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Review: Dell Cloud lets you have it your way

Dell's VMware-based cloud infrastructure provides all of the flexibility and complexity of the leading enterprise virtualization platform

IN BUSINESS, YOU GO WHERE YOUR CUSTOMERS are. If the kids want to listen to that rock and roll music, well, you put it on the jukebox. If the enterprise caretakers want to buy something from a cloud, then you bundle up your server boxes and call them a cloud. That's what Dell is doing. If time is too short to buy your Dell machines with a purchase order and take delivery, you can call up the company and it will start them up in its data center.

Dell's new cloud has a distinctly Dell flavor that's apparent from the beginning. The company has always been very close to Microsoft, and now it's even closer after the leveraged buyout. While other clouds charge a bit more for a Microsoft license, you get one to Windows Server 2008 R2 as part of the whole bundle. The Dell Cloud portal where you control your machines insists that you log in via Internet Explorer or Firefox. Chrome isn't even on the list.

The sales process is also very Dell. You can buy a machine by the hour, but the first options you see ask you to reserve a chunk of hardware for a month — much as you might if you were leasing a real slab of silicon. Dell's sales team is ready to help at any time. A "small" machine comes with one virtual CPU, 2GB of RAM, and 100GB of storage for a going rate of $125 a month, averaging about 17.5 cents an hour.

A medium instance — the size I tested — has four virtual CPUs, 8GB of RAM, and 400GB of storage for $500 a month. If you want to buy by the hour, it's 5.5 cents per virtual CPU per hour, 7 cents per gigabyte of RAM per hour, and 30 cents per gigabyte of storage per month. Once you reserve this hardware, you can then split it up into VMware virtual machines, just as if you purchased a real piece of hardware and installed VMware.

Virtualization and freedom

The biggest difference about Dell may be in the openness to the virtual machine part of the stack. All of the other major cloud companies take your money and give you root on some virtual machine. Then they pretend that much of the virtualization isn't there. The root password makes it look as if you're logging into your very own box, when in reality you're logging into a virtual machine that's sharing one piece of hardware with a bunch of other customers.

With Dell, you open up your Dell Cloud portal and find a VMware vApp, described by one Dell support engineer as the equivalent of a rack where you can stick your own virtual machines. To fill the virtual rack, you can draw on a few standard templates to create an F5 load balancer, a Windows Server 2008 R2 machine, or a Suse Linux 11 box, but of course you're also welcome to upload any VMware or OVF virtual machine.

There's also an option for starting up a machine with a particular ISO file — useful if you want to boot up a particular LiveCD version of Linux or any other OS. The portal even lets you pretend that you're accessing the CD/DVD drive on your machine though you're just uploading ISO files.

The ability to poke around at this level is liberating. You can mess around with a virtual machine on your desktop using VMware Workstation or VMware Fusion, then upload it to your virtual rack and start it up in the server farm. Most of the other clouds let you create images of your servers, but usually you end up doing the work to build the image on their machines.

The VMware software layer is also employed when you start communicating with your running machines. You can open up the SSH port if you like, but the simplest path is to use VMware's remote client. One screen on your portal shows a list of all of your virtual machines. If you click on one row, the VMware remote client will start up a connection in another window of your browser. This process was a bit glitchy for me, but I finally got it to work with Firefox. Once it started going, I was able to fiddle with the server from my desktop. The video wasn't as snappy, but that's the price of working across the country from the server.

To get a feel for the speed of Dell's cloud machines, I pushed a Windows Server 2008 R2 virtual machine through the DaCapo benchmarks, a set of Java routines that tests many common Java server applications. As with other virtual machines in other clouds, the results varied greatly. Many of the benchmarks were 50 to 100 percent faster than an Amazon High-CPU instance (14.5 cents per hour). But others, such as the image rendering tests (batik and sunflow), ran neck and neck.

These differences mean you *must* try out your application yourself to see if you're getting the performance you want. For instance, the lucene indexing routines were faster on the Dell medium than on the Amazon High-CPU box, but the searching tests ran in the same amount of time. The good news is you

can fiddle with the VMware machine on your desktop until you get the right combination of software packages and device routines to improve your performance.

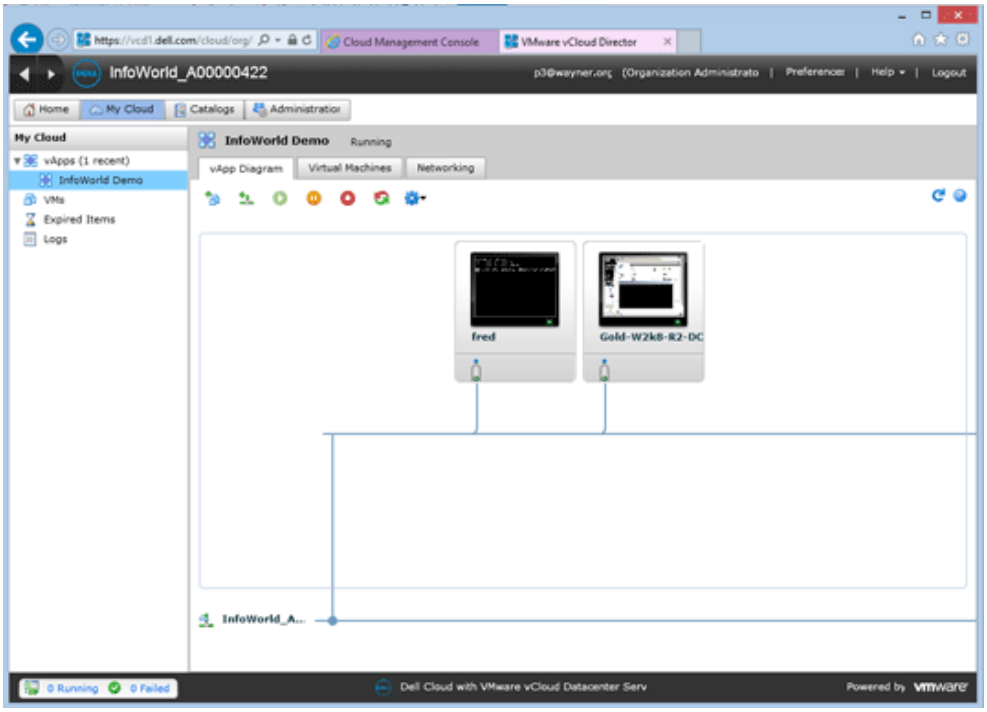
The network you know

Dell is also offering the same kind of transparency for the network configuration. You can choose between a number of different networking options for your VM once you get it running. You can configure internal and external networks, as well as reconfigure your virtual boxes in much the same way as you would your real servers. When you want your machines to speak to the outside, you can monkey around with NAT and DHCP to pass out the external IP addresses.

I'm a bit torn about this approach. Some of the other clouds sweep all of this under the rug and simply connect your box to the outside Internet. You get a root password and an IP address open to all. It's much easier to get rolling, but of course there's no flexibility.

Other clouds have dedicated internal and external networks but still hide the details. Dell's approach will be familar to anyone running the network in an office or an internal server farm because the steps are similar. The technologies are the same and you can use all of the flexibility if you want to do so. It may be a bit more work, but that's the price for the openness.

Dell, like the others, is not charging for data coming into the system, just for data leaving it (24 cents per gigabyte). Dell Cloud doesn't yet boast an elaborate collection of different regions and services, unlike many of the other clouds. Amazon, for instance, has at least 18 different lines on its data price sheet that govern how much it costs to move a gigabyte from point A to B.

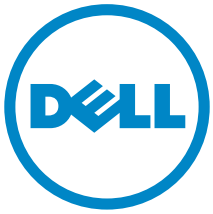


If you like VMware, you'll like Dell Cloud. Here, the Dell Cloud portal offers a visual depiction of the virtual machines you have running in your VMware vApp.

Dell Cloud isn't that complicated yet. But it will probably lose a bit of this simplicity as it grows into the space and starts offering different storage and database options. For now, Dell Cloud will be most attractive to IT staffs used to buying and configuring Dell or Windows machines in their own networks. Dell Cloud offers a wonderful amount of openness that will be familar to anyone who's set up a rack of virtual machines with VMware in their own server room.

The big advantage to moving to Dell's cloud, of course, is that Dell handles much of the grungy details like bolting machines into racks and hooking up the air conditioning. But everything else will seem just as familar as calling up your Dell representative, putting in an order, and installing the software you want. You just won't have to wait for FedEx to deliver and the server room staff to bolt it into a rack.

— *Peter Wayner*



For more information about Dell Cloud, please visit dell.com/dellcloudondemand