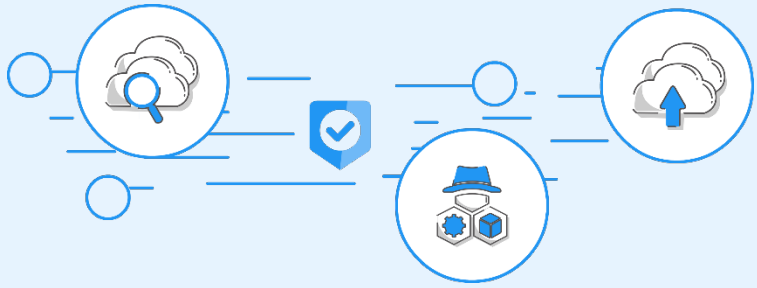
CloudFabrix

AWS Resource and Cost Optimization

Instances | Services | Storage | Reports | Automation



Business Profile

Media Firm US Based	**$5B+** Revenue
1000+ AWS Resources	**150+** Applications

Business Impact

- Budget overrun by 40%
- Operational expenses increased by 200%
- Critical projects backlogged
- Hidden security and compliance risks

Technical Challenges

- Large and aging AWS environment with maintained by remote admins and users.
- Environment has numerous resources, subnets, snapshots, VPCs in 6 regions.
- No documentation or process for resources
- Hard to identify resource ownership
- Inconsistent IP allocation scheme
- Obsolete AMIs. Old VMs. Many snapshots
- Lack of full automation.

Business Context

A leading US based media firm (customer) has recently acquired ownership of AWS environment from its parent company and is chartered with optimizing & evolving their cloud implementation to meet their business needs. Specifically, customer wanted to:

- Reduce resource sprawl and eliminate unused/under-utilized resources
- Reduce spend and stay within allocated corporate budgets
- Extend corporate specific IT controls to AWS workloads
- Ensure resources are annotated and attributable to projects or groups
- Introduce automation to perform ongoing checks and optimizations.

Customer is in need of an effective Governance and Automation that establishes security posture, provides confidence and robust security controls similar to on-premises and further offers automation to reduce AWS operations spend.

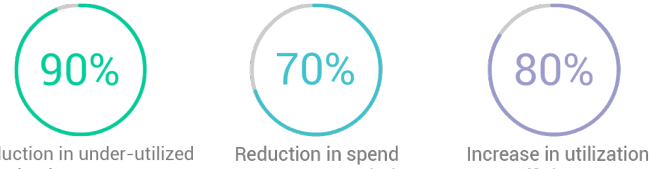
Solution

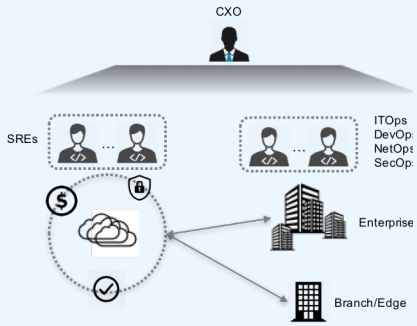
cfxHorizons provides comprehensive AWS Resource and Cost Optimization solution, which consists of three major components: 1) Multi-source data ingestion & monitoring 2) Real-time insights and intelligence and 3) Automation to correct and remediate. cfxHorizons continuously gathered data from multiple AWS services like EC2, Snapshots, VPC, Storage, CloudFront, Data transfer, Billing etc. and presented advanced analytics and optimization recommendations. cfxHorizen also enabled automation by deploying Lambda functions, instantiating CloudFormation templates and triggering workflows to track and auto-correct violations. With this solution, customer achieved:

- Clear and objective view of current resource utilization baseline
- Uncovered old, unused or under-utilized resources
- Identified top spend areas, patterns and presented with mitigation options
- Candidates for EC2 reserve instances were identified along with potential savings
- Automated optimization checks and integrations with AWS Lambda, CloudWatch alerts and change management systems to ensure ongoing optimal environment.

By implementing the recommendations and with continuous governance solution, customer realized **90% reduction** in unused/under-utilized resources.

Key Benefits



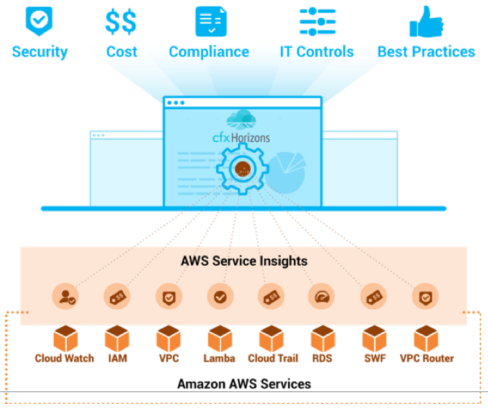


"We have been on AWS for few years now, and all our video streaming is delivered to our US based customers from AWS. Lately, it has become a challenge to manage our environment, with the growing number of resources, apps and workloads. It all adds up and our expenses crossed our budgets. We were looking for an effective solution that can quickly help us to get back on track and allow us to have oversight and automation in place to continuously optimize our environment.

We are very pleased with the way cfxHorizon quickly spotted many critical blind spots in our environment and provided recommendations to change our EC2 instance procurement approach. We got rid of many unnecessary resources, and happy to see cost savings over time. Now our environment is lean, agile, and easy to manage." **-- VP, Cloud & IT**

Success Path to Fully Optimized AWS Environment

1) Define & Monitor: cfxHorizons Customer's business objective i.e Outcome of having "AWS Resource and Cost Optimization" is selected to drive data source selection, Rules and Insights that will be deployed to measure, track and make AWS environment optimal. Analytics cover various operational dimensions like **Utilization, Configuration, Capacity**, and key AWS service dimensions like **EC2, Snapshots, Database, S3, EBS, CloudFront** etc. This Outcome can be customized to include any corporate budget controls or per department or group related usage policies. c



cfxHorizen **collects data** from AWS resources and services to establish utilization levels using key data points covering instances, snapshots, storage resources etc. cfxHorizons has native **plugins** to all AWS services to programmatically gather, model and analyze all key data required for **monitoring** and continuously governing target AWS environment. cfxHorzons also has extensible data ingestion architecture to feed any external financial data into the system.

Data **retention** periods range from 1-year to 5-years, and **periodicity** is configurable to sub-minute intervals. From cost point of view, cfxHorizons ingests **billing** data and correlates with resource utilization to spot wasted spend and identify optimization opportunities.

2) Govern & Analyze: After data collection and monitoring, cfxHorizons starts governance and provides **optimization index** for entire environment. Index or score ranges between 0 (worst) to 100 (best), and can be broken down by account, region, VPC or service-type. From cost perspective, analytics identify **spending trends**, show top-n most expensive resources/services across given period, including reporting based on groups/tags etc. cfxHorizons also provides issues summary and detailed **list of rule violations**, offending resources and **recommendations** to correct the situation. Insights cover key areas like:

EC2
Long running idle VMs, obsolete VM types, VMs with non-standard AMIs or end-of-life OS, old snapshots, Spot/On-Demand/Reserved VMs

VPC/Network
Unused static IPs, unused ELBs, flow logs, CloudWatch logging, CIDR scheme

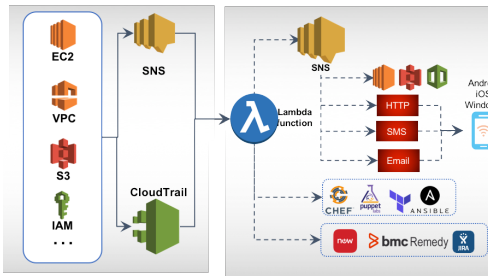
Storage
Unused EBS volumes, level of storage tiering (S3 vs Glacier) incorrect storage choice, access log tracking,

Database
RDS Idle DB Instances, Underutilized Redshift Clusters

CloudFront, Route 53
Excessive data transfer to/from abroad regions, Route 53 Latency Resource Record Sets

Cost
Top-N spend areas, associated users/groups, resources without tags, CW alarms/notifications

4) Automate & Remediate: cfxHorizons utilizes multi-pronged automation approach, where it integrates with popular **orchestration systems**, like Puppet, Chef, Terraform etc., **native AWS services** like CloudTrail, SNS, Lambda and ticketing management systems, like ServiceNow, Remedy etc.



cfxHorizons automatically deployed **Lambda** functions that listen to key changes/events in customer's AWS environment (ex: Non-standard AMIs, Idle resources etc.). Customer was able to track down and **eliminate set of co-related** under-utilized VMs, snapshots, storage resources. VM snapshots older than 15-days were **automatically deleted** using time-triggered functions. Lambda functions can also instantiate a CLoudFormation template, trigger a workflow or create a ticket - which can revert incorrect configs, auto-correct or terminate resources. cfxHorizens also automatically **creates SNS topics** that can be further piped upstream to various notification mechanisms like Slack, Twilio, PagerDuty or integrated with corporate IT messaging systems.