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Carriers Mix Cloud With On-Site Computing to Maximize Service, Cut Costs, Execs Say

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When Pitt Ohio went from using on-site servers exclusively to a mix of servers and public and private cloud offerings, it cut its number of servers to 20 from 130. The change eliminated the need for a full-time employee and reduced electricity costs for operating and cooling the machines, and the company saved a net of \$10,000 a year, said Scott Sullivan, chief financial officer for the less-than-truckload carrier.

Pitt Ohio uses a series of virtual machines, with its network sitting on a private cloud, to connect each of its 21 locations with the company's physical data center, housed at its corporate location. The company also uses the public cloud for some of its utilities, including spam filtering for e-mail and a fax that connects with Pitt Ohio's e-mail server.

"The benefit is leaving the storage and infrastructure costs on the provider and not having to have the IT talent to manage that," Sullivan said.

IT research firm Gartner Inc., based in Stamford, Conn., said that 21% of all virtualizable workloads — work that can be done on a virtualized server (meaning the cloud) — were running in a virtual machine (meaning a computer or other electronic device connected to the cloud) in 2008. In 2013, that figure rose to 68%. By 2016, it is expected to reach 84%.

A growing number of trucking companies are using a mix of on-site servers and clouds to maximize their computer systems, decrease expenses and ensure uninterrupted service.

Ben Garvin, senior director of technology solutions at managed IT provider enVista, said the number of businesses relying on cloud computing nationwide is increasing and will continue to grow. Cloud-based services will increase to \$31.9 billion in 2017 from \$18.3 billion in 2012, he said.

TMW Cloud Services, based in Cleveland, provides a public-cloud environment and secure hosting for fleets. The company, which is a unit of TMW Systems, has seen demand for its cloud- service offerings increase 50% year-over-year for the past four years, cloud services manager Jonathan Register said.

Phil Brotherton, vice president of the cloud solutions group at NetApp in Sunnyvale, Calif., said, "The current business environment requires chief information officers to transform their roles from data center builders and operators to brokers of services across a hybrid IT environment" that includes a mix of on-site and cloud use.

Mike Adams, director of product marketing for VMware, a software and cloud provider based in Palo Alto, Calif., said traditional mainframes don't provide IT departments with the tools, flexibility or support they need for the latest technologies or modern IT initiatives.

For example, AIT Worldwide Logistics Inc., in Itasca, Ill., uses a mix of private cloud, software as a service and virtualization software that enables companies to run multiple applications and operating systems simultaneously on an off-site single server.

AIT virtualized its servers by using technology from software and cloud providers VMware and NetApp.

"A while ago, we had a room full of servers. Now we have a quarter of a rack with servers that have massive amounts of memory," said Chris McMillin, AIT's director of information systems.

"You can't survive the cost of the old way of doing business; it is prohibitive. Any organization of any significant size is using virtualization," said Dave Fowler, vice president of marketing for INetU, a hybrid cloud-hosting provider based in Allentown, Pa. He added that most companies also are using the hybrid solution.

Mark Roberts, director of information technology and finance for Dupré Logistics, in Lafayette, La., said the use of private networks makes it irrelevant where the data are stored.

"None of this is anything more than electrons, and electrons move at the speed of light," Roberts said. "It really doesn't matter if I'm opening a document that is stored on a server three floors away or three continents away."

While public clouds offer an easy access point for users, they typically require an application to be written specifically for that cloud, Adams said. "This lack of flexibility and service delivery are some of the reasons for the use of server virtualization," he said.

It also can be why carriers turn to a private cloud — space on a server dedicated to one company within a cloud provider's data center.

Roberts said that, while much of the existing software in the cloud doesn't meet the company's dispatching needs, it does have a lot of advantages for functions that are germane to a lot of businesses, such as e-mail.

MinStar Transport, based in Eagan, Minn., is in the process of moving its e-mail system to the cloud and will use Microsoft Office 365.

"It will free up space on the server, and we'll have access to it anywhere," said Jody Farley, MinStar's director of safety and transportation.

"Recently on a Saturday night our server froze up, so all day Sunday we couldn't get our e-mail. If we had Office 365, we could have communicated still," Farley said.

MinStar also uses a variety of software as a service (SaaS) offerings in which software and the associated data are centrally hosted on the cloud.

"We use McLeod [which offers services via the cloud] for rendition billing, fuel reporting and document imaging. We have the drivers scan documents from their trucks. The information is automatically indexed in our system," Farley said.

SaaS can save operators time.

"The service is already up and running, and we can leverage what is already there rather than having to build our own infrastructure or develop our own in-house expertise," said Rich Farr, vice president of technology for C.R. England Inc., based in Salt Lake City.

The pricing of SaaS also can be attractive as an operating expense versus a capital expense.

"Companies are so strapped for cash, [that] any cash is valuable. The more we can switch to an operating cost and also offer increased efficiencies, they can free up cash flow," said Ryan Barnett, director of market development for XRS Corp., with headquarters in Eden Prairie, Minn.

The SaaS applications and services market will jump to \$67 billion in 2016 from \$27 billion in 2012, Garvin said.

Stephen Craig, a managing partner at enVista, based in Carmel, Ind., said SaaS and cloud-based solutions are gaining market share in the transportation sector, in part because they allow multiple parties to collaborate.

"You have the carrier, shipper, receiver; you may have a broker or even multiple carriers for multimodal moves. These tools can integrate a lot of different companies," he said.

Mike Ayersman, national sales manager of imaging for McLeod Software, said the company's SaaS helps users manage both paper and electronic documents, including photographs and voice files.

"The business office is heavy with information and often paper. Everything rolls downhill and ends up there," Ayersman said. "We don't want to just capture and document the document but identify where it belongs and place it in the right location for storage and ongoing retrieval."

McLeod also helps by allowing anyone to tap into information in a central location.

"Rather than pushing the document down the line with an e-mail, you have a closed link where you know exactly what happened in the process," Ayersman said.

EBE Technologies, based in East Moline, Ill., has on-premises and SaaS offerings to help carriers manage processes, documents and work-flow systems. It operates in the cloud but can pull from data in the back office to drive the applications, company President Larry Kerr said. He added that the company uses both Amazon and Hosting.com for their public cloud applications.

XRS created its SaaS offerings on Amazon's public cloud offering, Barnett said.

"We looked at building a data center for millions of dollars, but with Amazon, you simply swipe your credit card and start building," he said.

Using the public cloud allows companies to scale up quickly if necessary. That ability will be important when e-log mandates take effect, Barnett said.

"You'll have 3.1 million drivers that will need an electronic log. Today, we have 500,000," he said. "To get 2.5 million users hitting the infrastructure every day is a massive increase in scalability that we need."

Kerr said customers are getting more comfortable with the cloud.

"Before, a lot of them were apprehensive because of security," he said.

To minimize any service disruption, enVista stores data in three facilities, located in Pittsburgh, Indianapolis and Milwaukee.

"If something happens at one location or the connection is bogged down, users can be redirected to another location," Garvin said, adding that all of the enVista locations have generators and multiple power sources to minimize disruptions.

Ernie Betancourt, president of QuikQ, which uses the cloud to help carriers manage fuel purchases, said the Franklin, Tenn.-based company has one primary server in Nashville and a backup system in St. Louis, which it uses based on weather patterns.

"We wanted the backup in Atlanta because Atlanta is easy to get to, but Nashville and Atlanta have the same weather pattern, so we went to St. Louis," he said.

Fowler said reliability is less of an issue than it used to be, and today, most organizations guarantee 100% availability and will pay back customers for disruptions.

Betancourt said that, for Internet security, the common risks often are the most dangerous. "The biggest risk is the person that writes their password on the bottom of their keyboard or use their own birthday as a password," he said.