

# Migration UpHome Design Website to AWS

## Executive Summary

UpHome provides a site where the customer can create and customize their bathroom design using 3D tools website. For this purpose, services like a Web Server, Hosting of the Domain and other tools are used.

Due to the limitations of its infrastructure and architecture, the entire platform was running on a single server, the service was limited to share with other sites in addition to the lack of high availability and automation, the environment did not have the essential elements such as fault tolerance, robustness in the platform and security.

## The Challenge

Migrate the server currently hosted on LiquidWeb to AWS and create a highly available, robust, and secure platform that can provide the best user experience when designing their bathroom renovation projects. The main points that the new architecture must have:

- Dedicated server.
- Security.
- Scalability.

## Why AWS

AWS is a cloud platform which has all the necessary services to create a robust, multi-tenant, highly available, highly scalable, and secure infrastructure.

## About Customer



UpHome makes your bathroom renovation experience as simple as buying online, with an all-inclusive experience. Design online, get your quote & financing in less than 2 minutes.



## “High Available and Secure architecture.”

- Speeds innovation and allows you to work with production data
- Easily migrates critical workloads to the cloud
- The solution has best security practices

## The Solution

The new architecture whose design was thought for running entire over the cloud, includes an interface (design application) which interact with AWS services in a clear and easy way, besides the platform design was created following the best practices that recommends the AWS Well-Architected Framework where are highlighted the following points:

- 100% AWS based solution.
- High availability.
- Fault tolerance.
- 100% resources for application use.
- Multiple layers of security.



For the solution the next components were used:

- **Amazon Virtual Private Cloud (Amazon VPC)** gives you full control over your virtual networking environment, including resource placement, connectivity, and security.
- Two subnets, 1 private subnet to host the **EC2** that contains the application and 1 public subnet to host an Application Load Balancer and the **NAT Gateway**.
- An AWS EC2 c5n.large instance type to host the application, this instance provides the capacities to support the requirement of the application, and a AWS EC2 t2.nano instance type as a Bastion Host for the Developers access.
- **Amazon EC2 Auto Scaling** helps you ensure that you have the correct number of Amazon EC2 instances available to handle the load for your application.
- **Elastic Load Balancing** automatically distributes the incoming traffic across multiple targets, scales the load balancer as the incoming traffic changes over time, also provides a layer of security for the application.

## Results and Benefits

The migration resulted in a robust, highly scalable, and automated architecture where through CloudFormation templates, the whole infrastructure is created in a few minutes. In terms of validation, stress testing was performed where the website could handle up to 20,000 concurrent connections without performance degradation.

The benefits obtained with this solution are highlighted and listed below:

### Best Performance

A significant change can be observed in the performance application since the website is getting better response times.

### High Available and reliable

The Client's architecture was improved by adding HA taking advantage of the AWS Global Infrastructure using two Availability Zones in a region.

### Traffic Control

By Using VPCs and Security Groups the traffic can be handled granting access only to the authorized traffic,

### Secure Connections

Secure connections were established by using SSL certificates (HTTPS)

### Automated Backups

Daily backups were configured to protect the data in the case of an event.

## “Robust and Elastic architecture”

- Best Performance
- Low Cost
- Reliable
- Daily Backups
- High level of Security
- Available and durable



Amazon Route 53



AWS WAF



Amazon VPC



Elastic Load Balancing



Amazon EC2



Amazon EC2 Auto Scaling



Amazon Simple Storage Service (S3)



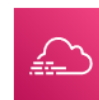
Amazon Aurora



AWS CloudFormation

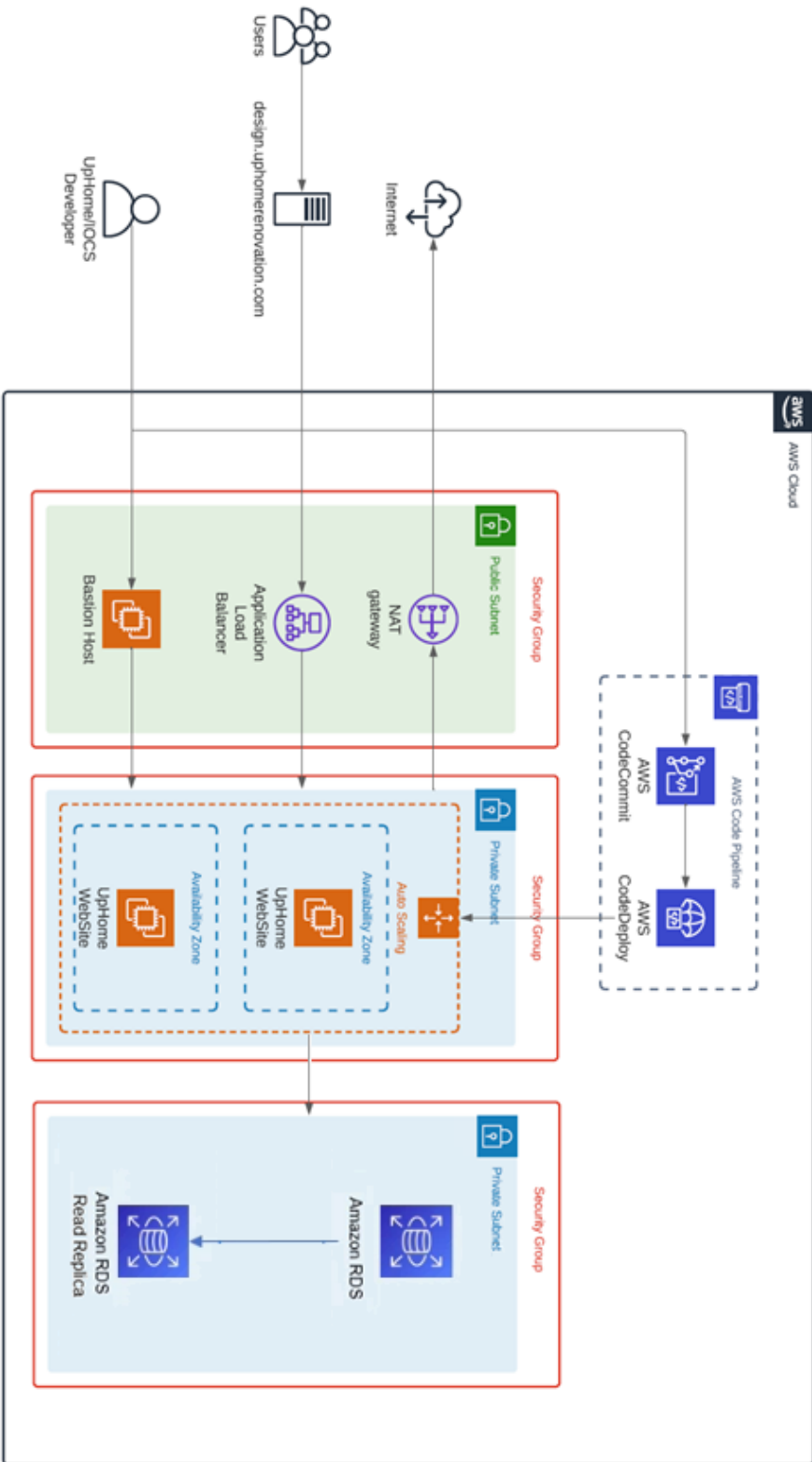


Amazon CloudWatch



AWS CloudTrail

# UpHome Solution Diagram



## Next Steps

Now that the application was migrated to the cloud, it's time to start taking advantage of the AWS tools to optimize the applications. AWS has five pillars of a well-architected framework: security, reliability, performance efficiency, cost optimization, and operational excellence. As part of the migration, the applications will have been properly configured and patterned after the reference implementation architectures, standards, and conventions following AWS best practices.

### Superior Performance

This infrastructure provides a fast, resilient, and high availability environment for the application.

### LOW TCO

Save money by replacing physical hardware with expensive license fees, with AWS you pay for what you use.

### Fully Managed

With fully managed resource provisioning, maintenance, and backup, you no longer must worry.

## About IO Connect Services

IO Connect Services is a company specializing in Information Technology Consultancy Services. All our team members have one thing in common: our enthusiasm for technology and our passion for customer service excellence. We provide services in all North America, LATAM and Europe. Our headquarters are located in the NYC metropolitan area, and we also have offices in Guadalajara and Madrid.

