

# When Permanent Cooling Isn't Enough

Stop hot spots from destroying your data with a portable cooling solution

Losing even a little cooling in a data center leaves the equipment vulnerable to damaging hot spots. Not only are they annoying, they can also lead to data loss.

Whether you're performing maintenance on a permanent cooling unit or equipment has malfunctioned without warning, portable cooling may be necessary to keep the data center functioning until a permanent fix is found.

## First Aid for Hot Equipment

Portable cooling is most often deployed in an emergency, when the units can be wheeled into any area to protect mission critical equipment and data until the permanent air conditioning can perform fully again, says Wayne Drooks, associate and senior mechanical engineer at Integrated Design Group.

"Most places don't have anything portable available because they're designed with redundant cooling," Drooks says. "But if you lose one in the wrong place, you still have enough cooling capacity, but now you have dead spots if you lost one at the end of the room or in the corner."

Mobile units can also prove helpful during upgrades, moves, and other short-term situations that prevent you from relying completely on permanent air conditioning.

"They can easily be deployed from one room to the next, wherever the crisis might occur," explains Eddie Stevenson, marketing manager for portable cooling manufacturer MovinCool. "It gives you a lot of flexibility because it's totally self-contained."

A ton of cooling can cover about 500 square feet, though your space's needs may vary if your data center or computer room is loaded with equipment or people. Server racks will likely generate the most heat, especially in light of the trend toward smaller rooms and compact servers that consume more power than older equipment.



**Your data could be in danger if your equipment develops hot spots. Portable cooling treats the problem until you can fix it.**

Changes to the space's needs, such as expansions or upgrades, can also increase the power and cooling requirements.

"The big challenge with a lot of data centers is that capacity planning, while it's done very well by certain companies, often is an area of neglect," says Joe Capes, business development director of cooling for Schneider Electric IT Business. "A lot of times, that's not predicted accurately or can't be predicted accurately. Rooms not designed to be data centers are not properly sealed – you end up getting penetration from outside air and a lot of thermal load because the rooms have windows, which can be a real challenge."

## Efficiency vs. Necessity

Deploying a portable cooling unit for the first time requires a few precautions. "You want to think it all the way through and know what it's used for," explains Stevenson. "Make sure it has the features that you need."

Crucial considerations include:

- **Networking ability:** Can the unit connect to a building control system if necessary? "If the unit's shut down,

it will give you a signal alert so you're aware of it," Stevenson explains.

- **Continuous runtime:** "Do you have a pump hooked up to the unit so it can run continuously?" Stevenson asks. "A lot of times in IT applications, people aren't going to be in and out constantly, so you want to have that pump hooked up."
- **Exhaust:** If the unit is a true portable air conditioner (as opposed to a spot cooler, which doesn't pull in outside air), you need to figure out where to exhaust the hot air. Some units come with a short length of flexible duct; if not, you'll have to find another way to vent the exhaust into the ceiling or outside. Look for a model that makes it easy to construct this temporary ductwork.
- **Pressure:** "Make sure you have no negative air pressure in the room so you don't have that vacuum effect," Stevenson says. Negative air pressure occurs when too much air leaves the space without an adequate amount of replacement air entering to compensate for it. This can lead to moisture buildup, poor IAQ, and other issues.

Portable cooling units can be used on a long-term basis if necessary, but don't make them a long-term solution unless you have no other alternative.

"They're not as energy-efficient as a normal computer room air conditioner, and they don't have as many options as far as humidity and reheating," says Todd Jewett, parts manager for Data Center Systems Inc.

However, if portability and speed of installation are more important – and during an emergency, that's often the case – deploying a portable unit might be the answer to your data center's problems. ■

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