abode

DIY HOME SECURITY

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DIY HOME SECURITY
SOLUTIONS PLATFORM PROVIDING
COMPREHENSIVE SECURITY AND AUTOMATION
A Case Study

INTRODUCTION

Abode provided homeowners with a comprehensive suite of DIY home security solutions to keep their families and property safe. Its users can self-install and control the system remotely using a web and mobile application.

Over time, it has now garnered over 300,000 connected devices on its smart home platform.

Project goals:

Real-time streaming
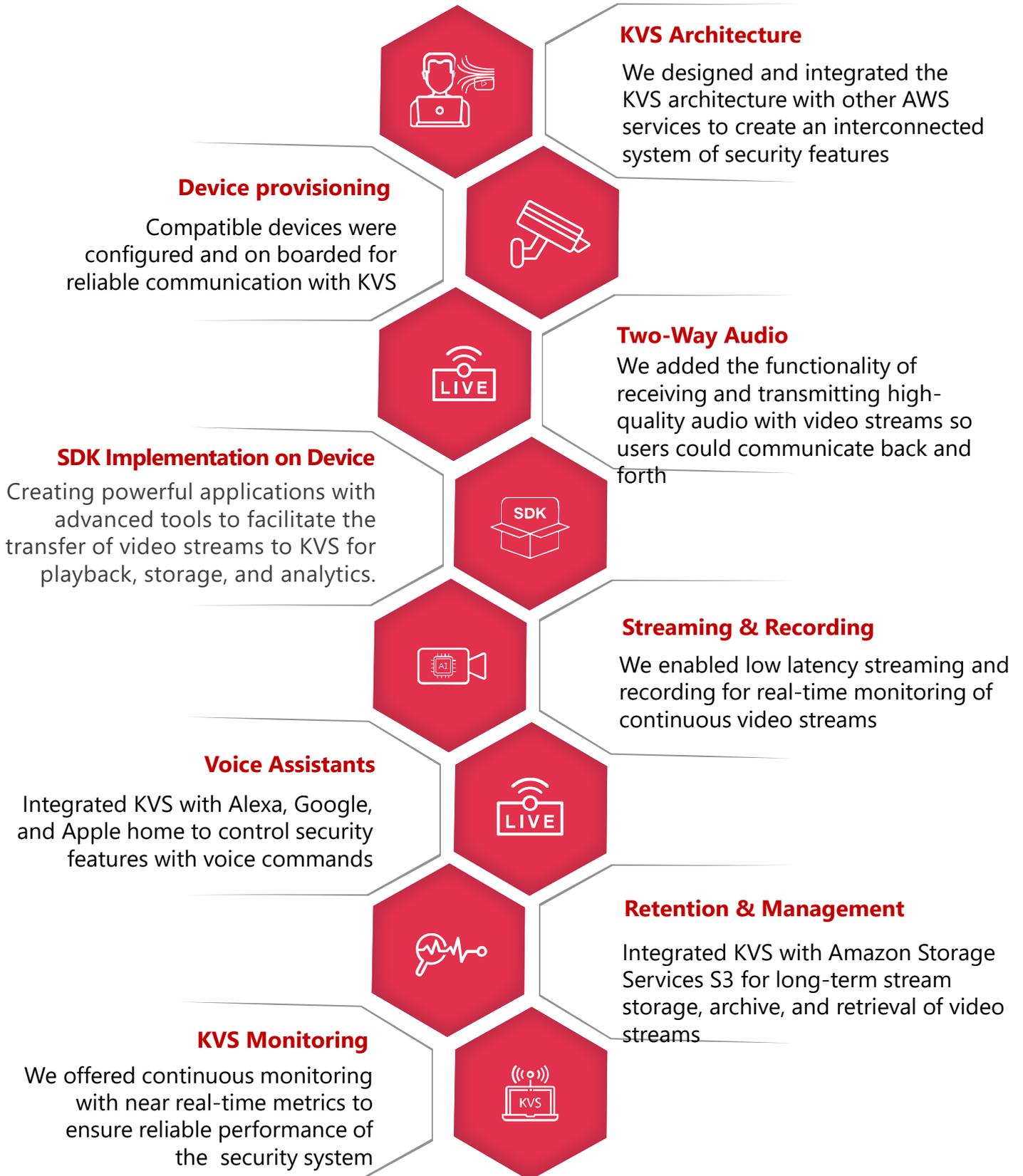
Platform Security

Platform Scalability

Agile Processes

Challenge

Our collaboration started in 2014 when Abode was looking for a holistic security solution to meet the increasing security needs of private consumers. They were looking for a reliable real-time streaming service with added features to increase the breadth of security features they could offer to their customers. As a business goal, Abode also wanted the capability to elastically scale while keeping development and operational costs low.

Solution

Zigron took an opportunity as a challenge. With Abode, we held detailed discussions with them to outline project requirements and what expertise we could offer to make that happen.

- Building an in-house team to design, develop, and maintain a sophisticated security system can be timely, costly, and complicated

- Therefore, Abode entrusted us with managing the product development lifecycle by leveraging or domain and technical expertise.

- To ensure Abode's market success we offered to develop their platform with strong IoT functionality with AWS features such as Kinesis Video Streaming. This made their cameras more intelligent to allow real-time monitoring of a user's house, and also to remotely view those video streams as well.

- DevOps was a huge advantage for them too since their system lacked the agility to make frequent reliable deployments possible. Our teams worked closely with Abode to ensure their systems were properly automated to mitigate that issue and bring more productivity.

IoT Application Development Platform

As a registered consulting partner in Amazon's Partner Network, we helped Abode embed **low-latency**, **reliable**, and **managed streaming** that made its cameras intelligent and scalable with the **AWS Cloud**.

KVS Architecture

We designed and integrated the KVS architecture with other AWS services to create an interconnected system of security features

Device provisioning

Compatible devices were configured and on boarded for reliable communication with KVS

Two-Way Audio

We added the functionality of receiving and transmitting high-quality audio with video streams so users could communicate back and forth

SDK Implementation on Device

Creating powerful applications with advanced tools to facilitate the transfer of video streams to KVS for playback, storage, and analytics.

Streaming & Recording

We enabled low latency streaming and recording for real-time monitoring of continuous video streams

Voice Assistants

Integrated KVS with Alexa, Google, and Apple home to control security features with voice commands

Retention & Management

Integrated KVS with Amazon Storage Services S3 for long-term stream storage, archive, and retrieval of video streams

KVS Monitoring

We offered continuous monitoring with near real-time metrics to ensure reliable performance of the security system

Amazon Cloud & IoT Core

by:

We provided Amazon IoT Core as a fully managed service to Abode to securely connect and manage any number of Abode's IoT devices. Data was then continuously ingested from connected devices and built rich applications that integrated that data through Amazon Cloud.

Another interesting feature we offered was "**device shadow**". We created a virtual version of devices that consisted of their latest state so that Abode's application and the device could interact with one another. This made it easier to build applications that could interact with devices using REST APIs

Abode enjoyed the benefits of scalability along with device data and connection security due to end-to-end encryption of every connection point.

With an IoT Core, we ensured Abode's application could track and communicate with all its smart devices, at all times. Utilizing services such as AWS Lambda, Video Kinesis Streaming, CloudWatch, and Voice Service we were able to build an application that gathered, processed, analyzed, and acted on data generated from devices (like generating security alarms).

DevOps and Cloud

Our cloud professional teams provided point-to-point security, expansive storage, monitoring and alerting, and failover strategy. This was followed by integrating DevOps to shorten the development lifecycle and faster time-to-market for their new features.

After successfully building their cloud environment in 2 months our teams managed and monitored their system to ensure its optimal performance. But apart from simply building the cloud, we ensured its strategic advantage was aligned with their business objectives by:

- Accelerating the delivery of new features
- Delivering resource transparency
- Enabling faster resource provisioning

- Embedding security to prevent data breaches

DevOps Enablement

Abode's workflow was dependent on manual processes that often lead to errors and delays in deployment. Without an automated workflow, Abode was unable to deploy as often as they'd like to. To automate their workflow and improve agility we implemented DevOps so they could focus on identifying the next feature to implement.

DevOps Assessment
We assessed their existing architecture to create a roadmap for the desired state and identified traceable metrics. Strategy for an AWS cloud-based solution was created.

Continuous Integration (CI)
Our team automated the building and testing of code every time there were changes to version control. This reduced bugs and duplicated efforts with collaboration between the development and operations teams.

Continuous Delivery (CD)
We increased their release frequency, accuracy, and reliability with an automated delivery process.

Process automation
Automated repetitive and time-intensive tasks. This removed human error, enhance productivity and allowed Abode to focus on value addition for customers

Agile Development
With an agile, iterative approach we designed and developed their product software with scalability in mind.

DevSecOps
Embedded automated security such as code review, configuration and vulnerability management, identity and access management from the start for rapid and secure code delivery

Support
Our team still offers around-the-clock support with AWS cloud, DevOps, and Security professionals.

Environment Management
We carried out environment setup, eliminated configuration mismatch, enabled activity report generation, and offered release and configuration management.

Infrastructure Management
AWS Cloud collaborated with configuration management, automation, and analytics to build a robust infrastructure.

Monitoring and Logging
Our team monitored applications and production environments to gather rich data in various logging formats. This ensured application health and re-align strategies.

Configuration management
Ensured software consistency by automatedly maintaining them in a consistent desired state.

ROI and Efficiency

- End-to-end security implemented
- Provided faster operational support to promptly fix issues
- Enhance development agility for frequent deployments
- DevOps led to more productive teams
- Enhance monitoring and measurement

Infrastructure as Code

By using Infrastructure as Code, we replaced the manual configuration of environments by representing their desired states in simple lines of code. This repeatable code prevented run time issues caused by configuration drift and missing dependencies. We made applications testable in production-like environments earlier in the development cycle to prevent deployment issues. This resulted in faster software deployment with little inconsistency between software versions.

(DevOps point of view)

Abode's Benefit with IaC

- High scalability
- Faster deployment for faster customer feedback
- Speed and consistency with automation
- Efficient software development lifecycle
- Reusable code saves time and effort

Benefit

01 Previously Abode would have monthly deployments and faced considerable deployment. We've now moved them to weekly deployments with no downtime at all.

02 With improved deployment rates and time with automation, Abode no longer faces logging and monitoring issues.

03 Its home security platform now offers comprehensive security and automation features for customer ease.

04 With real-time alerts, Zigron can promptly address issues Abode faces.

Result

Abode became one of the best-selling DIY home security solutions according to CNET, PCMAG, and Business Insider.

"Abode's scalable hardware and monitoring services, solid performance and smart integrations make it **one of the most appealing DIY systems available today.**"

— c|net

"Setting up and managing a home security system can be a hassle, but Abode makes it surprisingly easy. I was up and running within 15 minutes, and the system's sensors were always responsive. There was never any ambiguity over whether or not the system was armed, and Abode's commitment to working with a wide array of security hardware makes me confident that buying this system today is **an investment that'll only get better with time.**"

— BUSINESS INSIDER

"The Abode Home Security Starter Kit is a fantastic do-it-yourself security system that offers no-contract professional monitoring. It starts with the basics, but is **highly expandable** with support for plenty of third-party gadgets and services."

— PC PCMAG.COM

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