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Niagara Case Studies

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Identifying Hot Zones

Terminal Unit Analytics

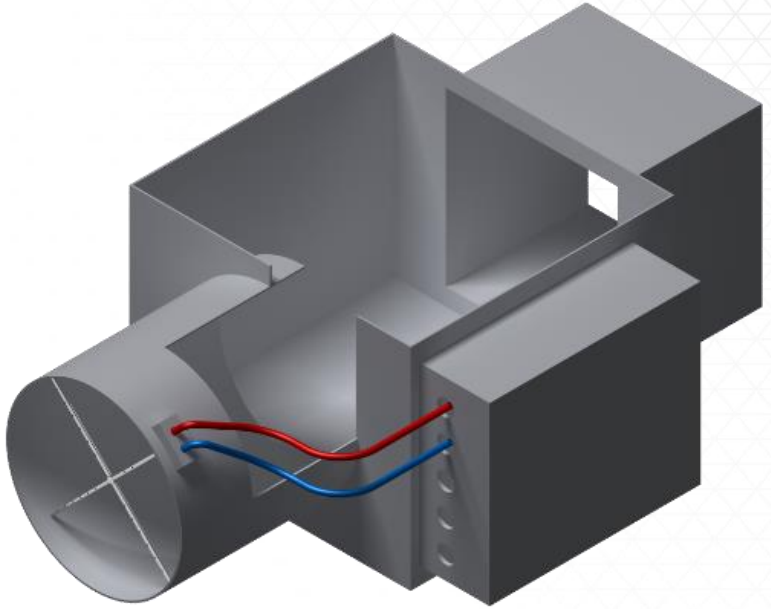
Identifying Hot Zones – Approach

Traditional Approach

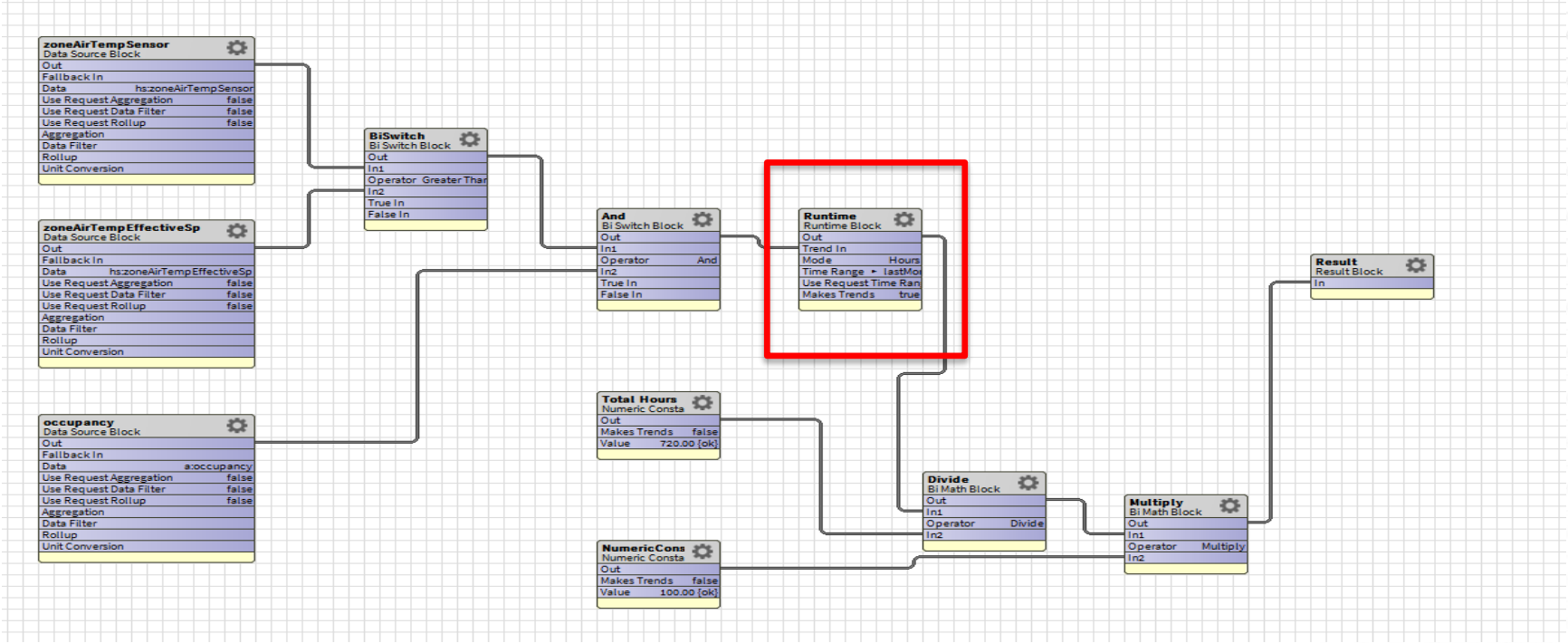
Raise an alarm if zone temperature is above setpoint

Analytics-based Approach

Monitor zone performance over a period of time

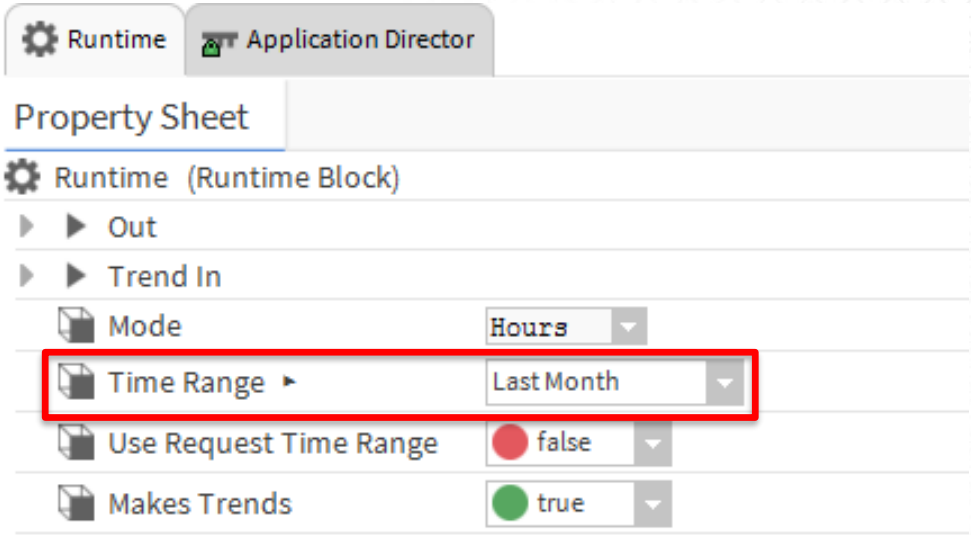


Identifying Hot Zones – Logic



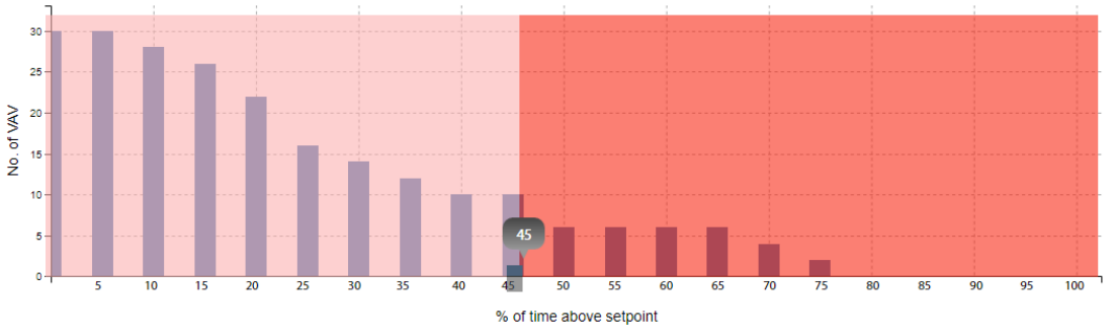
Identifying Hot Zones – Logic

Adjust the Time Range of the Runtime Block to a suitable period



Identifying Hot Zones – Representation

Sr. No.	Equipment	Hot %	Area Served
1	VAV_1_4	45	Cafe_1004
2	VAV_1_8	65	Medical Room_1008
3	VAV_2_2	70	Office Room_2002
4	VAV_2_3	75	Open Area_2003
5	VAV_2_5	45	Team Work Room_2005
6	VAV_2_9	45	Corridor_C2002
7	VAV_3_3	65	Open Area_3003



Move the slider to identify the most problematic zones

Saving Fan Energy

Complex Sequences

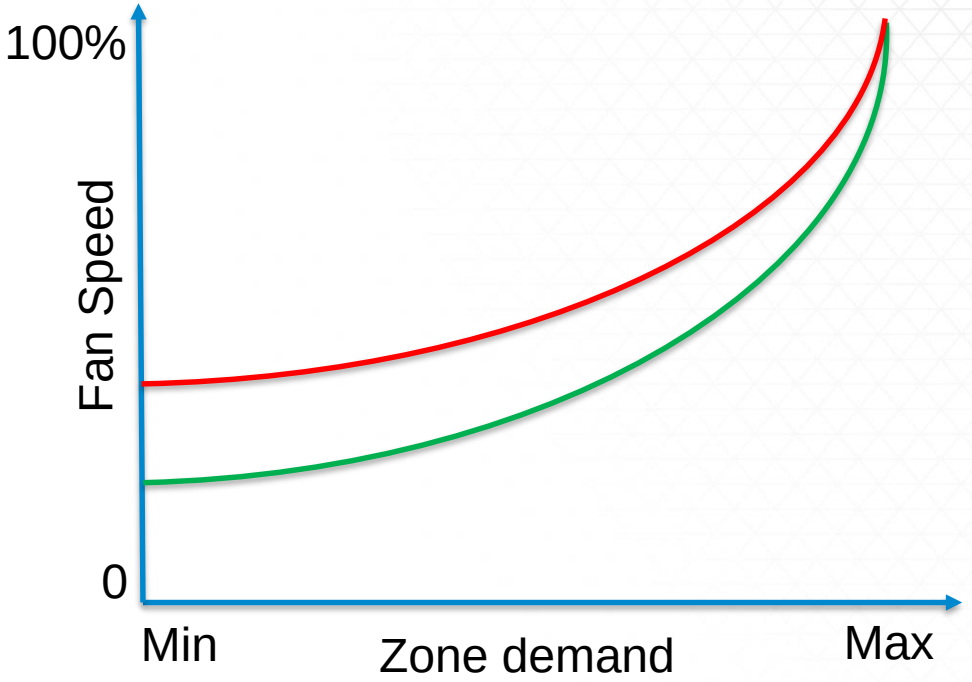
Saving Fan Energy – Approach

Traditional Approach

Maintain a constant duct static

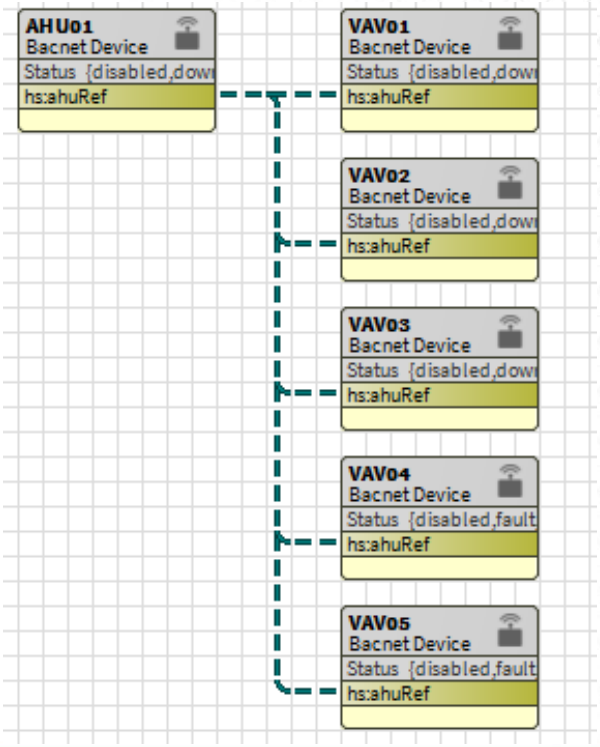
Analytics-based Approach

Adjust the duct static using a trim and respond algorithm

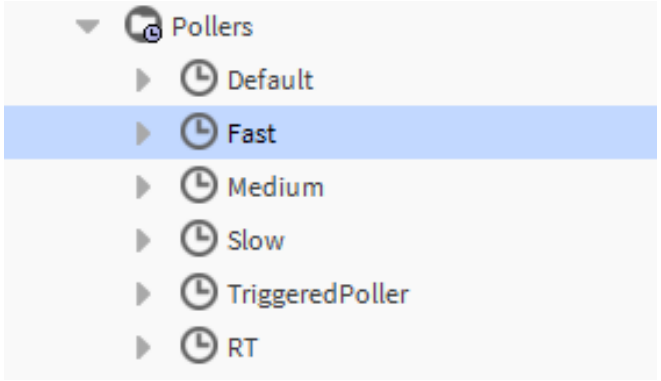


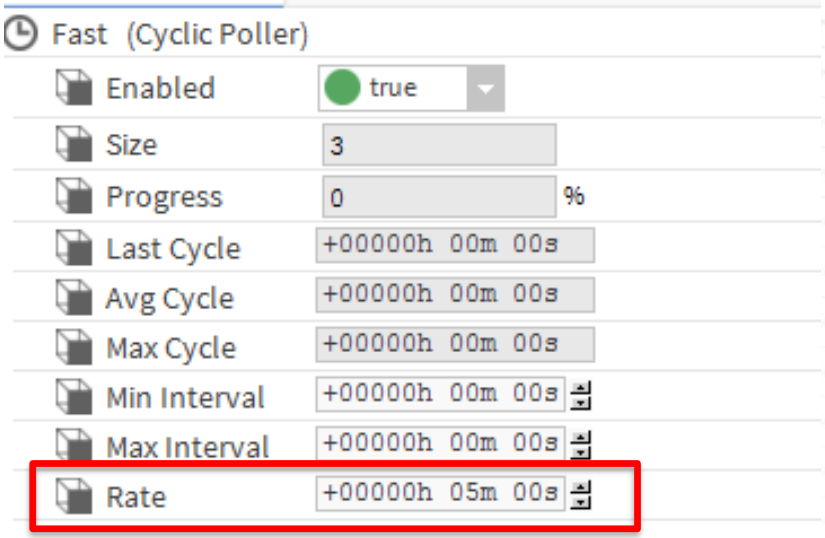
Saving Fan Energy – Parent Child

Associate each VAV with the AHU that serves it



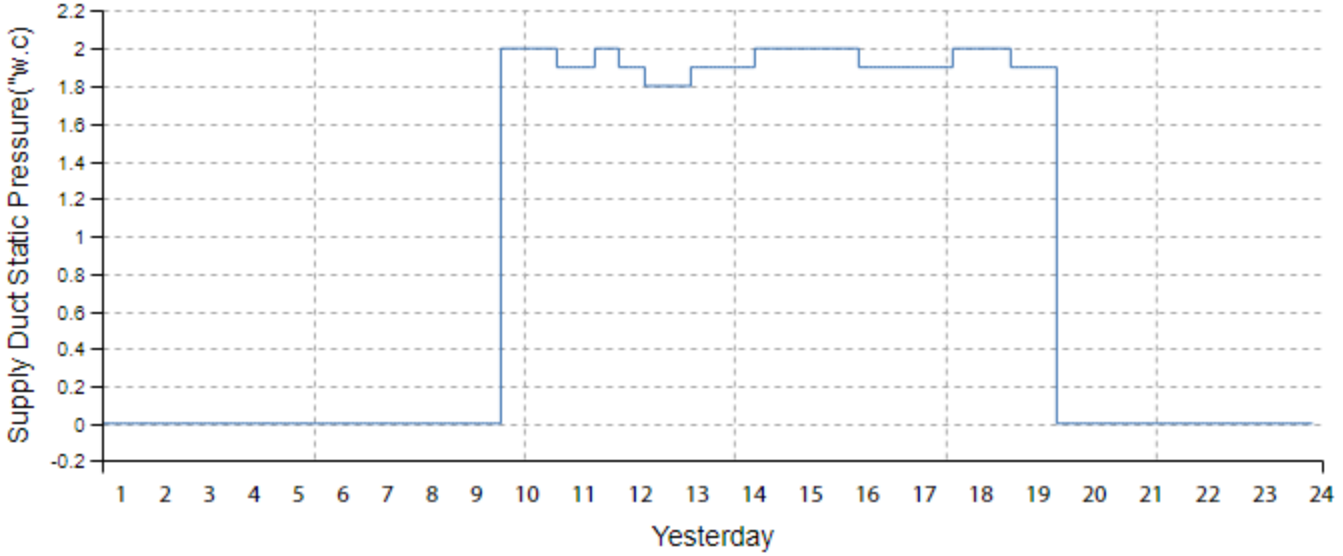
Saving Fan Energy – Timed Execution





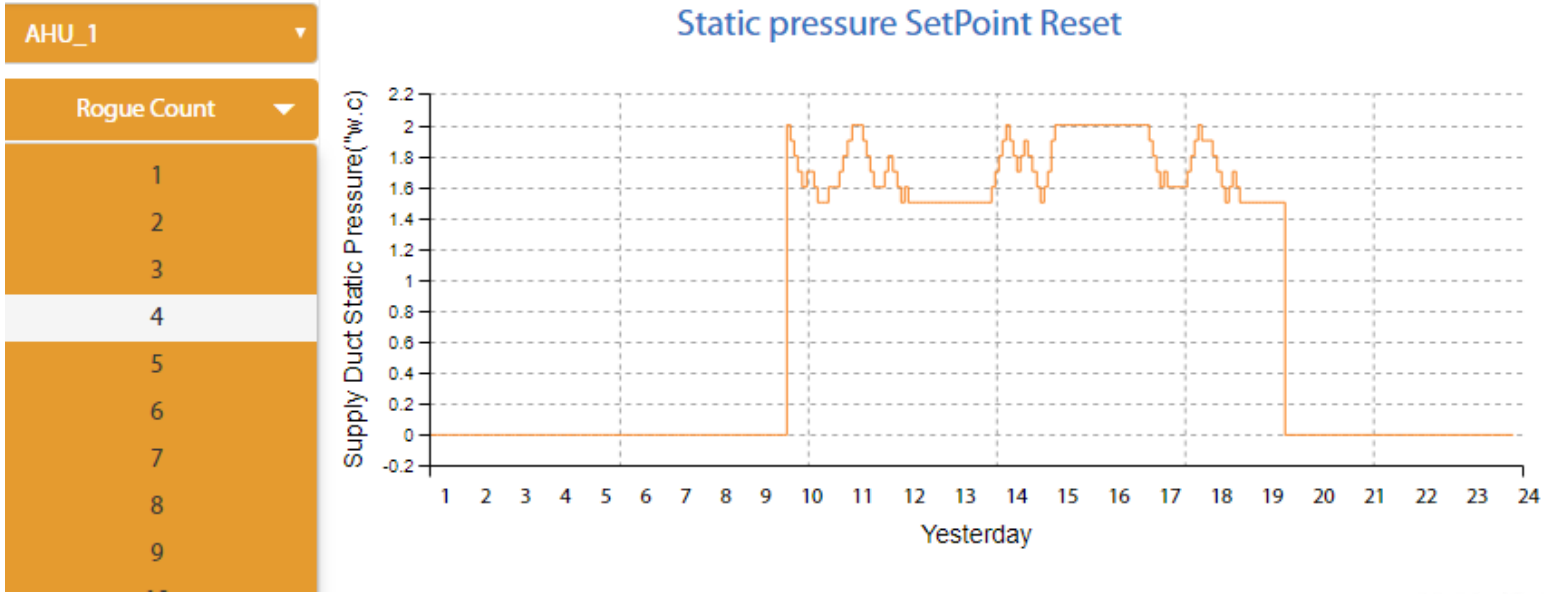
Adjust the polling rate to execute the algorithm every 5 minutes

Saving Fan Energy – Rogue Zones



Rogue zones are making the sequence ineffective

Saving Fan Energy – Representation



Adjust the number of rogues zones to make the reset effective

Summary

Use Analytics to:

- Track the performance of systems over time
- Establish relationships between systems
- Implement complex sequences
- Demonstrate results visually