



H5 DATA CENTERS



Data Center Security

What to Look for When Choosing a Data Center Provider

Data Center Location

Many companies fail to consider the possibility of a natural or manmade disaster when evaluating potential data centers. Stay away from data centers that are located on earthquake fault lines, or in areas that are prone to hurricanes and floods. Also find out if the data center is in close proximity to railroad lines, or in a flight path. If industrial goods are transported through a railroad, a spill can trigger an evacuation, resulting in a “lights out” facility. Similarly, a flight emergency can result in an aircraft dumping fuel – a key consideration if the data center is located inland.

Data Center Construction

Be sure to understand how your potential data center is constructed. Concrete walls are an effective barrier to natural elements and explosive devices. A concrete slab and column construction offers a high floor load, which can support cabinets with a heavier weight.

In secure areas of the data center, look for internal walls that run from the slab ceiling all the way to the subflooring where wiring is typically located. Also make sure that any drop-down ceilings don't have hidden access points. Other construction elements to look for include:

Limited Entry Points

Look for signs of a controlled access into the data center, such as one main entrance, plus a back entrance for a loading dock.

Exit-Only Fire Doors

For exits required by fire codes, doors should be handle-less on the outside of the building.

When any of these doors are opened, a loud alarm should sound off and trigger a response from security.

Separate Mechanical Areas

Mechanical areas that house environmental and uninterruptible power supplies should be off-limits to everyone but credentialed personnel. Concrete walls should surround any outside generators.

Access Monitoring and Control

Many data centers have on-site security personnel to qualify and control visitor and vendor traffic. They should also include the following access monitoring and control features.

Video Surveillance

Video monitoring is an essential security feature in data centers. Cameras should be installed around the perimeter of the building, at all entrances and exits, and at every access point throughout the building. Look for a combination of motion-detection devices, low-light cameras, pan-tilt-zoom cameras and standard fixed cameras. Footage should be digitally recorded and stored offsite – be sure to ask how long it is retained.

Two-Factor Authentication

Biometric identification has become standard for access to critical areas in data centers. Hand geometry or fingerprint scanners are widely used, however, some data centers also have retinal scanning in place.

Access Controls

In addition to having a keypad or keycard system at the front entrance, the data center should also have one of the following access control features:

A Floor-to-Ceiling Turnstile

If someone tries to “piggyback” behind an authenticated visitor, the door gently revolves in the reverse direction. In the case of a fire, the walls of the turnstile flatten to allow for quick exit.

A “Mantrap”

This provides alternate access for equipment and for persons with disabilities. It consists of two separate doors with an airlock in between. Only one door can be opened at a time, and authentication is needed for both doors.

Fire Detection and Suppression

Many data centers use multiple fire suppression systems. Some of the most common systems include:

Pre-Action Pipe Dry Systems

The sprinklers in this system are charged with air instead of water. In the event of smoke or a fire alarm, it signals the system to charge the lines with water. Water deluge occurs only when a sprinkler head reaches 155 degrees or more at that particular sprinkler head. This ensures that fire suppression is limited only to the affected area.

VESDA (Very Early Smoke Detection Apparatus)

VESDA is a laser-based smoke detection system. If an abnormality is detected, it puts the fire system into a state of alarm. Data center personnel can then pinpoint and address the exact location within the data center using hand-held detectors that allow them to sample air by sector.

Photo Electric Detection Grid

Each smoke detector is assigned a grid that looks for opacity of the air, which can indicate the possibility of a fire.

Redundant Power

Data centers should have UPS power (uninterruptible power supply). The UPS system provides power in a consistent, reliable fashion to customer cabinets and is backed up by onsite generators in the event utility power is interrupted. Look for data centers that have N + 1 or A/B architectures. With N+1 architecture, an additional module is always in place to keep systems backed up during repairs, maintenance and fault. A/B architecture offers two distinct power supply channels. Since they don't interact with each other, one can be taken down with no impact to the other one. Avoid data centers with N single threaded architecture, which can't be maintained without impacting a customer load and sustaining downtime.