

Data Centers and Earthquakes - IO



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Data centers located in earthquake zones require business continuity contingencies that go far beyond the measures used to protect systems and data from more commonplace threats, such as fire, weather and crime.

While a powerful earthquake is rare, its impact is swift and usually devastating. An earthquake can, without warning, transform a functioning data center into a pile of rubble within minutes. While no amount of planning, preparation or construction can guarantee that a data center will withstand a major earthquake, you can increase your survival chances by taking the following steps:

Understand the Risk: The interesting thing about earthquake zones is that there are more of them than you may think. While the entire West Coast, southern Alaska and most of Hawaii are well known seismic hotspots, there are also many other high risk locations. Surprisingly, areas of Arkansas, Missouri, Tennessee, Illinois, Kentucky and South Carolina are as vulnerable to a devastating earthquake as the coastal regions of California, Oregon and Washington. Meanwhile, portions of New York, New Hampshire, Utah, Idaho and several other states are moderately vulnerable to earthquakes. If you haven't already checked a seismic map to see how your location rates, make it a point to do so.

Building Considerations: Building construction plays a crucial role in **data center** earthquake survivability. While no building can ever be made entirely "earthquake proof," a structure that meets current local seismic building codes is more likely to come through a big shock intact than an older, pre-code building. Many data center operators actually strive to exceed code requirements by reinforcing their buildings with extra support columns, isolation joints and other protective construction techniques.

Inside the Data Center: Even if a data center's building survives an earthquake in good shape, the fragile, sensitive equipment located inside the structure may not fare nearly as well. To ensure that servers and related

hardware remain steady and in place during a seismic event, many data center operators “harden” their facilities by installing isolation systems that essentially decouple the data center from the surrounding seismic environment. Such measures, while highly expensive, are essential for protecting valuable gear in earthquake zones.

Public Infrastructure Considerations: Even if your carefully planned and constructed data center survives the quake with only minor damage, there’s still a strong chance that the surrounding public infrastructure will be devastated or, at best, severely disrupted. Utilities, roads and other vital resources may remain unavailable or highly restricted for weeks or months, making it impossible to resume normal data center operations. Many employees, meanwhile, may be unable or reluctant to report to work as they focus on helping their families survive the crisis.

Stay or Move? Realizing that it’s impossible to completely earthquake-proof a data center, a growing number of businesses are deciding to deploy or back up their critical IT operations in locations with little or no seismic activity. Such places really do exist. One example is Central Arizona, including the IT- and network-rich cities of Phoenix and Scottsdale. According to the Greater Phoenix Economic Council, the local area rarely experiences major earthquake or tremor activity. In fact, there have been no deaths or injuries from earthquakes in Arizona during the last century.

Today’s networked world allows a data center to be fully and efficiently managed from almost anywhere. If an earthquake or other disaster knocks out local network access, cutting the data center link, automated services and on-site management will keep operations running normally until your disaster management team arrives to take control.

Bottom line: An earthquake can strike at any time, but your data center doesn’t have to be exposed to this terrible threat.

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