

# Even the best written code has a weakness.



Don MacVittie, 2011-18-10

Developers are a great lot of folks, people who spend their day trying to do the impossible with bits for a customer base that is, by and large, impossible to satisfy. When the bits all line up correctly, the last line of code has been checked in, and the nightly compile accepted for deployment, then they get to sit back, relax for five minutes, and start over again. If this makes you think it's not a great life, then you should live it. Developing gives instant feedback. No matter how unhappy users can be, fixing that nagging bug you've been chasing for hours is a rush, and starting with a blank source code file is like looking across a wide-open plain. You can see what might be, and you get to go figure out how to do it.



But yeah, it's high-stress. Deadlines are constant, and it's not like writing where you have to get your content finished, once the code is done, ten million people want to have input into what you should have done. Various techniques have been developed to mitigate the depressing fact that people tell you what they want after they see what you've built, but the fact is, for most ordinary users, be they business users or end users, they don't know what they want until they see something working on their monitor and can play with it. Because they need a point of comparison. Some few can tell you sight-unseen, early in the process, what they'd like, but most will have increasing demands as the application's capabilities increase.

And these days, there's one more major gotcha.

You have to care about the network. I've been saying that for years, but we've passed the point where you could ignore me.

Some will say "cloud changes all that!" but the truth is, cloud changes the problem domain, not the fact that you have to care.

Let's say you have a web application (as there are precious few other types being developed these days), and you have tweaked it to uber-performance so that it is scalable. You've put it behind a load balancer or application delivery controller so that even if your tweaks aren't enough, you can share the load amongst several copies. You've done it all right.

And your primary Internet connection goes down. So your network staff switches to the backup connection – which is invariably smaller than the primary.

The problem in this scenario is that your application can be load balanced *and* highly optimized, but now it is fighting for bandwidth on a reduced connection.

This is hardly the only scenario in which your application can suffer from outside interference. Ever been on the receiving end of a router configuration error? Your application appears down to everyone in the multi-verse, but in reality, it is responding just peachy but the network is routing your users to Timbuktu.

I could tell you about all the great solutions that F5 offers for this problem or that problem (there are many of them, and they're pretty darned good), but from your perspective, the issue is (or should be) much bigger than that. You need to be able to understand when the problem at hand is a network problem, and you need to be able to diagnose that fact quickly, so the right people are on the job.

And that means you need to know networking. Just as importantly, you need to at least viscerally understand your specific network environment. They're all a bit different, and the likely pain points are different, even though some problems are universal. A DDOS attack, for example, is aimed at clogging your Internet connection, no matter your architecture... But some networking gear reduces the ability of DDOS to actually take the site down, so your network might only see degraded performance.

So ask the network team to teach you. Ask them what devices are between your applications and your customers. Ask them how these devices (or their malfunction) impact your applications. Know the environment you're in, because for most applications today, a problem on the network makes for a poorly performing application. And that is indeed your responsibility.



In the cloud you can't know all of these things for real, but you can understand the concepts. Is there a virtual [ADC](#)? What is being used for firewall services? What perf tools are available to determine the bottlenecks of applications deployed in the cloud? All things you'll want to know, so you can know how best to start troubleshooting when the inevitable problems occur. Learning things like this *after* your application is the source of user pain seems to still be the norm, but it's certainly not the best solution. Either it increases the amount of time your application is getting bad PR, or you are fixing things hastily, and haste does indeed make waste in most critical application situations.

This knowledge will also give you a new set of tools to solve problems with. If you know that a Web Application Acceleration tool like F5's [WebAccelerator](#) is in place between your application and the user, then you might be able to say "rather than rewrite this chunk of code, let's tweak the Web Application Acceleration engine to handle it" and save both time and potential coding defect issues.

It's still a great time to be a developer, the fun is still all there, it's just a more complex world. Master your network architecture, and be a better developer for it.

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