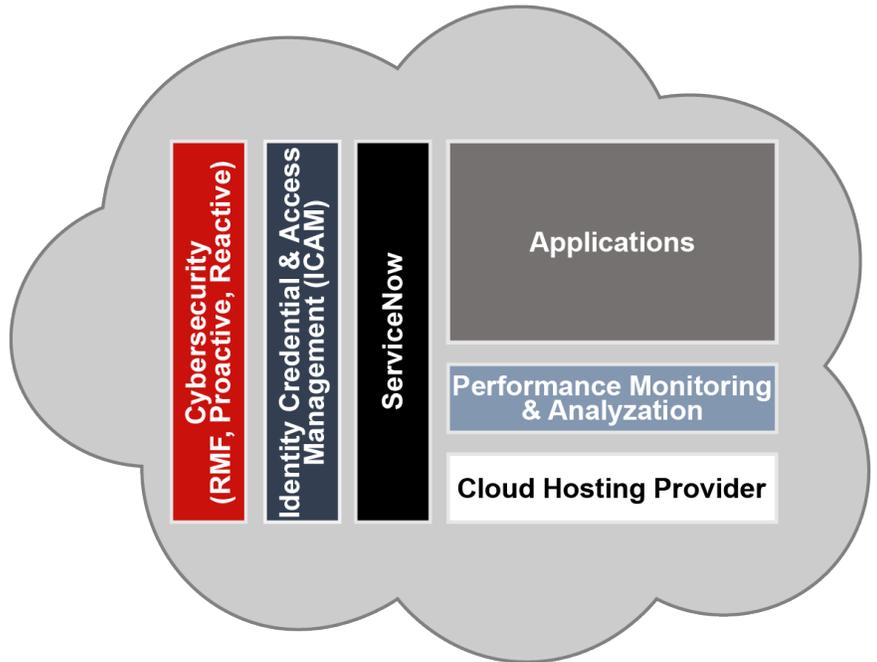# CDO TECHNOLOGIES
AIR FORCE HR CLOUD INITIATIVE

CHALLENGE

Provide Infrastructure-as-a-Service (IaaS) cloud capabilities as defined in the DoD Cloud Computing SRG. The cloud environment shall meet all current and future DoD and Air Force requirements for IL2 and IL4. The services provide Air Force HR the ability to accelerate IT delivery, efficiency, and innovation as an Enterprise. Moving to the cloud will enable A1 to increase secure information sharing and collaboration, enhance mission effectiveness, and decrease systems costs by using cloud services.

SOLUTION

CDO Technologies provides Software-as-a-Service (SaaS) and Infrastructure-as-a-Service (IaaS) for the Air Force Personnel Operations Agency (AFPOA) A1 Virtual Data Center (A1VDC), hosted in the Amazon Web Services (AWS) GovCloud IL2 and IL4 environments. The A1VDC provides fully managed services to Air Force A1 customers, allowing hosting of Web Sites, Web Services CMR, and providing access to multiple GovCloud-approved third-party SaaS Marketplace solutions. Additionally, it provides Cloud Engineers control over Runtime, Middleware, O/S, Virtualization, Server, Storage, and Network-related technologies. We provide application support, migration services, application and environmental security through Risk Management Framework (RMF) practices, network services, and Identity Credential and Access Management (ICAM) as part of the platform for the A1VDC.

Cybersecurity (RMF, Proactive, Reactive) · Identity Credential & Access Management (ICAM) · ServiceNow · Applications · Performance Monitoring & Analyzation · Cloud Hosting Provider

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CYBERSECURITY
Risk Management Framework
Proactive & Reactive Cyber Defense

Our RMF team acquired and maintains three approved enclave ATOs for the A1VDC. Supporting the ATO efforts of 34 apps, our ATOs provide inheritance and Cloud support via eMASS. CDO was selected to test the ACC Fast Track ATO process, providing the first system to undergo the landmark process.

Our Splunk implementation allows our Cybersecurity and Operations teams to monitor, analyze, and verify priority threats within the architecture. This enables a rapid response to security- and infrastructure-related events.

ICAM
Identity Credential &
Access Management

We were charged with reducing operational risk by replacing legacy username and password systems and being CAC-compliant. This led to the selection and implementation of Okta within the A1VDC. The solution enables multi-factor authentication (RSA, Okta Verify, CAC), mobile capability, and single-sign on (SSO), as well as complete availability and performance monitoring.

The service is currently providing access to 500K DoD Airmen and Civilian employees. The solution is provided as an Identity-as-a-Service (IDaaS) and is ready for applications to integrate with for their authentication needs.

SERVICENOW
IT Workflow
Implementation & Development

CDO Technologies is a Managed Service Provider (MSP) Partner of ServiceNow. Our team has product implementation expertise in ITSM, ITOM, ITBM, Platform, Service Portal, Performance Analytics, Project Portfolio Suite, Customer Service Management, and Asset Management.

Our team consolidated 18 existing ServiceNow instances into a unified Enterprise Cloud Solution within the A1VDC's AWS IL4 environment. The system supports the Air Force A1 and its IT Service Desk, providing a Self-Service Portal and having processed 175K+ incidents and ingested 180K+ calls.

APPLICATION MIGRATIONS

Migrating On-Premise Applications to the Amazon Web Services (AWS) Impact Level 4 (IL4) GovCloud

MyVector & MyCAA

MyVector is a cornerstone in providing career management for the United States Air Force Civil Service, which is imperative to the growth and capability of its force. Additionally, MyCAA empowers the career development of military spouses ensuring an ever-growing community.

In July 2018, the datacenter supporting MyVector and MyCAA (and six other applications) experienced a critical failure, with inability to recover. An emergency migration to the A1VDC began for the mission-essential applications. By the end of July, our team completed a copy of 1TB of data using an AWS Snowball. All eight applications completed their migrations in early August 2018, less than one month after the datacenter failure occurred.

LeaveWeb

Vital to the health and well-being of the United States Air Force Active Duty force, the LeaveWeb application provides all 320K+ USAF Active Duty members with the ability to submit, review, and approve personal time off.

Prior to migration, we installed and configured tools in the on-premise environment, allowing our developers to identify existing database issues; one of which was a series of query call sets executing in 24 minutes. Upon completion of the Cloud Migration, our Database Team was able to remediate and optimize the series of query call sets to execute in just 17 seconds. This, along with other optimizations performed, reduced the operational cost of the application by approximately 90%.

Military Libraries

Combat Related Special Compensation (CRSC), is a program created for military retirees with combat-related disabilities. As an underlying system of CRSC, Military Libraries provides insight into the specific benefits provided to the combat-related disabled retirees.

Planning for a smooth transition is an exceptionally important part of successful Application Migrations. As part of all migrations, we provide a flexible Agile workflow to the application owners. This workflow contains eight (8) major phases (and 30+ sub-phases) that an application must complete in order to migrate to the Cloud. Adhering to the pre-designed Agile workflow, the Military Libraries / CRSC application was migrated in August 2019 with zero outstanding issues.


PERFORMANCE MONITORING & ANALYZATION

Reduce Cloud Cost-to-Consumer through Monitoring, Analysis, and Optimization

Monitoring and Analyzation of a Cloud environment are essential for success. Our team minimizes the cost to the customer by configuring and optimizing the environment to meet the requirements of an application.

Amazon CloudWatch allows our Cloud Operations team to review metrics such as Resource Utilization, Network I/O, and System Health Checks. Analyzing historical metrics provides data to support server resource optimization resulting in a cost-to-consumer reduction. AppDynamics empowers our teams with Application Performance Management, allowing them to diagnose Application-, Web-, and Database-level issues such as availability and performance. Leveraging data provided by AppDynamics, we identified and participated in a resolution effort for a DISA Internet Access Point degradation, resulting in an 80% improvement in data migration speeds. Additionally, leveraging the capabilities of ServiceNow and its integration with AWS, our team created dashboards to monitor the A1VDC environment cost. This enables a cost-visualization as optimizations are put in place, ensuring that changes have a positive impact for the customer.
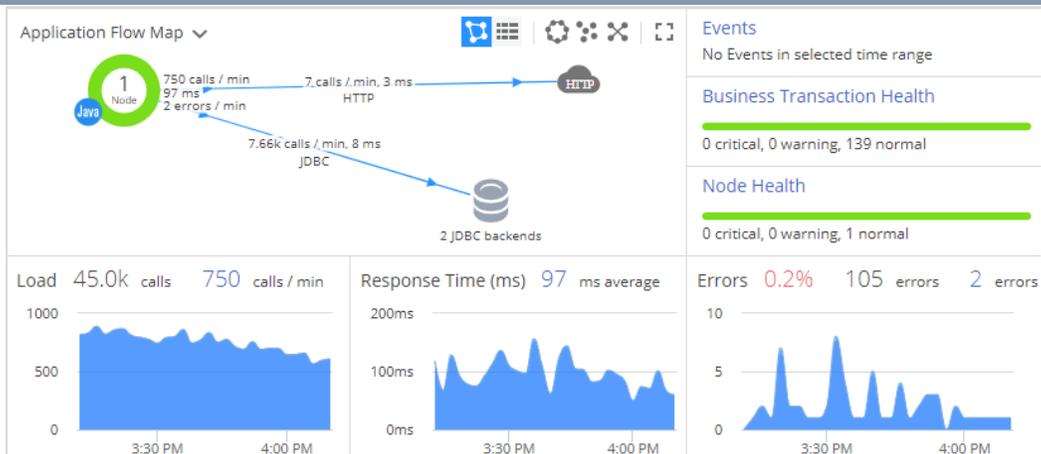
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