How to improve mesh using Auto Node Move?

Problem/Description:

How to improve mesh using Auto Node Move?

Solution:

From Fluent 16 onwards, the main criteria for checking mesh in Fluent is orthogonal quality. If you check Quality in Fluent then you can see it gives message about orthogonal quality.

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Mesh Quality:

Minimum Orthogonal Quality =  2.13022e-01 cell 360 on zone 88 (ID: 361 on partition: 0) at location ( 1.08477e+01 -3.92097e-01  1.48801e-01)
(To improve Orthogonal quality , use "Inverse Orthogonal Quality" in Fluent Meshing,
 where Inverse Orthogonal Quality = 1 - Orthogonal Quality)

Maximum Aspect Ratio =  1.61156e+01 cell 2047 on zone 88 (ID: 2048 on partition: 0) at location (-2.14479e+01 -6.25682e-01  8.40854e+00)
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Figure 1: Fluent Message

So please use Quality Measure as Inverse Orthogonal Quality in Fluent Meshing and improve the mesh. Please go to Mesh → Tools → Auto Node Move as shown in Figure 2.

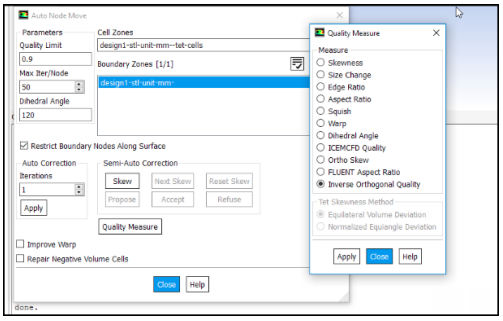

Figure 2: ANM

Then do following iterations -

1. Use 0.9, 50, 120, select all boundary zones, click ON Restrict Boundary Nodes Along Surfaces. Please use 5 iterations and click apply.
2. Use 0.95, 50, 110, select all boundary zones, click ON Restrict Boundary Nodes Along Surfaces. Please use 5 iterations and click apply.
3. Use 0.97, 50, 100, select all boundary zones, click ON Restrict Boundary Nodes Along Surfaces. Please use 5 iterations and click apply.

If you get quality below 0.97 or 0.95, it should be good enough for Fluent.
If you still want to further improve it, then do following operations. This may move nodes a little out of surface plane.

1. Use 0.98, 50, 80, select all boundary zones, click ON Restrict Boundary Nodes Along Surfaces. Please use 5 iterations and click apply.
2. Use 0.98, 50, 80, select all boundary zones, click OFF Restrict Boundary Nodes Along Surfaces. Please use 2 iterations and click apply.
3. Use 0.98, 50, 40, select all boundary zones, click OFF Restrict Boundary Nodes Along Surfaces. Please use 2 iterations and click apply.