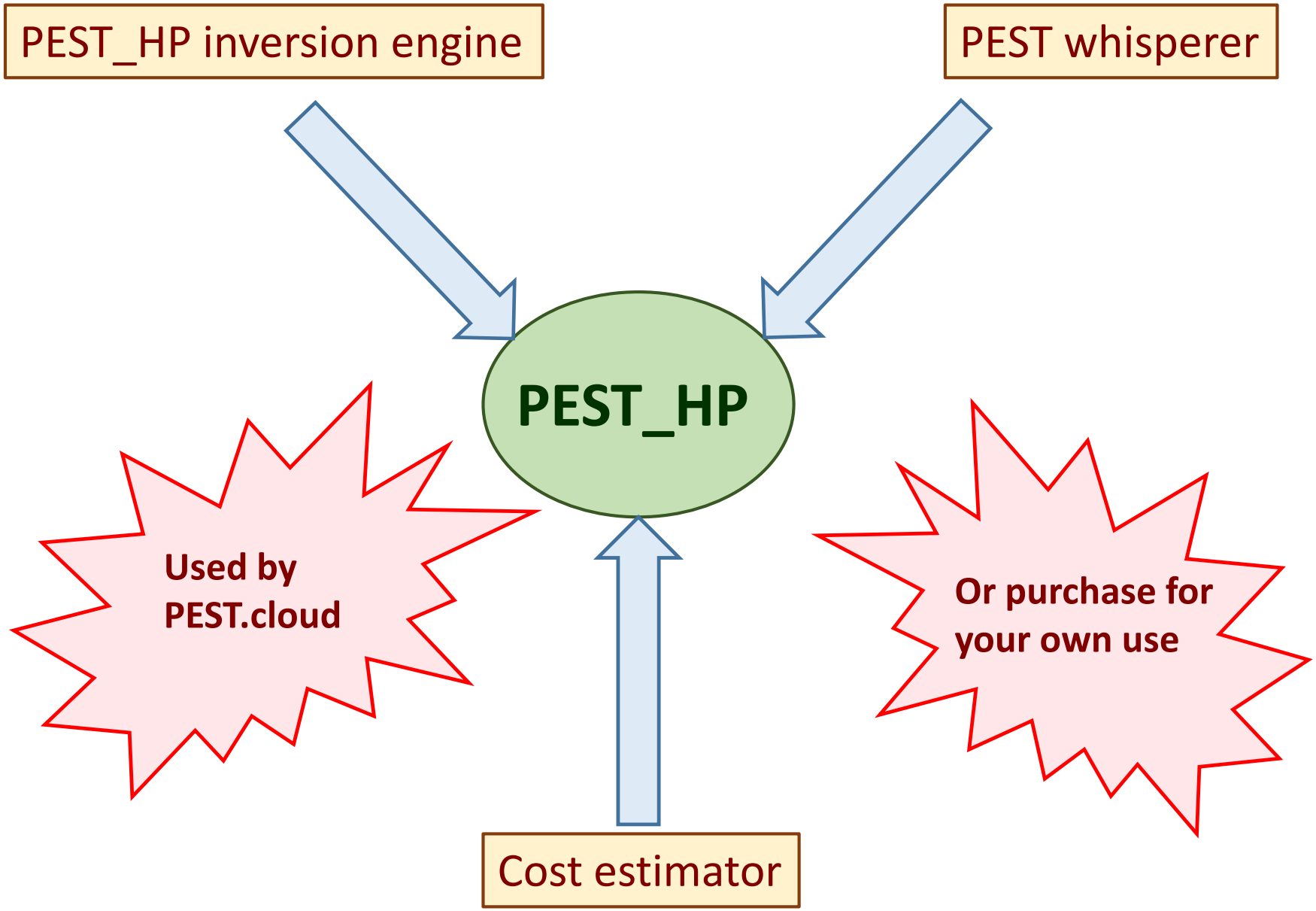


Upon PEST_HP completion, download ZIP package with final PEST_HP output files

Permanently delete PEST case from cloud at any time
(be sure to download 'Results' first!)

pest.cloud


PEST_HP inversion engine
PEST whisperer
PEST_HP
Cost estimator


PEST_HP inversion engine
PEST whisperer
PEST_HP
Used by PEST.cloud
Or purchase for your own use
Cost estimator

Improvements over BEOPEST

PEST_HP
for model calibration

- Inversion algorithm tuned for highly parallelised environments
  - Cloud
  - Office networks
  - High performance clusters
- Faster inversion
- Better accommodation of problematic model performance
- Improved run management
- Functionality added for complex models with long run times
- Calibration-independent parallelised model runs
- Comprehensive statistics
- Works with standard PEST support software
  - Uncertainty analysis
  - PLPROC
  - MFUSG support
  - etc

PEST whisperer (PWHISP_HP)

- Reads files used and written by PEST_HP
  - PEST control file
  - Run record file
  - Residuals file
  - Sensitivity file
  - Parameter value file
  - Jacobian matrix file
- Advises on performance of PEST_HP
- Advises on how performance can be improved

Cost estimator (PCOST_HP)

- Reads a PEST control file
- Estimates cost of PEST_HP run based on
  - Cost per CPU
  - PEST's mode of operation (estimation/regularisation/pareto)
  - Number of adjustable parameters
  - Finite difference derivatives settings
  - Request (or not) for Broyden Jacobian update
  - User-specified termination criterion