



City of Avondale Establishes Business Continuity and Protection for Critical Services with vCloud Air Disaster Recovery and vSphere

INDUSTRY

State and local government

LOCATION

Avondale, Arizona

KEY CHALLENGES

- Needed local resources for fast backup and recovery
- Wanted a separate regional disaster recovery environment
- Wanted a cloud-based solution that would easily integrate into existing infrastructure

SOLUTION

The city of Avondale leveraged its familiarity with VMware technology to develop a backup and disaster recovery solution with vCloud Air Disaster Recovery that meets its recovery point objectives.

BUSINESS BENEFITS

- An easy fit to its existing vSphere platform
- Off-premises environment enables rapid, affordable recovery and periodic testing with minimal administration of technical staff
- Cost-effective, reliable disaster recovery

The city of Avondale, a fast-growing community in the Phoenix, Arizona metropolitan area, is committed to making sure that critical health, safety, utility, and financial services are always available for its residents. After implementing a hybrid cloud solution based on VMware vSphere®, the city determined that it was positioned to take a major leap with its backup and disaster recovery strategy. Avondale had local backups for fast recovery but wanted a regionally separate disaster recovery site in case of a major catastrophic event.

City staff saw emerging infrastructure-as-a-service (IaaS) options as a means to allow Avondale to achieve its business resumption goals at a level of cost and ease unavailable in the past. Through its procurement process, Avondale selected VMware vCloud® Air™ Disaster Recovery over many other options. Working with VMware staff and VMware Solution Provider IT Partners, the city successfully designed, tested, and launched a new disaster recovery strategy in less than three months. As a result, Avondale has established an active backup environment in another state with replication. The city's IT staff can take advantage of built-in test features for routine background failover testing to validate business resumption capacity for business lines and auditors.

Incorporated in 1964, the city of Avondale has approximately 80,000 residents, including young families, retirees, and winter residents. Avondale is adjacent to Phoenix, Arizona and part of one of the largest metropolitan areas in the United States. The city's motto is "Aspiring. Achieving. Accelerating."

Avondale is a recreation and sports mecca, providing acres of parks for hiking and outdoor activities. The Randall McDaniel Sports Complex serves as a popular site for state and regional sporting tournaments. Avondale is also home to the Phoenix International Raceway where, twice a year, hundreds of thousands of visitors watch NASCAR races. Nearby University of Phoenix Stadium is the home playing field for the NFL Arizona Cardinals, and the NHL Arizona Coyotes call the Gila River Arena home.



City of Avondale website



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- Rob Lloyd,
Chief Information Officer,
City of Avondale

VMWARE FOOTPRINT

- VMware vCloud Air Disaster Recovery
- VMware vSphere

APPLICATIONS VIRTUALIZED

- Microsoft SharePoint
- Microsoft SQL Server

PLATFORM

- Microsoft operating systems
- FlexPod environment from Cisco and NetApp
- Dell PCs

Avondale’s municipal government maintains a budget of USD \$180 million with over 500 employees. The 16-person IT department supports the community by using technology to engage, innovate, and provide strong municipal services to make the city responsive, efficient, and secure.

As a result of its efforts, Avondale has won several national awards for utility management, public engagement, and innovation. Avondale ranked in the top 10 in the Digital Cities of America awards for four consecutive years and earned first place in 2013 and 2014 for its comprehensive use of technology. Avondale earned a Digital Government Achievement Award in 2013 and was placed one of the 25 Doers, Dreamers, and Drivers in Government Technology in 2015.

The Challenge

A few years ago, Avondale moved to a hybrid cloud IT environment, using vSphere to build an internal cloud computing infrastructure on a FlexPod environment that integrates server, storage, and networking components from Cisco and NetApp. This strategy allows the IT organization to expand to meet the city’s needs while running fewer servers, reducing capital and operating costs.

After deploying the FlexPod environment, the IT department recognized that it was positioned to improve the city’s disaster recovery coverage in ways previously unattainable. “We decided that the cloud would be the best option for disaster recovery because it would give the city access to a virtual computing environment if a disaster occurred,” says Chief Information Officer (CIO) Rob Lloyd. The Avondale team wanted a mature solution able to meet its objectives for cost with minimal overhead and tightly integrated with its existing environment.

The Solution

After considering several cloud service providers, Avondale chose vCloud Air Disaster Recovery over five competitors. Familiarity and ease of use were key considerations: Avondale had been highly successful with VMware and saw the ability to absorb, use, and maintain the solution as long-term advantages. “We reached our goal of 70 percent virtualization within a year of using vSphere. VMware continuously advances its technology and provides options that allow us to build onto its solutions. As a CIO, that’s critical when looking at strategic investments,” Lloyd says.

VMware documentation, training, and support have made it easy for the IT staff to learn new skills. “The tools are easy and the functionality is readily accessible,” says Aaron Favata, IT Systems Engineer at the city. “VMware provides an excellent solution for disaster recovery and offers a natural path to expand use of the platform. The user community and available resources have been superior, and we’ve always been impressed with VMware support.”

Avondale selected VMware and IT Partners (a VMware Solution Provider) to develop a disaster recovery solution. After only a two-month test pilot, the solution went live. “It was a quick process because of the staff’s familiarity with VMware,” says Lloyd. “We had vCloud Air fully up and running for all our critical systems in just a couple months.”

Enabling Business Continuity

The city’s IT organization uses VMware, Microsoft, and Cisco solutions to provide applications and services for Avondale’s municipal government and community. The technology stack is made up of nearly 30 service components.

Avondale used vCloud Air Disaster Recovery to build a cloud-based failover environment from which it runs 15 of its most critical business applications, including financial, human resources, water and wastewater utilities, traffic, SharePoint, databases, and web servers.

Deploying the solution was a straightforward process. Working with the vCloud Air support team and using IT Partners for local engineering support, the IT staff transitioned services over to the new environment quickly. "It took probably a week or so to get the services over to vCloud and ensure they were working correctly," says Favata.

Leveraging Built-in Failover Testing

Failover and failback operations are crucial to the success of disaster planning. Avondale wanted to be able to conduct affordable, periodic testing of its cloud-based environment with minimal administrative overhead.

"Our goal is to test at least twice a year," says Lloyd. "vCloud Air Disaster Recovery provides unlimited failover testing, which makes it easy. The test routine is built-in and I can see it working. Now that we're on vCloud Air Disaster Recovery, we'll be able to assure the city that we remember what we looked like before a disaster happens and that we have the ability to get back into running mode as quickly as possible." He adds, "At the end of the project, the team had to show a clean cut-over of a key internal system running on vCloud with a series of business tasks performed successfully. It hit all targets."

Meeting Recovery Point Objectives

For disaster recovery, Avondale set a three-hour recovery point objective (RPO) for important services. "For standard services, we've set a 24-hour RPO," Lloyd explains. "For critical services, it's immediate to three hours, depending on the system. Of course, we want as short a recovery time as possible. Traditional approaches called for expensive cold, warm, and/or hot sites, or a longer time to rebuild and environment. vCloud Air Disaster Recovery closes both physical and time gaps."

Furthermore, the city has built-in retention objectives to meet government policies and laws for records management. Depending on the type of information, the range for keeping records can span from 1 to 30 years, or forever for capital crimes. The IT team decided that a nightly replication cycle to local and semilocal recovery points would enable them to recover copies quickly.

"We create nightly snapshots locally from our data center and weekly and monthly copies for local offsite backup," explains Favata. "For regional separation, whatever is replicated to our local data center is also replicated nightly to a different state location using vCloud technology. We can increment that to near-real time as needed. That means we can recover critical municipal services, even if there is a catastrophe that causes major impairments in the region."

Business Benefits

"We wanted to do a better job with fast recovery and business resumption," says Lloyd. "When we started looking at solutions, some providers were more rudimentary than we expected and others were too expensive. VMware solutions are priced realistically. With VMware for disaster recovery, we finally have a comfortable level of assurance at a reasonable price. And we can take advantage of VMware technology to bring solutions in and out of the cloud easily."

Now that vCloud Air Disaster Recovery is set up, the solution mostly drives itself," says Favata. "I check daily to make sure all the servers are replicated, but it really hasn't added any time to my work."

Lloyd comments: "Ten to 15 years ago, the IT environment looked much different. We had to have a server for everything, which took time to procure and provision. Using VMware solutions simplifies our work and makes us more nimble and responsive to stakeholders. We've been able to push the envelope in this area because of VMware's offerings and personnel. I don't use the term 'vendor partner' often, but VMware is definitely in that category for us."

Looking Ahead

Avondale is currently implementing VMware NSX™ to take advantage of the management and security advantages of software-defined networking. The city's networking team is piloting NSX as a network virtualization platform to improve perimeter management and add security layers inside the organization to increase protection. "We want to manage our network in a way that's more flexible, but also more secure and without needing as much hardware and personnel time," says Lloyd. "That's where we believe NSX really provides value. VMware is creating a strong ecosystem that will give us a multitude of options as IaaS and platform-as-a-service (PaaS) landscapes continue to change."

Avondale also plans to look at application virtualization and attaching virtual computers on the cloud to connect within its vCloud environment. "This would assure a consistent level of end-point access in scenarios when a disaster would limit staff's access to desktop and laptop computers," says Lloyd. "One day, it may be a mainstream method, such as for telecommuting and light-duty needs."

