

How Temperature and Humidity Impact Your Bottom Line

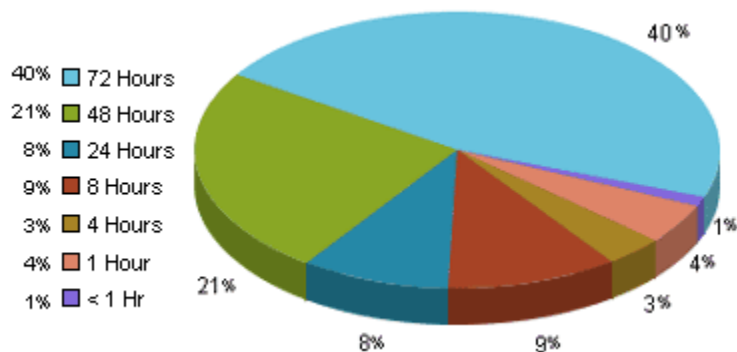
Computer systems have become the mainstay for the majority of businesses and their daily operations. Are your computers operating at peak efficiency? Is your network secure? Do you have back-ups of critical data? Any idea on how much poor systems performance, downtime and data loss cost businesses?

According to *Connected Planet Online*, by industry the average revenue lost per hour.

- Energy \$1,624
- High Tech \$4,167
- Health Care \$96,632
- Travel \$38,710
- Finance (U.S.) \$28,342

According to a report from the *Gartner Group* in late 2003, the average downtime cost for a computer network was a whopping \$42,000 per hour. Ten years later, with an ever increasing dependency on technology and automated processes, today's costs are substantially more.

The Cost of Computer Downtime: At what point is your company's survival at risk?



Source: Ontrack-Cost of Downtime Survey Results, 2001

Typically a data center is defined as a facility used to house computer systems and associated components, such as telecommunications and storage systems. It generally includes redundant or back-up power supplies, redundant data communications connections, environmental controls (e.g. air conditioning, fire suppression) and security devices. Monitoring environmental conditions in a computer room or data center is critical to ensuring uptime and system reliability.

A company with 99.9% uptime, at an average loss of \$42K per hour will lose \$367,920 per year in unplanned downtime.

Recommended Computer Room Temperature

Operating expensive IT computer equipment for extended periods of time at high temperatures greatly reduces reliability, longevity of components and will likely cause unplanned downtime. Maintaining an ambient temperature range of 68° to 75°F (20° to 24°C) is optimal for system reliability. This temperature range provides a safe buffer for equipment to operate in the event of air conditioning or HVAC equipment failure while making it easier to maintain a safe relative humidity level.

It is a generally agreed upon standard in the computer industry that expensive IT equipment should not be operated in a computer room or data center where the ambient room temperature has exceeded 85°F (30°C).

In today's high-density data centers and computer rooms, measuring the ambient room temperature is often not enough. The temperature of the air where it enters the server can be measurably higher than the ambient room temperature, depending on the layout of the data center and a higher concentration of heat producing equipment such as blade servers. Measuring the temperature of the aisles in the data center at multiple height levels can give an early indication of a potential temperature problem. For consistent and reliable temperature monitoring, place a temperature sensor at least every 25 feet in each aisle with sensors placed closer together if high temperature equipment like blade servers are in use. We recommend installing specially designed temperature alert units at the top of each rack in the data center. As the heat generated by the components in the rack rises, the alert units will provide an early warning and notify staff for temperature issues before critical systems, servers or network equipment is damaged.

Recommended Computer Room Humidity

Relative humidity, also known as RH, is defined as the amount of moisture in the air at a given temperature in relation to the maximum amount of moisture the air could hold at the same temperature. In a data center or computer room, maintaining ambient relative humidity levels between 45% and 55% is recommended for optimal performance and reliability.

When relative humidity levels are too high, water condensation can occur which results in hardware corrosion and early system and component failure. If the relative humidity is too low, computer equipment becomes susceptible to electrostatic discharge (ESD) which can cause damage to sensitive components. When monitoring the relative humidity in the data center, we recommend early warning alerts at 40% and 60% relative humidity, with critical alerts at 30% and 70% relative humidity. It is important to remember that the relative humidity is directly related to the current temperature, so monitoring temperature and humidity together is critical. As the value of IT equipment increases, the risk and associated costs can increase exponentially.

At risk? Not sure? Call VASEY at 317-873-2512. We can help protect your business from downtime and loss due to temperature and humidity challenges. If nothing else, call us for peace of mind!

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Online Resources:

- http://connectedplanetonline.com/analysts/infonetics/telecom_cost_network_downtime/
- http://www.avtech.com/About/Articles/AVT/NA/All/-/DD-NN-AN-TN/Recommended_Computer_Room_Temperature_Humidity.htm
- <http://it.toolbox.com/blogs/enterprise-solutions/humidity-and-computers-3158>
- <http://www.creativedata.net/index.cfm?webid=207>
- <http://www.remotedatabackups.com/why/prevent-pc-downtime.htm>
- <http://www.wikipedia.org>