Tech Brief: Cloud Computing

Interview with John Pozadzides, VP of Product Development, Layered Technologies

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VP of Product Development
Layered Technologies

1. As an introduction, could you elaborate on Layered Tech's Cloud Computing Solution?

Layered Technologies is a global leader in the area of cloud computing. We currently have well over 1,000 nodes (physical machines) in our Grid Layer computing platform, making us larger than almost all of our competitors combined.

The best way to explain the Cloud computing concept is to compare and contrast it with existing technology, so if you'll indulge me I'm going to back up a bit and start with traditional architecture.

Historically, the only option available to businesses with large mission-critical applications was to distribute them across a number of dedicated servers intermixed with firewalls, switches and load balancers. These enterprise-grade solutions have a high degree of complexity, require a staff of system administrators and engineers to provision, and are extremely expensive to deploy with 100% redundancy.

Layered Technologies cloud computing offering, The Grid Layer, solves all of these problems by providing users with a powerful graphical configuration interface which lets them create entire virtual infrastructures within the Grid, comprised of a wide range of devices including firewalls, load balancers and servers. Switching, routing and monitoring are all built into the Grid as well as complete physical redundancy and RAID 1 network duplication of data across physical nodes.

We believe that cloud computing services are the next generation of infrastructure and that as more businesses learn about these offerings the huge cost reductions, inherent redundancy and extreme scalability will compel CIOs and CTOs to migrate their sprawling applications to service providers like Layered Technologies.

2. What are the salient features of your solution?

The Grid layer offers a number of important features simply not found in competing service offerings. All of the following are native features of The Grid:

- A simple Visio-like graphical configuration interface which allows anyone to configure one server, or an entire virtual data center, in minutes.

- Complete redundancy within the system with built in monitoring and self-healing capabilities. The Grid will restart any application running on a physical node that fails by moving it to a separate node within minutes.

- The proven ability to scale a single client grid to well over 100 physical nodes means that even extremely large clients can obtain incredible resource density if required. For example, a 100 node grid with quad core, dual processor nodes, each containing 1TB hard drives and 32GB of RAM would equate to 800 processor cores, 3.2TB of RAM and 100TB of storage space.

3. What differentiates your solution from that of others in this field?

Some of the most significant differences between Layered Tech's Grid solution and others available in the market include:

- Unlike providers such as Amazon and most recently Google who are offering spare computing cycles on their inventory of existing hardware, Layered Technologies is a dedicated hosting provider. Our singular focus in this area allows us to be more responsive, flexible, and customer service oriented.

- One of the hallmarks of The Grid Layer is the ability to run almost any application natively without the need for custom API integration or other proprietary modifications. Amazon and Google's cloud computing and storage offerings require strict adherence to very specific API guidelines which can require complete re-writes of applications – only to then be locked in to using their proprietary service.

- Provisioning on true enterprise grade HP hardware means that Layered Tech's Grid clients have access to the fastest CPUs, RAM and networking components available. This contrasts sharply with Amazon's offering, which they have stated runs on Celeron 1.7ghz equivalent white box machines.

- Layered Tech's two years of Grid leadership combined with our demonstrated ability to provision the world's largest Grid infrastructures means we are well ahead of all competitors in terms of developing support structures, provisioning systems, and intellectual property within the organization for servicing these special clients. Experience counts.

4. What do you consider as drivers propelling the growth of Cloud Computing?

Cloud computing is a new disruptive technology. When compared to Dedicated hosting utility computing platforms are "better", "faster" and "cheaper". This is not merely an improvement of existing systems in which you can only pick any two (better + faster is NOT cheaper), but an evolutionary step, which is absolutely compelling to anyone that consumes computing resources.

5. What according to you are the major challenges or restraints that impede further development of Cloud Computing? How are you trying to address them?

Problems currently impeding the growth of utility / cloud / grid computing (whatever you choose to call it) include:

- As an emerging technology, it takes time for service providers to get over the learning curve.
- Service providers have been geared up for dedicated hosting for the last decade. Their infrastructure, sales channels, support systems, etc. are all built to focus on legacy systems. Disruptive technologies hurt.
- Amazon's offering has not done anyone favors to Cloud computing because many people who initially looked into their limited offering quickly realized existing systems would not utilize it without retooling.

6. What are the current and potential applications of Cloud Computing? Could you provide a Roadmap on when the applications would be realized?

The nice thing about LT's Grid is that almost any existing application will run on it. We currently have a wide range of clients who have migrated their applications to the Grid and are enjoying the benefits of increased redundancy, improved scalability and ease of management. Clients are currently running applications such as:

- A major search engine
- A development environment for one of the largest Telecoms in the world
- A Web site monitoring service
- Standardized enterprise SAS services.

7. Do you collaborate or wish to collaborate with other companies / universities / research institutions / companies for your work?

We currently work closely with 3tera, the company behind AppLogic software that helps to power our infrastructure, as well as hundreds of clients who utilize our Grid hosting services. With that, we would be happy to enter into discussions with researchers interested in cloud computing initiatives, but we are unaware of any who are working in this field.

8. What additional information is available?

The best thing we could share would be a demonstration of the Grid's Web based interface in action, and I'd be happy to arrange for that demonstration if there is any interest in seeing it. Please email me at johnp@layeredtechnologies.com >>