

ANSYS Workbench QA Notice

ERROR NO:

QAWB2014-01

Keywords:

MESHING

SETUP COMPONENT

CFX

FLUID FLOW

Description of Error:

The Setup component of a CFX or Fluid Flow (CFX) system does not detect certain failures to refresh a mesh. In a number of situations (listed below), the application will fail to load the updated mesh, and roll back to the previously loaded mesh. However, the component state in Workbench will show "up to date", as if the mesh had been loaded correctly. When this occurs, the system is incorrectly working with an out of date mesh as if it were current. In all cases where this mesh refresh failure occurs, an error is logged in the "Messages" view.

There are two major scenarios where this mesh reload failure can occur.

1. Mesh Transformations or modifications within CFX-Pre

Many different options exist in CFX-Pre to modify a loaded mesh. On refresh, CFX-Pre attempts to play back those transformations on the new mesh. These transformations rely on "names" within the mesh (such as composites, primitives, or assemblies). If a required name isn't present, CFX-Pre will issue an error and roll back to the previously loaded mesh. In these situations, the state of the CFX system's Setup component is incorrectly set to "Up to date".

This scenario can be triggered when any of the following operations cannot be successfully performed on the refreshed mesh:

- Deleting, renaming or merging of an **Assembly**
- Creating or deleting a **Composite** region

- Gluing or ungluing two

Primitive

2D regions

- Renaming a 2D or 3D

Primitive

region

- Transforming a part of the mesh such as an

Assembly

or a 3D

Primitive

region

2. Incompatibility of mesh features with CFX-Pre, or invalid meshes If a loaded mesh is replaced with a mesh that cannot be used by CFX-Pre, it will issue an error message and roll back to the previously loaded mesh. In these situations as well, the state of the CFX system's Setup component is incorrectly set to "Up to date".

Some examples of when this situation may occur:

- The model doesn't contain any mesh at all
- Topology of the mesh is inconsistent with the topology of the CAD model. i.e. mesh may need regenerating.
- A body is unsuppressed and doesn't enclose a volume - for example a surface body
- A body doesn't have any mesh associated with it. i.e. mesh may need regenerating
- Element types or mesh features that are not supported by CFX (for example, polygons or hanging nodes)

Typical GUI Path(s):

This error can be triggered in any workflow that results in refreshing mesh information inside CFX-Pre when using Workbench, if that mesh is not usable by CFX-Pre. Typical ways of doing this are:

- Selecting "Refresh" or "Update" from the right-click context menu of the Setup component in a CFX or Fluid Flow (CFX) system.
- Selecting "Edit" from the context menu of the Setup component, when a mesh change is pending.
- Selecting "Update" on a CFX or Fluid Flow (CFX) system, or "Update Project" on the Workbench toolbar.
- Selecting "Update all Design Points" from the Workbench toolbar or a design point update action from the Parameter Set tab.

Other Comments:

Beginning with Release 16.0, failure to reload a mesh will be treated as a failure to complete a Refresh or Update operation by Workbench, and result in an error message being displayed to the user when running interactively. The CFX system will no longer be able to proceed with an update using incorrect mesh data.

First Incorrect Version:

Release 12.0

Corrected In:

Release 16.0

Suggested User Action For Running on Uncorrected Version:

After performing an update or refresh of mesh information into the Setup component of a CFX or Fluid Flow (CFX) system (such as one of the operations listed in Typical GUI Paths), the user should check the Messages view for indications of mesh load failure. Details of the error may differ from case to case.

Examples:

Application Error in CFX-Pre: ERROR There was a problem importing the mesh from the requested file.

Application Error in CFX-Pre: ERROR "X" is not a primitive region.

Any reference to a problem loading a mesh into CFX-Pre should be investigated. The user should inspect the mesh used within CFX-Pre to confirm that it matches their expectation. Design point updates that show this class of error should be exported or retained to allow for this inspection.

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