

# Configuring application to run automatically - "Autorun"

*Autorun is a mechanism that will automatically cause an application to be rerun whenever its input changes. This option is available both for applications and workflows in the [EPISODES Platform](#).*

## Contents of this guide

With this guide you will learn how to enable autorun for your applications and how it can be used. Please consult the [Applications](#) page for more information about creating and running applications.

## How to enable autorun

Autorun is an option that can be set for applications and workflows. When enabled the portal will monitor that application for changes and it will automatically run the application when it detects that its outputs might be outdated. Specific cases that can trigger the autorun are listed in the section below. To enable autorun you have to click the *enable autorun* checkbox that is beside various control buttons in the application panel.

The screenshot shows the 'Completeness Magnitude estimation' application panel. At the top, there's a title bar with a file icon and the title. Below it, a description bar shows the file name 'CompletenessMagnitudeEstimation' and a description 'To evaluate the magnitude of completeness  $M_c$ , defined as the lowest mag...'. An 'EXPAND' link is present. The main section is titled 'INPUTS'. It contains several input fields: 'Catalog' with a file icon and the value 'bobrek/BOBREK\_catalog.mat', 'Chosen magnitude column' with a dropdown menu showing 'ML', 'Number of synthetic datasets' with a text input field containing '500', and 'Time unit' with a dropdown menu showing 'Day'. At the bottom of the input section, there are four buttons: 'CLEAR', 'SAVE', 'RUN', and 'Enable autorun'. The 'Enable autorun' checkbox is highlighted with an orange border. Below the buttons, the status is shown as 'Status: New'.

Figure 1. An application panel with Enable Autorun checkbox marked

Selecting this checkbox will also have some additional effects:

- It will cause the *Run* button to be disabled. To run application manually you have to disable the autorun first.
- It will attempt to save the current form data, similar to what happens when the *Save* button is clicked. If the form passes validation and is successfully saved, and all the needed input files are present, it might result in the application to be run right away.

## What triggers autorun

The portal will attempt to autorun an application when it detects that some of the application's outputs might be outdated due to changes in application's inputs. This includes situations when:

- Application form is changed and 'Save' button is clicked
- Input is changed to some other input using the 'Change' button on the application panel
- Input file is renamed, moved or deleted
- Directory where the input file is stored is moved or renamed
- Input file is overwritten with new content (e.g. when a file with the same name is moved to the directory with the input file)
- When using input from 'automatic choice' and the position of the input changes (i.e. the file is dragged to some other place within the same directory)
- When using input from 'application input' and that other application input changes (in any way that is in this list)

The application will not be run if it is missing some of its required inputs, or if its already running or waiting to be run.

## Autorun chaining

It can be useful to use autorun in a chain of applications where one application's output is used as input to another. When you set autorun to all of them and the first application is run, it will cause all three application to be run one after another automatically.

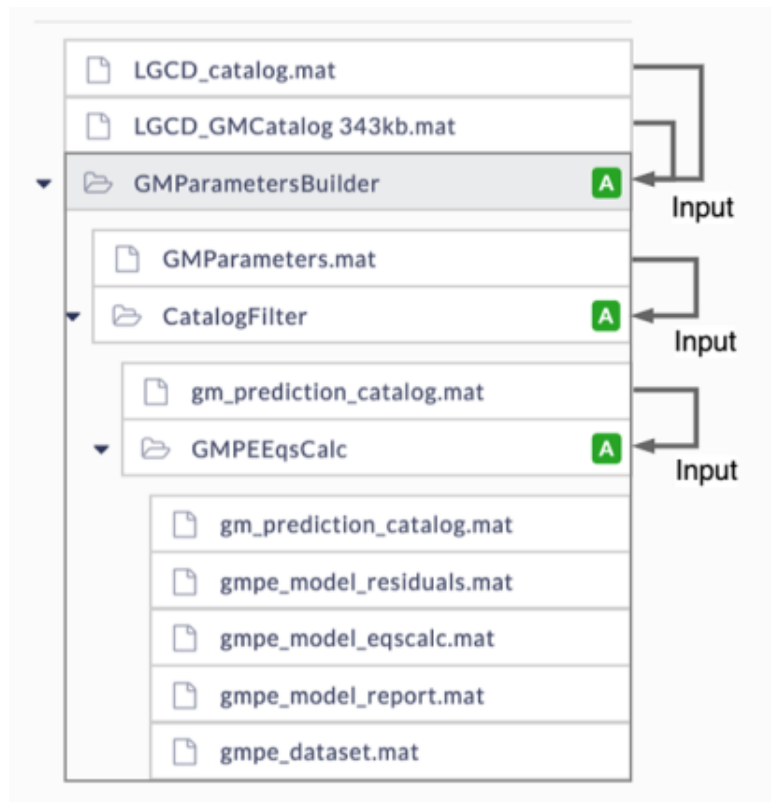


Figure 2. Example of applications that are chained together

This can also be achieved by [transforming applications into workflow](#) and enabling autorun to the whole workflow.

## Related publications

Makuch, M., M. Malawski, J. Kocot, and T. Szeplieniec (2022) *Model and system for scientific workflows represented in file system directory tree*. In: Future Generation Computer Systems, <https://doi.org/10.1016/j.future.2022.03.023>

Makuch, M., M. Malawski, J. Kocot, and T. Szeplieniec (2020) *Applying workflows to scientific projects represented in file system directory tree*. In: 2020 IEEE/ACM Workflows in Support of Large-Scale Science (WORKS), pp. 25-32, <https://doi.org/10.1109/WORKS51914.2020.00009>

## Related Documents

- [Managing properties of workspace files](#)
- [Advanced Workspace Functionality](#)
- [Connecting application inputs to other applications](#)
- [Creating links in workspace](#)
- [Handling large files in workspace](#)
- [My Workspace](#)