

Ensuring Another 45 years of Association Best Practices & Thought Leadership

AMC is a management company chartered and accredited by the Association Management Company Institute, Association Management Center (AMC) and was founded in 1974 by Art and Dagny Engle. For more than 40 years, AMC has built a reputation of caring, trust, and long-term commitment among their association partners—making us a standout among association management companies.

They have been dedicated to furthering their client-partner causes through collaboration, strategic leadership and vision. That passion has allowed them to develop long-term relationships that create mutual success and growth for their dozens of Healthcare, Professional and Trade Associations.

Problem Statement

Association Management Center (AMC) was running its association systems (Personify and Financial Services) on an on-premise server hardware infrastructure. Maintaining the physical hardware environment along with the associated applications created both significant risks and constrains that prevented AMC from achieving the desired scalability, access, enablement, security and business continuity that the rapidly growing business required. Simple backups to disks was no longer enough to meet both theirs and their client-partner portfolio requirements.

Approach

AMC developed a 2018 plan to leverage Microsoft Cloud & Office 365 collaboration capabilities to replace legacy file shares. Microsoft Azure was leveraged to run the required server workloads supporting both current and future association systems.

Cloud 9 Infosystems was uniquely positioned to help AMC realize their full potential by utilizing a public cloud approach. As a gold level Microsoft Cloud partner with years of experience migrating organizations to the Microsoft Cloud and as a Tier 1 Microsoft Cloud Solution Provider (CSP) we were able to leverage industry and Microsoft specific best practices for designing, implementing and delivering a best of breed solution against their unique business requirements.

Cloud 9 designed and recommended two separate work streams. Using a combination Software as a Service (Office 365) and Infrastructure as a Service (Azure) the solution would both solve their near-term and longer-term objectives. Additionally, the solution was designed so that the work in one stream would not impact work in the other streams allowing them to be done in parallel and therefore allowing AMC to realize the benefits of the solution more quickly.

Design Drivers

- **Component/Role Recovery:** The design facilitates recovery of an individual component of a workload. It includes scripts and processes for recovery of each individual component (e.g. web, app, SQL).
- **Cross Region Network Redundancy** – In lieu of automated region failover, the design provides for redundancy of the network services across regions. Therefore, in the event of an extended region

failure, AMC will be in a position to redeploy services to the network in place at the secondary region.

- **Geographic Redundancy of Data** – Virtual Machine (VM) images, database backups, and files will leverage geographically redundant/read access storage to minimize the risk of data loss and facilitate the redeployment of services to the secondary Azure region.
- **Component Availability Minimum of 99.9 Percent** – 99.9 percent component uptime has been identified as the acceptable availability minimum for this design. This should provide a stable environment without high Azure usage cost.
- **Security** – The design includes Microsoft best practices around security policy and configuration.
- **Minimal Business Interruption** – The design will support a migration that can be done without a significant impact to normal AMC operations.

Design

AMC will leverage a hybrid cloud environment for an extended period, where the AMC network is securely connected to the Microsoft Azure public cloud platform. This will provide the capability to migrate application workloads over time without impacting existing business.

Cloud 9 suggested that the work be divided into two streams, one for Software as a Services (SaaS) provided capabilities and one for Infrastructure as a Services (IaaS).

SaaS Stream

Office 365 Environment Optimization

Our approach was to leverage legacy and Office 365 tools to identify and remediate any issues with the current configuration and then work with AMC to implement features and processes to improve and maintain the current environment.

Office 365 File Services Design

In this phase we analyzed team information sharing requirements to design Project Site template for SharePoint Online, with the goal of providing AMC teams to quickly spin up sites for each customer and provide an area for securely sharing documents, implement any work flows etc.

IaaS Stream

Microsoft Azure Foundation Design

In this phase we developed and implemented the detailed design and configuration of the Azure resources needed to run the workloads and meet service requirements. The design supports the requirements laid out by AMC and focuses on optimizing on-going operations. All infrastructure components were deployed using reusable code (scripts, JSON templates).

Business Continuity with Microsoft Azure

The AMC Azure infrastructure is designed to provide a minimum of 99.9 percent component up-time and meeting a service RPO of 30 minutes and RTO of 2 hours. Leveraging the following features:

- Azure Backup and Restore
- RAGRS Storage Accounts – SQL Backups, Custom VM Images
- VM Scale Sets for critical workloads

Challenges

A big challenge for this migration was to ensure high availability for critical workload VMs using Virtual Machine Scale Sets (VMSS). The key requirements for scale sets were:

- Automate scaling based on server metrics
- Optimized deployment process (Regular ongoing deployments to select sites)
- Support 81 IIS sites on their web server
- Requirement to have the ability to add new sites or change URL's as required

The approach needed for deploying each instance of VMSS was:

- Join each instance to the domain after configuring the DNS servers
- Configure the File Share access for each instance
- Enable IIS role for each instance
- The Shared Configuration files that we exported from the web server needs to be imported and configured on each instance
- SSL certificates need to be imported from a key vault and installed on the server for all the sites.

The challenge was automating this entire process to run in a sequence on each instance, while building on prior tasks without disrupting setup that was configured in the previous steps. Since there was no out of the box solution available, Cloud 9 worked with Microsoft to identify a best practices approach to resolve this problem.

Ultimately, Cloud 9 leveraged PowerShell Startup Scripts, Custom Extension Scripts and Desired State Configuration Scripts to overcome this challenge.

Conclusion

Despite multiple challenges, Cloud 9 was able to successfully migrate AMC to O365 and Azure on-time and under budget. The resulting solution allowed the entire AMC family to realize the benefits from this transition to Microsoft O365 and Azure. As a result, significant improvements have been realized in the following areas:

- Performance: Better system responsiveness due to network and computing capacity provided by Azure.
- Reliability: Storage redundancy and VM replication has given AMC comfort that no data will be lost in the event of an outage.
- Scalability: Automated scaling of critical workloads like the web and application servers using VM Scale sets has given AMC the power to increase compute power at will.
- Security: Microsoft recommended security practices gives AMC users the peace of mind that their data is safe in the cloud.
- Operations: Automation tasks for VM Scale Sets, VM Backups, SQL Backups, Starting and Stopping VMs in a specified order and on a schedule. Scripts for the redeployment of the entire environment are provided to AMC. These tasks ensure that resources are being utilized efficiently and costs are controlled. AMC can monitor their environment using the Azure Portal dashboards and Cloud 9 has provided the tools to quickly complete operational tasks.