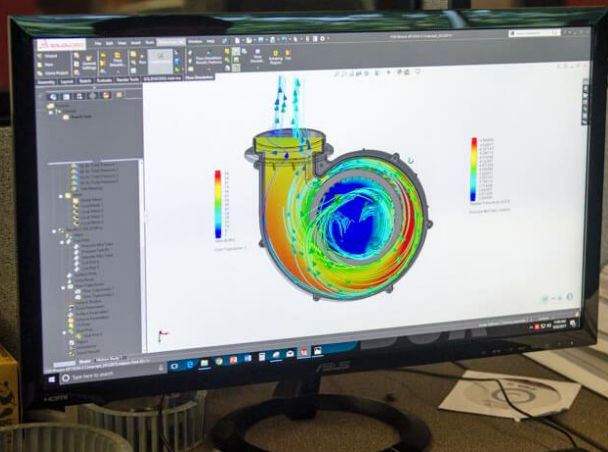


Megagenix Overview

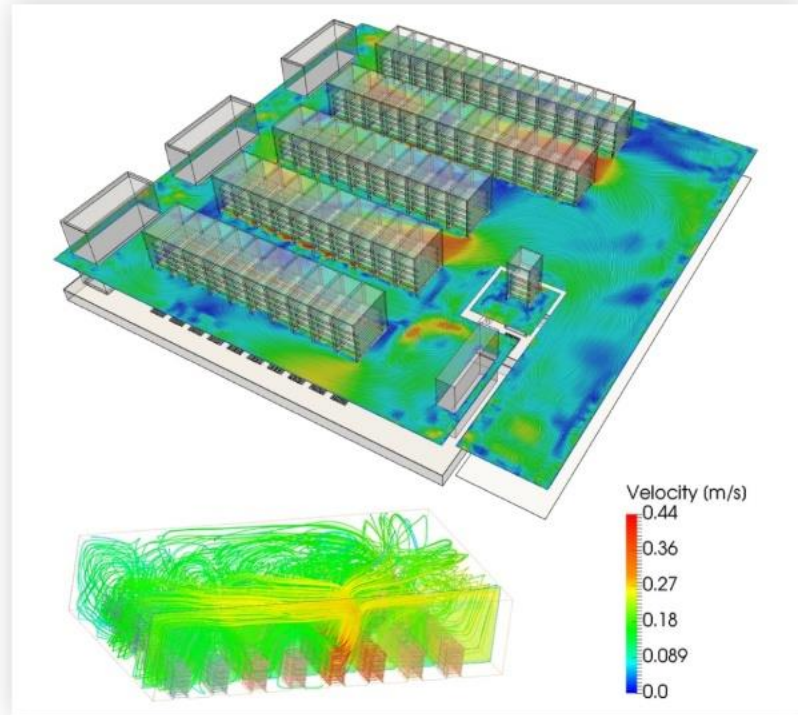
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Experience**



**Comprehensive
Modelling**



**Failure Analysis
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**Full Database
Report**



Case Study & Sample Report

CFD Simulation Report / Analysis / Proposal
For Data Center In Singapore

Question:

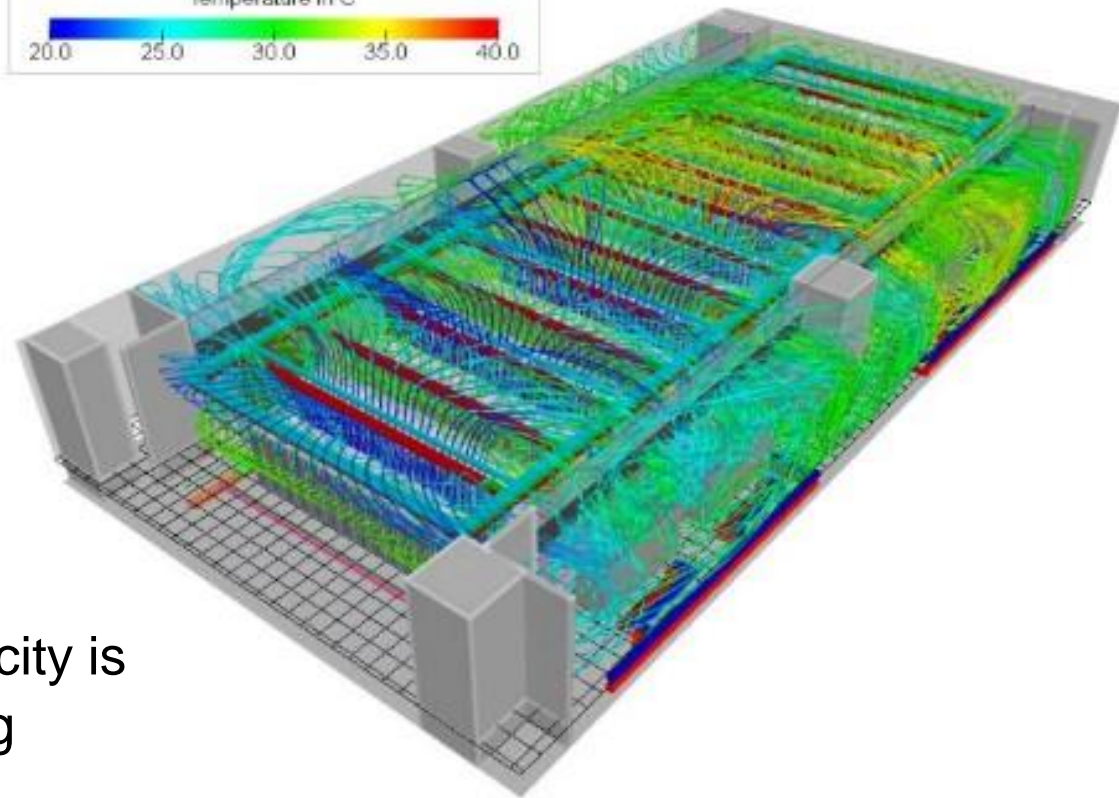
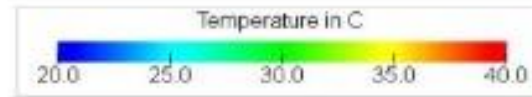
How can we achieve optimal air distribution in a Data Center where IT load is evenly distributed across racks?

Chapter 2 – Scenario 1 Above Floor Analysis

Basic Information

Above-Floor Information

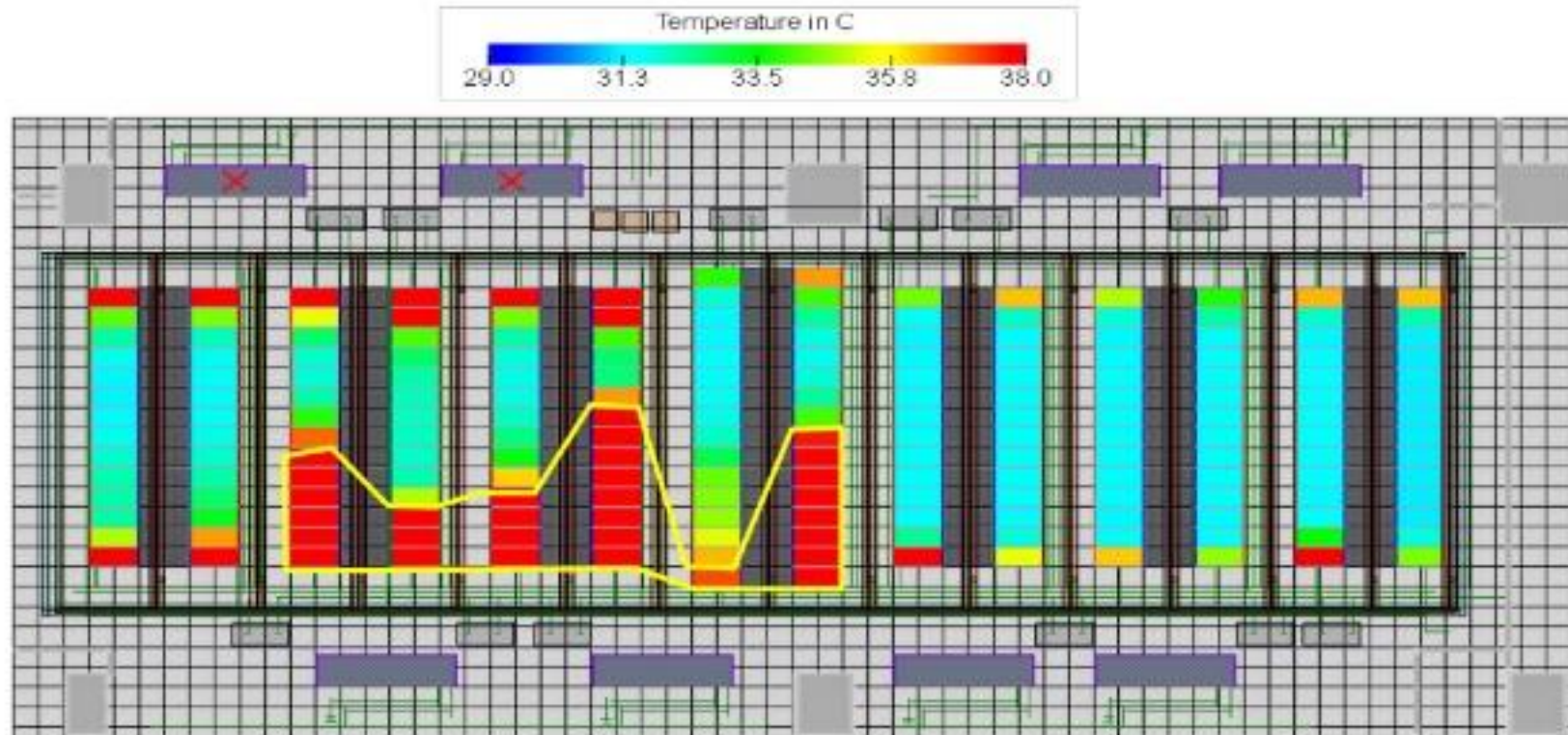
Item	Value
Total Airflow Demand	267934 CMH
Total Airflow Supplied	330600 CMH
Total IT Load	1000 kW
Cooling Provided by CRACs	1000 kW



- Based on CFD Simulation, cooling capacity is affected due to unbalanced tiles, causing uneven air distribution in all scenarios.

Chapter 4 – Scenario 3 Above Floor Analysis

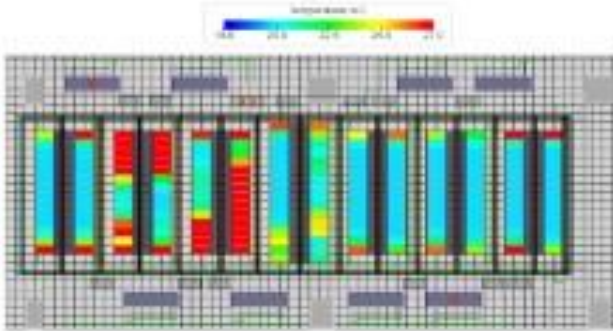
Exit Temperature



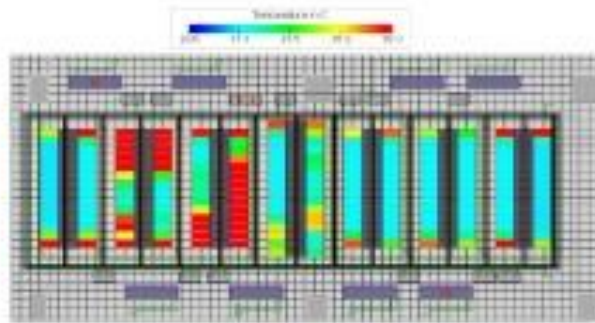
- Most of the data hall servers are able to get an exit temperature between 31 °C - 38 °C.
- Some of the servers which are located at the end of servers row are getting inlet temperature more than 38 °C.
- Servers which are located at highlighted area are getting more than 38 °C exit temperature.

Chapter 8

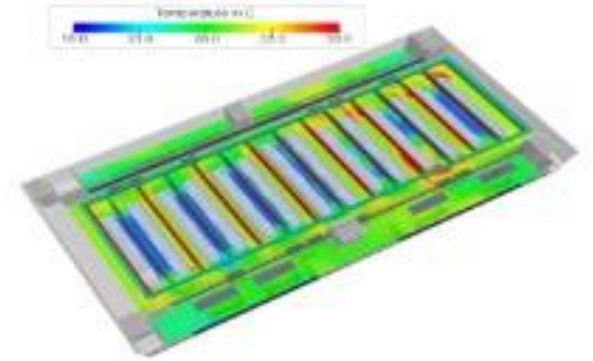
Scenario 6 Before VS After



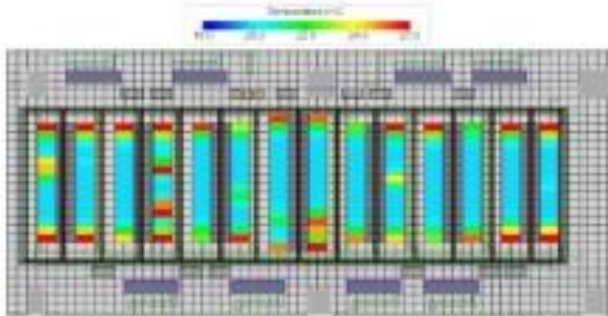
Inlet Temperature Before



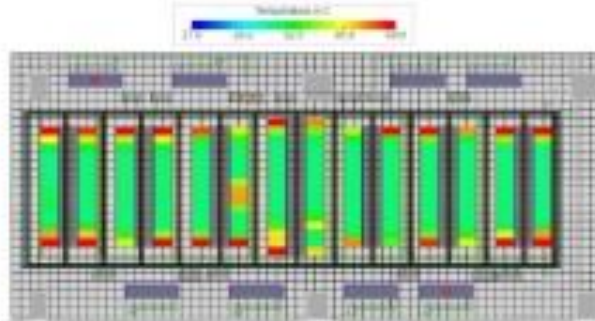
Exit Temperature Before



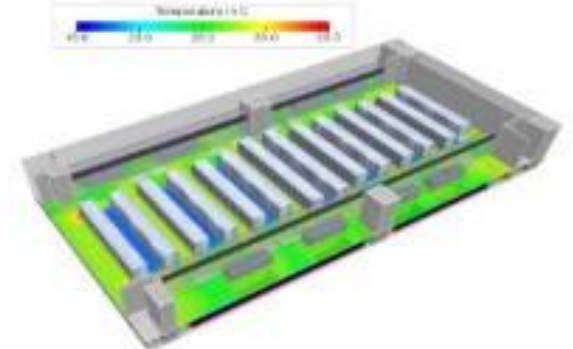
Temperature Distribution Before



Inlet Temperature After



Exit Temperature After



Temperature Distribution After

- Optimum outcome has been achieved by changing tiles opening percentage.
- Potential hot spots are removed.



Case Study Conclusion

CFD Simulation Report / Analysis / Proposal For Data Center In Singapore

- Servers' inlet temperature exceeding 27 °C and exit temperature exceeding 38 °C is found in all scenarios.
- Potential hot spots can be removed to reduce temperatures. Optimal air distribution can be further achieved by adjusting tiles opening.

Thank you

**Your Expert CFD Consultants
& Professional Engineers**

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