



IT Jungle

MojoPac Delivers Windows OS, Apps on a Thumb Drive

August 1, 2007

<http://www.itjungle.com/two/two080107-story03.html>

Alex Woodie

USB flash drives have become indispensable items for ferrying data to and from computers. Now, a startup called [RingCube Technologies](#) has come up with a way to shrink entire Windows operating systems images, complete with applications, onto the diminutive devices. With its new MojoPac Enterprise product, RingCube is enabling users to plug their personalized, virtualized Windows desktop into any available PC, providing benefits in the areas of application provisioning, data protection, and disaster preparedness.

RingCube got into the desktop virtualization business last fall, when it launched its first MojoPac product for consumers. MojoPac was initially designed so students and gamers could avoid lugging around their laptops--or even their towers, as some enthusiastic gamers have been known to do. The product was a hit, and won three awards within three months of the launch, which contributed to RingCube receiving \$12 million in venture funding.

Now RingCube is moving up the ladder into enterprise computing with Monday's launch of the MojoPac Enterprise Suite. While virtualization has already had a huge impact on how companies buy servers and server-based applications, virtualization has not had as big of an impact on the desktop. This is expected to change in the coming months and years, as desktop virtualization products increasingly blur the lines tying operating systems and applications to particular machines.

At first, it's a little bit difficult to believe that RingCube has actually achieved what it claims it has done--namely, de-coupling an entire desktop environment, including a fully configured and personalized version of Windows and all the applications running on it, and placing it on a \$50 USB thumb drive that can plug into practically any computer in the world to provide you an exact replica of your desktop back home, without running afoul of licensing or performance issues. But that is exactly what RingCube has done, assures the company's president and CEO, Shan Appajodu. And it has done it in a secure manner, to boot.

"We use the operating system on the physical computer as a utility," says Appajodu, whose company is based in the Silicon Valley burg of Santa Clara, California. "Under a normal usage scenario, first you pick a USB drive or an iPod, and you plug it into your PC, where it appears as a G drive, etc. You install the MojoPac virtual machine on that. Then, when the drive is installed or booted, it looks like new desktop environment, and in that new desktop workspace, you can install all your applications that you want to be portable. Once it's installed, it's now sitting in this MojoPac image. You can move to any PC and don't have to do any installation or configuration processes."

There are some limitations to what you can do with MojoPac. Due to the differences in latencies of USB 2.0 flash drives, RingCube recommends that people use portable hard disks, like an iPod, for the best performance. Also, the heft of Windows Vista poses a challenge even for some of today's fastest portable disks.

But the virtualization technology that MojoPac uses occupies only 30 MB of space, and incurs a performance penalty of less than one percent, according to Srihari Kumar, vice president of business development for RingCube. That compares very favorably to the desktop virtualization products from companies such as [VMware](#) and [Microsoft](#), which not only bring big performance penalties (often in the

neighborhood of 50 percent), but in many cases also require a separate, licensed copy of an operating system. "There is absolutely no performance degradation," Kumar says. "If you try to do the same thing with VMware, you won't be able to run a game." The product is also much more responsive than traditional emulation environments, such as [Citrix](#), which requires practically every input and output, including mouse movements, to go across the wire back to the server.

RingCube showed MojoPac to Microsoft, and the software giant didn't have any qualms with what RingCube was doing, Appajodu says. In fact, Microsoft has a similar technology up its sleeve in the form of the SoftGrid Application Virtualization, which is currently available only to Software Assurance customers as part of the Microsoft Desktop Optimization Pack. This product, which Microsoft acquired from Softricity last year, provides similar benefits and capabilities as MojoPac. Other vendors, such as [AppStream](#) and [Sentillion](#), also provide desktop virtualization capabilities.

MojoPac Enterprise Offering

RingCube expects the MojoPac Enterprise Suite to appeal to three groups of users, including home workers that telecommute, road warriors, and people who move between the corporate headquarters and branch offices.

For home workers, RingCube launched the MojoStation, which is a part of the MojoPac Enterprise Suite. MojoStation enables administrators to install a permanent virtual desktop on the home user's laptop or desktop machine. So instead of buying the home user a separate laptop or desktop that they will use for work, which will cost several thousands of dollars a year in ongoing maintenance costs, companies can configure a separate Windows image, complete with the applications they need and VPN access if necessary, that lives on their home PC.

The second product launched, MojoDrive, allows road warriors to leave their laptops at home. Instead, they bring along a USB flash drive or portable hard disk that contains their virtual Windows desktop. RingCube is also working on a third product in the MojoPac Enterprise Suite, called MojoNet, which lives on the Web and allows users to access their virtualized Windows environment securely over the Internet.

RingCube has addressed several security concerns with MojoPac. First, the entire MojoPac image is encrypted, preventing unauthorized access to the applications and data. Also, due to the isolation from the host machine, MojoPac virtual images have a degree of safety from potential problems on the host machines, such as viruses.

However, MojoPac images aren't completely isolated from host machines by default.

Administrators have the capability to allow or disallow the MojoPac image from accessing various services, including network access, printer services, access to hard drives or CD-ROM drives, the capability to cut and paste, and support for the print screen button. The USB ports can even be disabled with MojoPac--except for the one providing access to MojoStation, of course.

MojoPac images are managed in much the same way as any other remotely deployed PC.

RingCube provides a remote management console for administering images deployed in the field. Network authentication services are provided through integration with Microsoft's Active Directory. Support for Group Policy Objects will be added in a future release, Appajodu says. But MojoPac would simply be an exercise in cool virtualization if it didn't have real world benefits. According to Kumar, MojoPac provides benefits in three areas.

The first is the cost of application provisioning, which is typically equal to the cost of buying the hardware itself. By creating complete desktop environments into containers that can be sent across the wire or installed on cheap flash drives or portable hard disks, companies can save a lot of money in IT personnel and travel costs.

RingCube also cites security as another benefit for using RingCube. Fully encryption of the MojoPac environment helps prevent unauthorized use. RingCube also says it has partnered with a leading network access protection (NAP) vendor to provide health checks.

Because MojoPac environments are portable, they also provide benefits in the area of disaster recovery. Because users can simply plug the MojoDrive device into any available PC, or download it off the server (once MojoNet becomes available in the next couple of months), the Windows environment becomes almost impervious to hardware malfunctions.

The MojoPac Enterprise Suite is available now. MojoStation costs \$49 per user, while MojoDrive costs \$99 per user. For more information, visit www.ringcube.com.

