

How to Amp Up Data Center and Server Room Management

Cooling issues and water leaks are two of the top causes of downtime for data centers and server rooms. It's no secret that these expensive facilities—filled with server hardware and networking equipment—must run within the critical temperature and humidity ranges. If these essential measurements rise or drop into dangerous territory—the worst-case scenario is for capital and operating expenses to skyrocket.

That's why data centers are typically heavily equipped with redundant safety measures—like backup generators and climate controls, smoke detectors, and several high-end surge protectors. The smaller siblings of data centers sometimes aren't this lucky—office building server rooms can lack some of these technical luxuries.

Monitoring systems to help prevent water damage and provide backup temperature controls shouldn't be overlooked for data centers and on-premises server rooms. Downtime expenses from overheated or flooded servers can potentially cost thousands of dollars. See how we help data centers and IT managers **remotely monitor water presence, temperature, and facility operations 24/7** using innovative solutions connected to the Internet of Things (IoT).

Spoiler alert: The ROI is significant. An enterprise could now save tens of thousands of dollars by preventing water and temperature damage. They did it with data from a wide variety of fast-install IoT sensors and meters. The solution is all easily managed using an online dashboard on a smartphone or computer. Plus, alerts via email, text, or call.

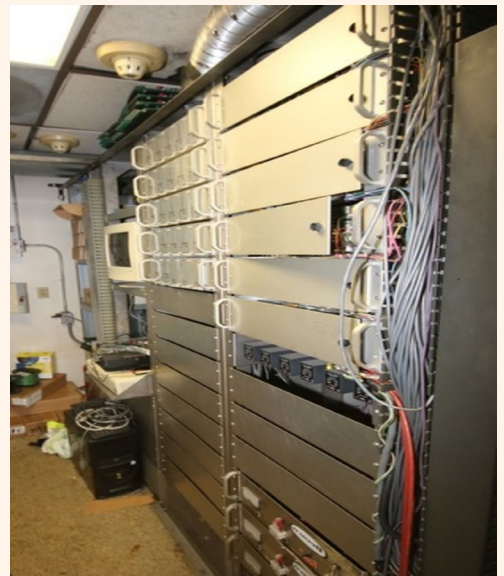
Challenges

A CTO of a large enterprise contacted us due to a plumbing leak near a server room at the company's headquarters. Over a weekend, the water caused significant downtime during the following week with damage to servers and IT equipment. It was because of this event that the CTO and his IT managers across the company wanted to:

- Put more preventive measures in place to better protect IT infrastructure and prolong the life of the equipment at all of its offices.
- Ensure the company's data center colocation facilities have redundant systems for added temperature, humidity, and water protection.

Facility management monitored office climates throughout the buildings and server rooms but didn't have water detection systems. The CTO and IT managers decided they needed a redundant remote temperature and humidity monitoring solution combined with a water detection solution for every building. With their data center facilities managed by a third party, they needed to help them improve temperature management and add water detection systems to its services.

Among these challenges, the company was committed to keeping the relative humidity (RH) in its server rooms and data center between 40 and 60 percent. They knew that just as high temperatures could increase downtime risk, high humidity could increase condensation levels, corrosion, and a higher risk of electrical shorts.



On the other hand, if levels dropped too low, their server rooms and data centers were more likely to experience electrostatic discharge (ESD). The company was also concerned about preventing possible damage from leaking coolant and water in its data center's cooling systems and plumbing.

IT leaders ultimately decided the company needed automated Remote Monitoring Solutions to track temperature, humidity, and water and streamline IT operations using actionable data.

Solution

The company's IT and data center personnel self-installed:

- A backup system of Temperature and Humidity Sensors in all of its server rooms and data center
- A Water Detection Solution with Wireless Water Rope, Detect Plus, and Puck Sensors placed in strategic locations throughout buildings and the data center
- Open-Closed Sensors on server room and data center doors to alert staff if they were ajar
- The Sensor Management and Remote Monitoring Software on IT staff smartphones and computers
- A gateway in each server room and the data center colocation facility to protect and communicate data sent to and from sensors

Sensors sent data wirelessly to the gateway, then the gateway aggregated the data and sent it to the Software. The sensors were set up in the software to check temperatures and record data every 30 minutes. IT managers set up notifications to alert staff when doors weren't shut, water was detected, and when Temperature Sensor readings went out of preset limits, allowing staff to respond immediately.

IT leaders and facility managers also decided to extend the company's sensor network by deploying our Duct Temperature and Differential Air Pressure Sensors and AC Current Meters to monitor HVAC and environmental control systems.



Results

Soon after installing the solution in server rooms and the data center, Temperature Sensors detected an incident where the environmental control system didn't provide adequate cooling in one of its main building's server rooms. True to our strategic fix-before-failure approach, Wireless Sensors detected the issue early, allowing IT personnel to repair the system before any damage occurred.

Using our comprehensive monitoring solution, the business can:

- Avoid potential equipment loss and facility damage with Wireless Sensors.
- Be alerted if doors are not closed properly, preventing temperature fluctuations.
- Automatically track and document climate conditions with remote monitoring.
- Ensure environmental control systems function correctly with a redundant solution.
- Streamline IT operations across the enterprise and in its data center facilities.

Overall, the Remote Monitoring Solution helps company server room and data center managers lower the risk of outages and mitigate environmental risks, protecting its bottom line.

ROI: After only a couple of days using the Wireless Solution, IT managers optimized their remote monitoring. Most importantly, they could save thousands of dollars by avoiding temperature, humidity, and water damage to their IT infrastructure.

Sensors and Meters Help Boost Uptime for a Better Bottom Line



1

Standard and Digital Temperature Sensors

The American Society of Heating, Refrigerating, and Air-Conditioning Engineers (ASHRAE) suggests server rooms and data centers stay between 18°C (64.4°F) to 27°C (80.6°F). Standard and Digital Temperature Sensors measure a range from -40°C to +125°C (-40°F to +257°F).

2

Humidity Sensors

The scientific-grade Humidity Sensor remotely monitors relative humidity (RH) with a +/- 3% accuracy (between 10–90% RH), temperature, and dew point in facilities. Available in Wireless and PoE options to instantly alert you via text, email, or call.

3

Open / Closed Sensors

You can know in an instant if a server room or data center door has been left open. Keep all your IT equipment and restricted areas safe. Our Open-Closed Sensor features a switch and trigger magnet to detect open-close status. It's ideal for lids, windows, and gates too.

4

Duct Temperature Sensors

Keep a sealed environment and easily monitor HVAC performance and ductwork temperatures with our Duct Temperature Sensor. The Sensor uses a probe to measure a range of -40°C to +150°C (-40°F to +302°F) and features a negative temperature coefficient (NTC) thermistor.

5

Water Detection Sensors

Wireless Water Detection Puck, Water Detect Plus, and Water Rope Sensor can help prevent damage from plumbing and cooling system leaks. Our Water Detection Sensors can also help you keep employees and customers safe from slips and falls.

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