Launching Online:
Cloud Computing vs. Virtual Private Servers

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For the past several issues of Christian Computing, I've written about mobility topics. Starting this month, I'm heading in a new direction. Recently, I've worked with a group of homeschooled students to launch a new online ministry/business and I think the lessons that we're learning may be applicable for anyone else looking to launch a ministry online.

Launching Hschooler.net: A Bit of Background

My wife and I home school our son – okay, to be honest, she does 99% of the work and I provide encouragement and support. The one area where I actually help is in teaching two subjects: computer skills and business. In 2008 I taught a class to students from three homeschooled families on the disciplines required for Biblical business success. As an outcome of that, in 2009 my son and I started developing and implementing a plan to create an online social network for Christian families, especially those that home school. We believed that there was a need for a safe alternative to Facebook, MySpace, et al.

I decided that launching this service was also a great opportunity for homeschooled students to learn about being owners and operators of a business while providing a valuable ministry to Christian families. We formed Christian Homeschool Network, LLC, registered the domain Hschooler.net, and set up a virtual ownership structure where participating students will share in the business profits. We also recruited two additional homeschooled students. We now have Brian heading up Product Development, Austin running Marketing, and Kevin leading Revenue Generation.

But most relevant to our discussion here, we also started wrestling with the technical details behind launching the service. How would we develop the software? Where would we host it? How would we handle payments? How could we simplify administration of the domains? These are all meaningful issues for anyone launching a new ministry online. Over the next several issues, I will describe how we addressed issues like this. Our solutions may not be the right answer for you, but I hope to describe each decision process in a way that helps you apply it to your specific situation.

Hosting Has Changed!

I launched my first online business in 1995. Digital Frontiers, LLC was a web development firm I started with two Christian partners. We launched the first web site for major corporations including Thrifty Rental Car, Phillips Petroleum, and PennWell Publishing. But we also dedicated Friday afternoons to free development work for Churches and Ministries. In order to host these web sites, we established our "data center" with a couple of Sun servers (costing about $20,000 each) connected to the Internet with a T1 line (1.5Mbps for close to $1000 per month). The Lord used those servers, and the complexities of configuring them and keeping them running flawlessly with multiple domains, to teach me perseverance

and patience, to say the least! I particularly recall the Sendmail utility to be a "sanctifying experience."

By the time I launched my second online ministry/business in 2000, the costs and challenges of hosting had come down by an order of magnitude. Seek First Networks, LLC used a Sun Cobalt server (about $2000, with a very simple web-based configuration and management interface) connected to the Internet over a business-class DSL link (about $100 per month for about 1Mbps).

When I launched Living Stones Ministry (lstones.com) in 2005, I went entirely with a hosted model. I chose Arias Web Hosting for about $20 per month and never had to touch the server (their equivalent plan today costs $9 per month). Wow – it's amazing to see how much easier, and more affordable hosting had become in just 10 years.

But even since 2005, the world of hosting has changed dramatically.

Now We Can Gain Reliability and Scalability without All the Hassle

It's hard for the cost or complexity to come down any further (although I'm hosting some of my ministry work at BlueHost.com – virtually unlimited everything for $6.95 per month). So, most of the advancements have been in the areas of increasing the sophistication, reliability, and scalability that's available to smaller organizations.

We don't know how big Hschooler.net will get, but we know that many social networks have stumbled and fallen because they were unable to deal with the scalability issue as they grew. We didn't want to find ourselves in that position. At the same time, we didn't have the skills, manpower, or money to build out our own server farm with **load sharing** or **cluster computing** or any other fancy tricks. Maybe someday

we'll get there, but for now, we needed to start more simply.

Into this breach, step new forms of hosted services. The two that I seriously explored were cloud computing and virtual private servers.

Cloud Computing Promises Scalability and Reliability in a Pay As You Go Model

Optimally, if Hschooler.net continues to grow, I expect we'll end up on a cloud computing infrastructure.

According to **Wikipedia**, "Cloud computing describes a new supplement, consumption and delivery model for IT services based on the Internet, and it typically involves the provision of dynamically scalable and often virtualized

resources as a service over the Internet."

Amazon launched cloud computing services in 1996 under the name Amazon Web Services (AWS) and is arguably the leader in providing these services to startup organizations. According to **their website** "with AWS you can requisition compute power, storage, and other services–gaining access to a suite of elastic IT infrastructure services as your business demands them. … You pay only for what you use, with no up-front expenses or long-term commitments, making AWS the most cost-effective way to deliver your application to your customers and clients. And, with AWS, you can take advantage of Amazon.com's global computing infrastructure, that is the backbone of Amazon.com's $15 billion retail business and transactional enterprise whose scalable, reliable, and secure distributed computing infrastructure has been honed for over 13 years."
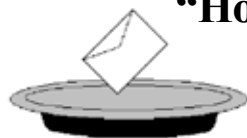
Sounds perfect for a growing business with uncertain demand. And maybe someday, it will be perfect for Hschooler.net. However, the pricing model can be a bit complex and unpredictable. Implementing and managing AWS also seems daunting to a team of part timers working to get a basic service off the ground.

For example, AWS is broken down into a variety of discrete component services. To launch Hschooler.net, we would need to use Amazon Elastic Compute Cloud (or EC2 services) which costs $0.085 per hour for a standard small on-demand instance (or $61.20 per month for 24x7 operation) plus Amazon Simple Storage Service (or S3) which costs $0.15 per GB of storage per month plus $0.10 per GB data transfer in plus $0.15 per GB of data transfer out (or at least $1.50 per month for 10GB of storage). We may also need to use Amazon's Relational Database Service (or RDS) which costs $0.11 per hour for a small database instance (or $79.20 per month for 24x7 operation) plus $0.10 per GB per month for provisioned storage and $0.10 per one million I/O requests.

In startup mode, you can understand our reluctance to embrace this model, however, as the service begins to outgrow the path we've chosen, I'm hopeful that we'll be able to leverage the scalability and reliability benefits promised by cloud computing.

Virtual Private Servers Marry Affordability with Dedicated Performance and Scalability

So, for now, the path we've chosen is a Virtual Private Server (VPS) service. This service gives us com-

plete control over the hosting, as if we owned a dedicated server. We completely control what software gets loaded on "our" server; we can reconfigure it however we like; and we can even reboot it whenever we like. However, we're really controlling a virtual server that is sharing the actual underlying hardware with other organizations. That means that the service is significantly more affordable than any dedicated hosting ever will be.

We also can grow our server as our traffic grows. We're using a service called Slicehost from Rackspace, a leading hosting provider. We've started with their low end service which provides 256MB of memory dedicated to Hschooler.net, 10GB of storage, and a guaranteed share of the processing cycles on a hefty server for $20 per month. We can easily create a duplicate slice as a redundant backup. We can also resize our "slice" to handle increasing traffic – up to 64 times as many resources for $800 per month.

For now, we've chosen to use Slicehost because it gives us an affordable starting point for Hschooler.net and an easy path to scale up as our traffic grows. This approach doesn't provide the reliability promised by cloud computing, and the scalability is limited on the high end. My hope and prayer is that our revenue will scale with the traffic so that we can afford both the increased resources and the expertise and time to implement a robust cloud computing approach.

So, with the (seemingly) simple question of where to host Hschooler.net off the table (for now), we could move on with other pressing questions – which I'll get to in coming months!

Russ McGuire is an executive for a Fortune 100 company and the founder/co-founder of three technology start-ups. His latest entrepreneurial venture is Hschooler.net (http://hschooler. net), a social network for Christian families (especially homeschoolers) which is being built and run by three homeschooled students under Russ' direction.