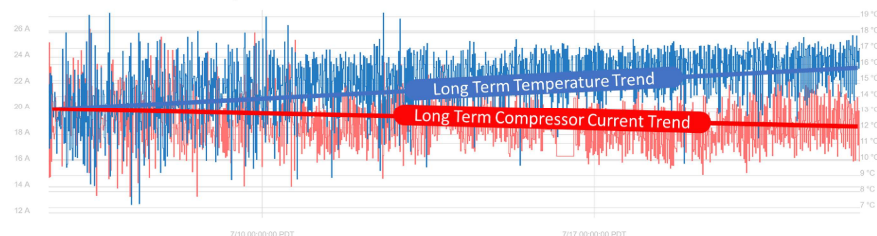


# IoT Helps Keep Data Cool

## THE CHALLENGE

The modern data center is at the core of many of today's most successful businesses. Customer value creation has, in many cases, become a data business with rows and rows of servers running 24X7. To keep servers cool and running well, data centers rely on their HVAC systems. When the HVAC system breaks down, data center operators have little choice but to shut down servers. Such server brown-outs put more pressure on remaining systems and may even put the business at risk. A refrigerant leak for example, can quickly lead to thousands of dollars in lost business. In the data center, HVAC is *that* mission critical.



## THE SOLUTION

As the servers in the data center is monitored for 24X7 uptime and performance, the performance of the supporting air condition systems must also be monitored 24X7. Leveraging cloud computing and modern sensor technology, the OptumSoft universal SMART HVAC IoT solution accomplishes this elegantly and efficiently. As soon as any misbehavior is detected, data center operators are alerted and corrective action may be taken. Immediately.

One of the most difficult HVAC problems to detect is a slow refrigerant leak. Normally, the refrigerant is hermetically sealed in a closed system. Over time however, due to vibration and other outside forces, small fractures can occur in copper tubing and condensers or evaporators. The refrigerant is under constant pressure – so a crack causes the refrigerant to seep slowly out of the system. As the gas escapes, the system increasingly loses its ability to maintain a low enough temperature and the data center starts to heat up. Fortunately, the OptumSoft SMART HVAC IoT solution catches the correlation between a long term compressor current decline and a long term temperature increase. A feat that is impossible without continuous and automatic gathering of historical HVAC system data.

## THE RESULTS

As soon as we detected the anomaly, repair technicians were dispatched and went to work. After close system inspection, a hairline fracture was found in the evaporator. Since this HVAC systems was less that a year old, the evaporator was replaced under warranty and the system re-charged. Normal data center operation was restored and potential negative business impact avoided.

**S M A R T   H V A C   S U C C E S S   S T O R Y**