Cloud transformation

Diversified manufacturer migrates to AWS for better cost and flexibility

aws partner network

Advanced

Consulting Partner

- MSP Partner
- Solution Provider
- Public Sector Partner
- Networking Competency
- Amazon EC2 for Microsoft Windows Server

Challenges

- Required improved operational efficiencies by migrating web applications from on-premises to AWS
- Lacked a modernized, cost-optimized, and scalable architecture to handle future growth
- Wanted control over security of infrastructure and environment

Solutions

- Lumen® Cloud Application Manager for Amazon Web Services (AWS)
- Lumen® Managed Services Anywhere
- Lumen® Advanced Analytics
- Lumen® Secure Log Monitoring

AWS Solution Set

- AWS Control Tower
- AWS Cost Explorer
- AWS Route 53
- AWS CloudFront
- AWS Transit Gateway
- AWS Elastic Beanstalk
- AWS Backup Service
- AWS CloudTrail
- AWS Certificate Manager
- AWS Key Management Service
- AWS Single Sign On

Results

- Significant cost savings by reducing the number of global data center locations
- Increased uptime in AWS environment
- Streamlined operations
- Multi-AZ deployment achieved a high-performance and scalable environment in the AWS cloud
- Increased system performance, capacity management, and asset cost control
- Security, compliance, and risk management protocols implemented at every level of the project

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Challenge

Manage AWS transition and optimize operations

In an effort to gain some operational efficiencies, this global manufacturer migrated a subset of its brand and marketing applications to Amazon Web Services (AWS). Following the success of this transition, the company decided to migrate its full suite of web applications to the cloud. They needed a partner who could help guide them through their digital transformation.

The key focus was on operations, security, and compliance. The company needed a modernized and cost-optimized architecture with the flexibility to scale up and scale down quickly. With about 200 websites in the initial scope of this phase of transformation, they needed more control over the security of their infrastructure and environment. While the scope of this phase was largely limited to web applications, the architecture needed to be robust and flexible to handle more applications in the future without a complete redesign.

Solution

Orchestrate a cloud architecture with Lumen® Cloud Application Manager

As an APN Advanced Consulting Partner, Lumen helped design and implement a robust, secure and scalable environment in the AWS cloud. Lumen utilizes its hybrid cloud management platform, Cloud Application Manager (CAM) and Managed Services Anywhere (MSA), to increase visibility, consistency and control of hundreds of web applications moved into AWS. The transformation includes a sophisticated orchestration of the AWS environment and integration with Lumen managed services.

A multi-account strategy was adopted with a focus on security, compliance, and risk management best practices. The architecture utilizes AWS Control Tower to control governance and manage accounts while access to services within the sub-accounts was restricted using Service Control Policies. A resource tagging strategy adds a layer of governance and simplifies cost reporting. AWS Cost Explorer tracks and allocates AWS costs to the appropriate internal cost centers. All output is integrated into Lumen Advanced Analytics tools in Cloud Application Manager to complete the chargeback processes to the customer's internal units.

At the network level, AWS Route 53 acts as an external DNS provider. AWS CloudFront with AWS WAF, as the web application firewall, is the first line of security defense. All ingress and egress traffic to and from AWS is routed through a Palo Alto firewall appliance for Layer 7 inspection before being passed to the destination. Traffic between VPCs is also routed through a Palo Alto firewall. VPCs connect via AWS Transit Gateway. Each VPC has at least one subnet in at least two availability zones to allow for high availability.

Different tiers of the same application, (i.e. network security, web, and databases) operate in separate VPCs. Each resource is assigned to at least one security group. Application-specific security groups are attached to only the application components necessary for functionality. All security groups follow a least privilege model, only allowing ports necessary for the server or application function.

At the resource level, most web applications are deployed via AWS Elastic Beanstalk and the on-premise databases now reside in RDS. A small number of applications running on custom code that required EC2 builds are automated and orchestrated by Cloud Application Manager. AWS Backup service is used to backup EC2 based VMs and RDS databases. For auditability, AWS CloudTrail, S3 Access logs, RDS logs, CloudFront Access logs and VPC Flow logs are monitored by Lumen Secure Log Monitoring (SLM) service for threat intelligence and ingested into a Splunk instance.

The solution focused on security, compliance, and risk management best practices. Lumen Advanced Analytics tools analyze the data collected for tracking and allocating AWS costs to the appropriate cost centers. Lumen Cloud Application Manager orchestrates custom applications to run in the cloud. Lumen Secure Log Monitoring (SLM) service for threat intelligence monitors access logs and provides an audit trail for incidents.

Results and future plans

Added security and resilience plus more cost savings

The holistic migration solution increases uptime and flexibility and optimizes costs after the brand and marketing web applications were moved from on-premises to AWS. Added site redundancies and the ability to self-heal provides protection from unexpected failures. A complete cloud services and cloud management portfolio delivered low-latency access to virtually endless AWS resources paired with dynamic, network-aware orchestration.

Lumen adopted AWS Security Best Practices throughout the company's migration to AWS. A strong identity foundation was established with least privilege and separation of duties enforced at all layers from the account level to resource level. Also, real-time environment monitoring and traceability was enabled with the use of resource tagging and the integration of AWS native audit logs into Lumen CAM and MSA tools. Finally, data was protected by enabling encryption at rest and in transit.

Ultimately, the company was able to shut down one of their global data center locations, saving significant costs.

Lumen Solution Set

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