Autodesk® Moldflow® Insight 2012

AMI Launching an Analysis

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An alternative method of launching an analysis is to use the command line.

The usual methods of launching an analysis are either to select **Start Analysis!** in the **Study Tasks** pane, or to submit analysis jobs using the **Job Manager** dialog. An analysis also can be launched from the command line by using a utility called **runstudy**, which is installed with the Autodesk Moldflow Insight software.

NOTE: For full details of the parameters accepted by the **runstudy** command, including a parameter to specify the directory where the temporary files of the analysis are created, enter **runstudy** without any parameters at the command prompt.

Launching an analysis

An alternative method of launching an analysis is to use the command line.

Launching an analysis from the command line on PC

The usual method of launching an analysis is to either select **Analyze Now!** in the **Study Tasks** pane, or to submit analysis jobs in the Job Manager dialog. A alternative method is to launch an analysis from the command line using a utility called **runstudy** that is installed with the Autodesk Moldflow Insight software.

NOTE: For full details of the command parameters accepted by the **runstudy** command, including a parameter to specify the directory where the temporary files of the analysis are created, enter **runstudy** without any parameters.

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1. In Synergy, set up and save the analysis you want to run.
2. Right-click on the study name in the **Project View** pane, and then select **Properties** to find the name of the study file.
3. Select **Start > All Programs > Autodesk Moldflow Insight xxxx > Autodesk Moldflow Insight xxxx Command Shell**.

   The command shell will open at the project directory specified in the software installation process.
4. Use the DOS **cd** command to navigate to the folder where the study you want to launch is located.
5. Enter **runstudy -project** ***project_name study_name***

where *project_name* is the name of the project file (.mpi), and *study_name* is the name of the study (.sdy) file.

Launching an analysis from a shell on UNIX

1. In Synergy on a PC, set up and save the analysis you want to run.
2. Right-click on the study name in the Project panel and select **Properties** to find the name of the study file.
3. If desired, copy the project file (.mpi) and study file (.sdy) to a directory on a local disk of the UNIX machine on which you want to run the analysis.
4. Start a shell on the UNIX machine on which you want to run the analysis.
5. Use the UNIX **cd** command to navigate to the directory where the study you want to launch is located.
6. Enter **runstudy -project *project_name study_name***

   where *project_name* is the name of the project file (.mpi), and *study_name* is the name of the study (.sdy) file.

NOTE: If the **runstudy** command is not recognized by the shell, then the UNIX machine may not have been set up as a client machine, and/or the user environment may not have been set up for your login account. Please refer to the Autodesk Moldflow Insight Installation Guide for more details.

Job Manager 2

The Job Manager is a service that manages all tasks relating to running analyses.

The Job Manager is a service (Windows platforms) or daemon (UNIX platforms) that manages all aspects relating to running analyses and generating meshes. When an analysis or meshing task is launched, the Job Manager on the local machine performs several functions.

1. Copies the study file to a subdirectory of a specified temporary working directory, normally on the local disk. This ensures optimum disk access for reading and writing large files, particularly when the project directory is located on a network drive, and avoids file locking issues.
2. Runs the relevant executable for the first analysis in the analysis sequence, for example, flow.exe or cool.exe, and provides the required command line parameters.
3. Monitors the progress of the analysis and waits for it to complete.
4. Registers that the analysis is complete and then colors in the related icon in the **Project View** pane.
5. Repeats steps 1 to 4 for each additional analysis in the analysis sequence.
6. Transferred the results from the temporary directory to the project directory by Synergy through the Job Manager connection.

Features of the Job Manager

The Job Manager can also perform the following tasks when required:

- Detect and reports back that an analysis has failed.
- When running a batch queue licences will be reserved as required. If a job reaches the top of the queue, and requires a licence which is currently reserved, it will wait until the license becomes unreserved.
- Launch and manage analyses on other machines on the network that have been set up as *job servers*. This makes it possible to run analyses on server-only platforms that do not provide a user-interface for launching analyses.
- Abort an analysis when requested by the user.
- Sequentially process a list of analyses assigned to a *batch queue*.

NOTE: Jobs submitted as Priority Jobs take precedence over jobs submitted to the batch queue and reduce the number of jobs that can run simultaneously in the batch queue.

- Start the batch queue at a specified future time.

- Distribute to a specified pool of job servers the analyses (experiments) that a Design-Of-Experiments, Runner Balance or Process Optimization analysis automatically launches, and reports back to the original analysis the completion status of each of the experiments.
- Change the priority of running or pending analyses.
- Delete files in the temporary working directory that are older than a specified number of days.

Interacting with the Job Manager

You can interact with the Job Manager and access its features through the **Job Manager** dialog in the **Analysis** menu.

Batch queue

The batch queue allows you to submit a sequence of analysis jobs and start (or run) them at a later time. You can also pause (or stop) the batch queue if required.

Batch queue properties are associated with a server machine. To access these properties, open the **Job Manager**, then right-click the server you want to change and select **Properties**. You can configure the following batch queue properties on the server:

Batch queue max. running jobs	Specifies the maximum number of batch queue jobs that can run at once. **NOTE:** Each batch queue job may contain more than one analysis in sequence. **NOTE:** Jobs submitted as **Priority Jobs** take precedence over jobs submitted to the batch queue and reduce the number of jobs that can run simultaneously in the batch queue. If a job reaches the top of the queue, and requires a licence which is currently reserved, the job manager will wait until the license becomes unreserved.
Start queue at	Specifies a date and time to start running the batch queue. Use this option to increase your productivity by running analyses during non-work hours. Your computer does the work while you are at home.
Date	Specifies the date to start running the batch queue.
Time	Specifies the time to start running the batch queue.

Restart files

Restart files provide a snapshot of the simulation during an analysis. Restart files are used to safeguard against system failure, to pause long analyses, and to extend analyses.

When a system failure occurs and recovery data is available, the analysis will continue from the point at which the last set of restart files were written. To save disk space, the solver will only retain the most recent set of restart files, it will overwrite older restart files when writing new recovery data.

You can pause or break up long analyses by specifying restart steps. When you next launch the analysis, it will continue from the last valid set of restart files.

Restart files are also used to extend an analysis sequence. For example, when you extend a Fill analysis with saved restart files to a Fill+Pack analysis, only the Pack analysis needs to be run, providing you have not changed settings that invalidate the Fill analysis results.

NOTE: You need to set restart steps before you launch the analysis.

NOTE: Restart files are not produced by Coupled 3D Flow solver. Each 3D analysis sequence that uses the Coupled 3D Flow solver will run from the beginning and ignore any previously generated results.

Studies

Indicates the hierarchical structure of the Project tree.

The **Studies** pane is visibly broken down into the name of each study, and indicates the analysis type with an icon next to the analyses attached.

Job preview

Indicates the analysis attributes attached to each study at the study level.

Submit >>

Submit a job to be run on the selected job server.

Moves a job from the **Studies** pane to the **Job server** pane to be run on the highlighted (selected) server.

Click on the server in the **Job server** pane to select it, select the required study in the **Studies** pane, and then click **Submit** > > to run the job.

NOTE: Any jobs that a study is ready to run iare indicated in the **Job Preview** pane after selecting the study.

Job servers

Lists all the machines on which you can run analyses.

The current machine on which Synergy is running is shown as *Local Host*.

Under each machine, you will see the following symbols in the **Job servers** pane:

	**Job Server**—the current machine (Local Host) and other machines on the network that have the same release of Autodesk Moldflow Insight installed and on which analyses can be run. To edit the properties of a job server, select the server, right-click and select Properties. To add a new job server, click  .
	**Priority Jobs**—displays analysis jobs that were submitted for immediate execution. When you launch a job by clicking **Analyze Now** in the **Study Tasks** pane, it will appear here under Local Host. A priority job can also be submitted using this dialog.
	**Batch Queue**—displays analysis jobs that will be executed in sequence after clicking  (Run/Pause Batch Queue) at the bottom of the dialog. To set the batch queue to automatically run at a specified time, select the queue, right-click and select Properties, then select the Start queue at option and specify the required date and time. **NOTE:** Jobs submitted as Priority Jobs take precedence over jobs submitted to the batch queue and reduce the number of jobs that can run simultaneously in the batch queue.
	**Distribution Queue**—displays analyses (experiments) that have been automatically launched by a Design-Of-Experiments, Runner Balance or Process Optimization analysis running on the local machine. You cannot submit analyses directly to this queue.

Add Job Server

Add another job server.

Click the  **Add Job Server** button to add a new job server to the list of existing job servers.

Remove Job Server

Remove a job server from the list of job servers available in the **Job servers** pane.

Run/pause batch queue

Run or pause jobs in the batch queue.

Pausing a batch queue will stop the running of the scheduled jobs after the running job is complete.

Abort Job

Cancels the selected job.

Abort All Jobs

Cancels all jobs.

Properties

Configure the settings of an existing server machine.

Set As Default

Set the current server to be the default server.

Server address

The network address of the machine which will be running the Autodesk Moldflow analyses.

You can specify the address using one of the following three methods:

- **IP address**—for example, 190.11.222.333
- **Host name**—for example, john-smith
- **Fully qualified host name**—for example, john-smith.mycompany.com

Displayed name

The name of the server to be displayed in the **Job Manager** dialog.

Batch queue max. running jobs

Specifies the maximum number of batch queue jobs that can run at once.

NOTE: Each batch queue job may contain more than one analyses in sequence.

Start queue at

Specifies a time to start the batch queue running.

Select this check box, and then select a date and time to start the batch queue.

Date

Specifies the date to start running the batch queue.

Click the drop-down arrow, and then select the date to run the batch queue.

Time

Specifies the time to start running the batch queue.

Select either the minutes or hours value, and then click the up and down arrows to change the batch queue start time.

Default job priority level

The processor priority that any Autodesk Moldflow analysis will take on the server.

NOTE: We do not recommend that priority **Highest** be used on a single CPU machine as this can tie up the system's resources to such an extent that manual intervention in the running of the machine becomes impossible.

Distribution queue max. running jobs

Specifies the maximum number of distributed jobs that can run simultaneously on each job server in the job distribution pool.

Job distribution pool

Lists the available job servers, and indicates which of these job servers will be used by the Distribution Queue on the local machine. The analyses (experiments) automatically launched by a Design-Of-Experiments, Runner Balance or Process Optimization analysis run on job servers you have assigned to the job distribution queue. Jobs submitted to the pool are immediately broadcast to all servers in the pool. Each of the servers then broadcasts its own available CPU count. The job is submitted to the server with the most CPUs available. If there are no available CPUs across the whole pool, the job remains in the queue.

Temporary directory

Specify the temporary directory used by the job manager.

When you launch an analysis, the Job Manager first copies the study file to the temporary directory, then runs the analysis in that directory, and finally, when the analysis is complete, copies the study file and result files back to the original project directory.

NOTE: If working remotely, ensure that this directory exists or is correctly set.

Delete temporary files older than

Specify how many days to keep temporary files before deletion.

Job Manager temporary files exist in the temporary directory specified in the box above.

Enter the amount of days that you want the temporary files written by the Job Manager to be retained.