the *Availability Digest*

Go Daddy Takes Down Millions of Web Sites
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At about 10 AM EDT on Monday, September 10, 2012, companies and individuals around the world began to lose their web sites and email services (the Availability Digest being among them). Ultimately, an estimated fifteen million web sites and an untold number of email accounts suffered failure and did not recover until six hours later. Most of the web sites were those of individuals or small businesses. Small businesses lost massive amounts of revenue in lost sales.

Go Daddy Goes Down

This catastrophe was caused by an outage incurred by Go Daddy. Go Daddy is a major Internet domain registrar and web-hosting company. It is the largest registrar in the world, having registered more that 45 million domain names, four times more than its nearest competitor.

With over USD $1 billion in revenue, Go Daddy hosts more than five million web sites on its server farms. It caters to small businesses and individuals with very little web experience by providing them with easy-to-use tools to build their web sites.

It became obvious early on that the problem was with Go Daddy's DNS (Domain Name System) servers. They were largely inaccessible. With no access to its DNS servers, domain URLs managed by Go Daddy could not be converted to IP addresses, and those web sites and email domains therefore could not be reached. Not only were the web sites and email addresses hosted by Go Daddy inaccessible, but so were those hosted by other companies but whose domain names were hosted by Go Daddy on its DNS servers.

What Caused the Outage?

The big question was what had taken Go Daddy's DNS servers down? As the day progressed, Go Daddy information and press investigations went through a series of conclusions, each being discredited as the next theory took form.

An Anonymous DDoS Attack

The first conjecture was that Anonymous, a group of loosely-affiliated individuals that participate in major hacking attacks, were behind a Distributed Denial of Service (DDoS) attack by flooding Go Daddy's DNS servers with conversion requests.

Anonymous had opposed Go Daddy's support of SOPA (the Stop Online Piracy Act) intended to protect online copyrights. Opponents claimed that SOPA would hobble the open nature of the Internet and open the door to online censorship. In fact, many customers left Go Daddy in protest. In an open letter, Anonymous claimed that support of SOPA made Go Daddy an enemy of the Internet and an enemy of Anonymous. It ended with the threat, "Go Daddy, Expect us."

(Go Daddy later removed its support of SOPA, and SOPA was never passed into law.)

AnonymousOwn3r

However, as this theory was gaining credibility, tweets from an individual who identified himself as AnonymousOwn3r claimed responsibility. AnonymousOwn3r insisted that he was acting on his own, that the outage was indeed caused by his DDoS attack, and that Anonymous had nothing to do with the attack. After an article by TechCrunch blaming Anonymous, AnonymousOwn3r sent a tweet to TechCrunch demanding "please edit it [the TechCrunch article] the attack is not coming from Anonymous coletive [sic], the attack it's coming only from me."

It has never been determined who AnonymousOwn3r is, but he has claimed to be Brazilian. His tweets are characterized by broken English filled with typos.

Though AnonymousOwn3r never provided any evidence to support his claim, the news journals and blogs widely reported his involvement. In response to a question about whether he took down the entire Go Daddy DNS system, he responded, "yes! it's not so complex. … when i do some DDOS attack i like to let it down by many days, the attack for unlimited time, it can last one hour or one month."

When asked why he initiated the attacks, he offered no clear reason: "i'm taklng godaddy down because will i'd like to test how the cyber security is safe and for more reasons that i can not talk now."

Go Daddy Networking Fault

While all of the conjecture as too who was behind the outage was going on in the press, Go Daddy was busy getting to the root cause of the outage. They finally got service restored about 4 PM EDT and announced that the outage was not caused by a DDoS attack at all. Rather, it was an internal networking problem that caused corruption of routing tables directing traffic to its DNS servers. Because of the faulty routing, the DNS servers could not be reached.

During the outage, Go Daddy made one repair. It moved its DNS domain name to its biggest competitor, VeriSign, so that the Go Daddy site was accessible. This, however, did nothing for the other millions of web sites and email addresses that were down.

GoDaddy's Apology

GoDaddy's CEO, Scott Wagner, issued the following letter of apology:

"We owe you a big apology for the intermittent service outages we experienced on September 10th that may have impacted your website and your interaction with GoDaddy.com.

"The service outage was due to a series of internal network events that corrupted router data tables. Once the issues were identified, we took corrective actions to restore services for our customers and GoDaddy.com. We have implemented measures to prevent this from occurring again.

"At no time was any sensitive customer information, such as credit card data, passwords or names and addresses, compromised.

"Throughout our history, we have provided 99.999% uptime in our DNS infrastructure. This is the level of performance our customers have come to expect from us and that we expect from ourselves. We pride ourselves on providing world-class service — through our products, our site experience and customer care.

"We have let our customers down and we know it. I cannot express how sorry I am to those of you who were inconvenienced. We will learn from this.

"I'd like to express my profound gratitude to all our customers. We are thankful for your straightforward feedback and the confidence you have shown in us.

"In appreciation, we will reach out to affected customers in the coming days with a good faith gesture that acknowledges the disruption. We are grateful for your continued loyalty and support."

Go Daddy offered to its customers a 30% discount on products good for the next ten days. With this discount, a customer could get a $13 domain name for $9.10. Whoopie!

Summary

Go Daddy's outage illustrates that with all of its redundancy, the Internet is nevertheless a fragile ecosystem. The Availability Digest's Never Again stories are loaded with instances of Internet outages. Companies must have a plan for continuing their business in the absence of the Internet or be willing to face the consequences.

Acknowledgements