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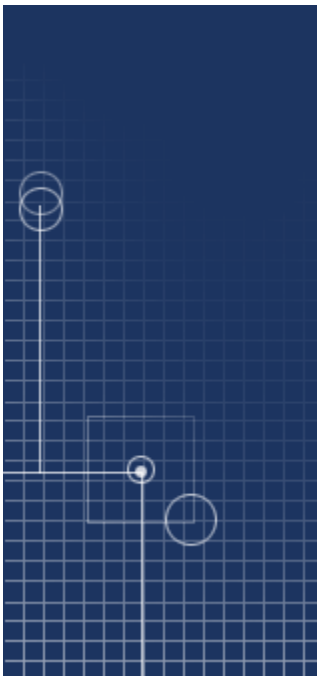

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On Cloud Nine With Five Nines

Having Five Nines Of Availability Is Ideal, But Is It Worth The Cost?

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There's a great deal of discussion about the "nines" of availability, with IT and data center managers wondering if they should spend more money to get just a bit closer to that highly available but fairly expensive "five nines" rating.

In uptime speak, five **nines** is used to describe highly available systems, referring to 99.999% availability. This is essentially 100% but with the acknowledgement that issues do crop up that can bring down a network or application.

Having five nines, whether through in-house methods or more usually through a hosted system, is ideal, but it's also cost prohibitive for many companies. To be cost efficient and still have available systems, companies have to balance downtime risk with business needs and get to a nine that brings availability without blowing the IT budget.

Crafting An Agreement

Small and midsized enterprises will likely hear most about nines when they're presented with a service level agreement from a hosting provider, but the number can be deceptive.

"Even experienced IT managers will fail to register the fine print on the agreement," says David Humphrey, a senior tech advisor at IT consultancy company Ekaru. "Not only is what components this number measures of importance but how a provider measures this performance."

What SLAs normally cover are network and power availability, with some providers covering hardware failure on the server itself. Most state that the SLA excludes normally scheduled maintenance but don't detail what that includes or how often it's done.

Typically small and midsized enterprises can get up to three nines of reliability from any host, Humphrey says. Pricing can range tremendously, from $10 per month up to $400, for example, because the break-up of big hosting firms in 2001 is still being felt, but the availability should be about the same at the three nines level.

To get more nines, companies are simply asked to pay more. For 99.99% hardware uptime, for example, a company would have to configure its installation for fault tolerant server provisioning, which brings a 60% service fee uptick, Humphrey notes. Some ecommerce sites may find that five nines could cost them about $30,000 per month with a hosting provider.

Overall Humphrey advises SMEs to focus less on the number of nines when negotiating SLAs and more on the factors that affect availability, such as multihome network connectivity, redundant power grid connectivity, UPS protection, and a dedicated service

representative with escalation authority.

Business & IT Alignment

In figuring out whether to increase availability, companies need to go beyond an attitude of “always on” and determine whether the cost is worth it for the company, says IT consultant Craig Mullins.

“The question of availability is a business question more than a technology question,” he says. “Too often IT folks think about availability in terms that are closest to them. That is, technical terms.” Instead, companies should focus on what business requirements dictate that round-the-clock availability is required, he notes.

“Achieving five nines can be quite costly,” says Mullins. “Any organization needs to cost justify such an effort.” Ideally the business gains achieved by higher availability will be greater than the cost of achieving that availability. If it isn’t, a company should question whether tapping into the budget is worth the outcome.

Determining availability should involve much more than just a desire to be “on the Web” or to implement bleeding edge technologies, Mullins adds. It should be tied to large-scale company needs that take into account the company’s growth, number of users, and cost of a down-time incident.

“Just because high availability can be built into a system does not mean that every system should be built with a high availability design,” he says. “A highly available system can cost many times more than a traditional system designed with unavailability built into it.”

Raising Your Number

For companies that do want to increase the availability of their systems, one method may be to look beyond hosted providers and focus instead on internal hardware, especially if a company is trying to boost its nines with something like database availability.

Clustering is one option for increasing the reliability of servers, Mullins notes. “When throughput increases due to expanding business, systems can be kept online and available,” he says.

In general, nines can usually be determined over time as downtime events occur, says Brad Feld, a venture capitalist who has been on the board of such technology companies as Raindance. “I think every company gets a couple of free passes,” he says. “However, users do eventually become impatient.”

Feld recommends that companies look at their rate of growth in terms of users and invest in a more redundant infrastructure according to the speed of that growth. “As an online service becomes more popular, the importance of it being up and operational all the time increases,” he notes. “While this is a logical ideal, it can create pain at some point for a young, growing company.” ■

by Elizabeth Millard

Nines By The Numbers

Trying to figure out nines has to do with timing and availability. For example, a server that has four nines is available 99.99% of the time. Because a year contains about 31.5 million seconds, four nines means your system could be down for about 52 minutes per year. With five nines, or 99.999%, you would have only 315 seconds of downtime. Adding a sixth nine would allow you only 32 seconds of annual downtime.

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