



Jumping on the Cloud-Wagon?

Pack your server applications for the trip.

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Jumping on the Cloud-Wagon?

Pack your server applications for the trip.

You'll need an approach to server-side application distribution and provisioning that is architected for the cloud and designed for IT, if you're going to deliver on the business promise of virtualization. AppZero's virtual application appliance (VAA) approach fits the bill with zero operating system (OS), zero install, and zero overhead deploying server-side applications in time that approaches zero.

Last one in is a rotten egg

Right from the start cloud computing made sense in an "if-you-build-it-they-will-come" kind of way: Scale computing capacity up and down in an orchestrated dance of IT and business. Cost-effectiveness is an admirable goal at any time.

At this particular time of economic trauma, the Cloud's siren song is suddenly compelling to CEOs and line-of-business managers. What they find so interesting goes beyond simple cost cutting, although that prospect is certainly a plus. The Cloud changes the economics of IT, moving money out of capital investment into the operating budget -- paying as you go with negligible up-front costs.

Money always talks, but it positively shouts in this economy. Yet, economics is not the only driver of C-level fascination with the Cloud. The promise of freedom rings here.

The love/hate relationship between IT and the business it lives to support tilts toward the hate side of the equation when IT is seen as an impediment to action. Business leaders think, "Hmmm, ... Wouldn't it be nice to actually get what we pay for from IT? Maybe we can eliminate the middle man and run our applications as services."

When business leaders are more excited than IT about "the next big thing" in technology (and they are), you have an irresistible force. The Cloud-wagon is rolling, and IT professionals -- with varying degrees of enthusiasm -- are being forced to jump on this new business model. Adventure is sure to follow.

“It’s the application, stupid”

Google “cloud computing” for a leisurely stroll through more than 10 million returns – most of which are dedicated to technology issues such as: the relative merits of Amazon EC2, Go Grid et al; platform as a service (PaaS) ala Salesforce; or consideration of the impact Microsoft, IBM, and casts of other giants will have on life in the cloud. Alternatingly fascinating, speculative, opinionated, and informative, most of these articles miss a foundational fact: The Cloud is more than a set of territorial technologies. It is a cost-effective vehicle for delivering functionality to the business. It’s all about the application.

Well, just virtualize applications, and off they go, right? Isn’t virtualization a proven concept that has saved approximately zillions of dollars consolidating physical servers through virtual machines (VM)?

Yes and no

Servers and server applications are different animals. What works so well in virtualizing servers/machines, doesn’t help much with virtualizing server applications. So the concept of virtual appliances took hold in the world of VMware, XenServer, Microsoft HyperV and others.

Virtual appliances (VA) are marketed as a simplified approach to packaging applications for delivery from almost any virtual environment, running anywhere – datacenter, hosting provider, or on an infrastructure cloud. VAs package an application with all of its dependencies and just-enough-operating system (jeOS) to get the job done.

However, VAs have significant drawbacks that hobble the promised benefits of both virtualization and the cloud. To begin with, most tool sets to create and maintain VAs support only Linux. That limitation cuts out the broad universe of Windows and UNIX application stacks. Even more limiting, some tools require the use of a vendor’s own flavor of Linux, which introduces more complexity and acts as a barrier to adoption.

Until these shortcomings are addressed, the ability for an enterprise to realize the potential of virtualization and to leverage Cloud services will be severely limited.

Enter the Virtual Application Appliance (cue drum roll)

The solution for provisioning and deploying server-side applications in the Cloud – or anywhere else for that matter – turns out to be conceptually simple, technologically elegant, and dramatically effective in cost and execution. Extending the concept of VA to the application layer, AppZero architected the Virtual Application

Appliance (VAA) for instant provisioning of server-side applications in the Cloud.

VAA's package an application with all of its dependencies -- executable libraries, files/registry, configuration settings, network identity, and services -- with zero operating system components. VAA's assume the presence of a compatible OS on target machines (physical or virtual) and make zero change to the OS on which they run (Linux, Solaris, and Windows).

AppZero VAA's zero operating system (zeOS) approach to server application deployment and provisioning is the critical difference from VA's just-enough-OS (jeOS). And in the cloud, that difference directly translates into very significant savings in cost, time, and portability. As an industry pundit recently observed of AppZero VAA's, "point, click, and you're done."

VAA applications are no longer deployed, installed, and configured -- they are simply executed on any given server -- physical, virtual, or in the cloud. With no installation needed, or any change to the OS, VAA's run instantly and are completely portable -- from datacenter-to-datacenter-to-cloud-to-cloud-to ... anywhere. The result is that applications can be moved from one environment to another as quickly as business circumstances require. And that is precisely the attribute that is needed to realize the full benefit of virtualization.

What's the problem?

Surveying the landscape of application architectures most commonly deployed in a virtual or Cloud environment, it becomes apparent that most applications -- whether from ISVs or developed in house -- align with a 3-tiered Web/AppServer/Database architecture. This class of application may have been created using one of any number of environments -- from IIS/ASP.NET/SQL Server to Apache/Java/MySQL -- in hundreds of combinations. And within each architecture, at each layer -- the Web Server, App Server, and Database -- only specific versions of each actually support a given application.

The reality is complexity. An inventory of production server applications within a typical IT environment will reveal several versions of the front end combined with several versions of the App Server Layer, with several different App Servers in use, on top of several versions of multiple database engines. For example, 20% of the apps are on SQL Server, but only 1/2 of those are on the current ASP.Net and IIS. 80% of the Apps are Oracle based, but there are Weblogix, WebSphere, and Java AppServers behind different versions of IIS or Apache.

Orchestrating the delivery of these environments consumes a large portion of IT's resources. Time consuming and error prone, getting the configurations wrong remains the main cause for downtime.

Virtualization, the Cloud, and Virtual Appliances do not alter the fundamentals of this complexity. By contrast, AppZero's Virtual Application Appliance (VAA) approach is designed to confront this complexity head-on.

VAA's at work

The VAA approach decomposes these architectures into logical building blocks. Each version of a Web Server can be packaged as its own VAA. Likewise each flavor of App Server, each flavor of DB Engine -- and all of the different versions and patch levels of these components -- can be transformed into VAA's. Applications themselves reuse these component VAA's by simply pointing to them. For instance, a VAA that requires a certain version of Oracle includes a pointer to that Oracle VAA, which is now a file available on network storage. When an update to Oracle is ready, only that single Oracle VAA needs to be updated. Thereafter, any application VAA that references the Oracle VAA automatically picks up the update. Any thing a top tier VAA writes is isolated from the Oracle VAA, the AppServer VAA, and the WebServer VAA used to create that application.

VAA's are shielded from each other. This isolation enables applications that would otherwise require a dedicated host OS to run, to be executed on one host. Therefore, two or more applications --each using a different flavor of the AppServer, or different DB engines -- can be delivered from one host. This VAA attribute can drive server utilization, or consolidation densities of up to 66%.

Given that a VAA only requires a compatible instance of a running OS, applications can be readily moved -- from server to server (physical or virtual), cloud to cloud, and cloud to server -- with zero friction. If your application stack is based on Windows, this is in fact the only way to move your stack without breaking Microsoft licensing.

Because VAA's can leverage off the shelf VPN technology and do not alter the underlying OS on which they run, moving a VAA to the cloud leaves no data artifacts behind. VAA's zero footprint addresses a significant obstacle to leveraging the cloud -- security and compliance.

Not specific to the cloud, but none-the-less interesting, AppZero reports that use of reusable, componentized VAAs can eliminate up to 80% of the lifecycle costs associated with delivery of applications regardless of environment (physical, virtual, or cloud).

Instant cloud: add VAA's and run

AppZero's software creates, runs, and maintains VAAs in Linux, Solaris, and Windows environments -- widening the universe of

server applications that can be virtualized. Applications are instantly provisioned, pre-configured in the self-contained VAA - with zero operating system, and making no changes to the OS on target machines.

The attributes of AppZero's VAA approach to server-side application virtualization convey the following advantages in the cloud environment:

- An application packaged as a VAA can be moved from within an enterprise to the cloud, or from server to server, with zero friction. Movement is as simple as a file copy.
- The VAA arrives at a machine that is running a compatible instance of the OS it needs, and the application is instantly up and running.
- VAAs run in complete isolation from each other and from other applications, so they can safely co-exist on one server.
- Performance overhead is negligible. VAAs run at 97% of an application in its native environment. Server density and utilization can be dramatically improved.
- Because VAAs can leverage off-the-shelf VPN technology, and they don't alter the underlying OS on which they run, moving a VAA to the cloud will leave behind no data artifacts. This attribute addresses the issue of cloud security and compliance.
- VAA's complete portability and instant execution do away with cloud lock-in. Enterprises and ISVs can move applications to the cloud confident that they can be moved anywhere at any time, whether the reason is better pricing, favorable service terms, disaster recovery, or the failure of a cloud provider.
- In today's economic environment, many organizations are halting research and development efforts that require the purchase of capital equipment. VAAs in the cloud make it possible to continue these initiatives, with zero CAPEX and 100% ownership of their applications anywhere/anytime.

Enterprises moving to the cloud, ISVs, and providers of cloud service benefit:

- Enterprises moving to the cloud can easily experiment with moving applications to the cloud – and back again – with no cloud lock in. AppZero’s OS-free VAAs are self-contained entities that are completely portable – making them a risk-free on-ramp to, and an exit from, the cloud.
- ISVs with SaaS offerings can easily and economically package their applications as services for delivery from the cost-effective cloud.
- Cloud providers can economically offer services that are further up the value stack than simple infrastructure capacity. Cloud providers want instant application provisioning that is as fast and easy to use as the machine provisioning enabled by server virtualization – with similar isolation benefits. The server density that AppZero enables produces economies of scale that deliver on the promise of virtualization – with great cost savings. AppZero removes major obstacles to cloud adoption.

With apologies to Apple

AppZero’s vision is to make server-side application provisioning as simple for IT as getting an application for your iPhone. One click at Apple’s App Store equals an instantly running application. True, we’re talking mostly games and simple client-side applications here. But the “instant-ness” and frictionless qualities are analogous to AppZero’s VAA approach.

The almost universal adoption of server virtualization – most notably hypervisor technology – and the proven facility of VAs has paved the way for AppZero. People get it: VAA is the next wave of virtualization extending the benefits to server applications. Much like the cloud, it makes sense. And it works.

It’s early adopter time. But we’ve built it, and they are coming – destination cloud.

For more information, please contact AppZero at +1- 866-444-6670 (toll free) or +1-617-.820-5126 or visit: www.appzero.com.

To try a Virtual Application Appliance, visit: vaa.appzer.com.

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