



# ERKS Virtual Studio's Scalable Cloud Transformation with AWS Content Delivery Platform

## Executive Summary

ERKS Virtual Studio, a pioneer in 3D visualization, immersive experiences, and virtual reality, required a modernized cloud infrastructure to support its expanding portfolio of digital services, including CGI, DOOH, and spatial computing projects. Partnering with binbash, an AWS Advanced Tier Services Partner, ERKS embarked on a cloud transformation journey to enhance content delivery, scalability, and security. This case study outlines how ERKS utilized a combination of AWS CloudFront for static front-end sites, Cloudflare for 3D asset distribution, and Terraform Infra as Code (Iac) with binbash Leverage™ to optimize its infrastructure, achieving nearly 10x delivery efficiency while ensuring seamless and secure global content distribution.

## Customer Challenge

As ERKS expanded its services, several critical challenges emerged:

- Scalability: The need to dynamically scale infrastructure to handle high traffic volumes for campaigns and immersive experiences, often peaking with millions of concurrent users.
- Security: Protecting high-value digital assets, including 3D models and interactive content, from threats while ensuring secure and reliable content delivery.
- Operational Efficiency: Streamlining deployment processes to support rapid iterations of 3D and AR content across different platforms and regions.
- Cost Management: Optimizing cloud costs while maintaining high performance and scalability for large-scale digital campaigns.

## Solution

binbash provided a comprehensive solution to modernize ERKS's infrastructure by deploying a Well-Architected AWS Content Delivery Platform. This included the strategic use of AWS CloudFront for static front-end content, Cloudflare for 3D asset delivery, AWS S3 used for storing content at scale, and CI/CD pipelines for automated asset deployment. The use of



ERKS Virtual Studio is a leading provider of 3D visualization, immersive experiences, and virtual reality solutions. With a focus on innovation and cutting-edge technology, ERKS creates stunning digital realities that engage and inspire audiences worldwide. From CGI and DOOH campaigns to spatial computing and Web AR, ERKS delivers transformative digital experiences that push the boundaries of creativity and technology. With a commitment to quality and excellence, ERKS continues to lead the way in the digital content and immersive experience industry.



binbash was instrumental in our project's success, delivering expert services across three key phases. Their secure, cost-efficient AWS setup, flawless CloudFlare and S3 integration, and streamlined CI/CD processes notably enhanced our infrastructure and accelerated development. Their deep AWS knowledge, commitment to security, and efficiency made them an invaluable partner. Highly recommended for any AWS project.

**Santiago Braña - Co-Founder**



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Infrastructure as Code (IaC) with binbash Leverage™ was pivotal in accelerating the implementation and ensuring the scalability and reliability of the solution.

## Key Components of the solution

### 1. AWS Well-Architected Content Delivery Platform:

- **Foundation Setup:** Established a secure, scalable AWS infrastructure to support ERKS's content delivery needs, including IAM IdC SSO for centralized access management and security.
- **CloudFront + S3 Deployment:** Deployed AWS CloudFront integrated with AWS S3 object storage to distribute static front-end sites globally with low latency, ensuring fast and reliable access to ERKS's web content.
- **Cloudflare + AWS S3 for 3D Assets:** Integrated Cloudflare with AWS S3 to handle the distribution of high-volume 3D assets, ensuring efficient, secure delivery with optimized caching and performance.

### 2. CI/CD Pipelines:

- **Automated Workflows:** Developed CI/CD pipelines using GitHub Actions to automate the build, test, and deployment processes for 3D assets, Web AR, and CGI projects, enabling rapid updates and iterations.

### 3. Cost Optimization:

- **Efficient Resource Management:** Configured Auto Scaling and implemented billing alerts to optimize costs while maintaining performance across large-scale digital campaigns.

## Visual Representation

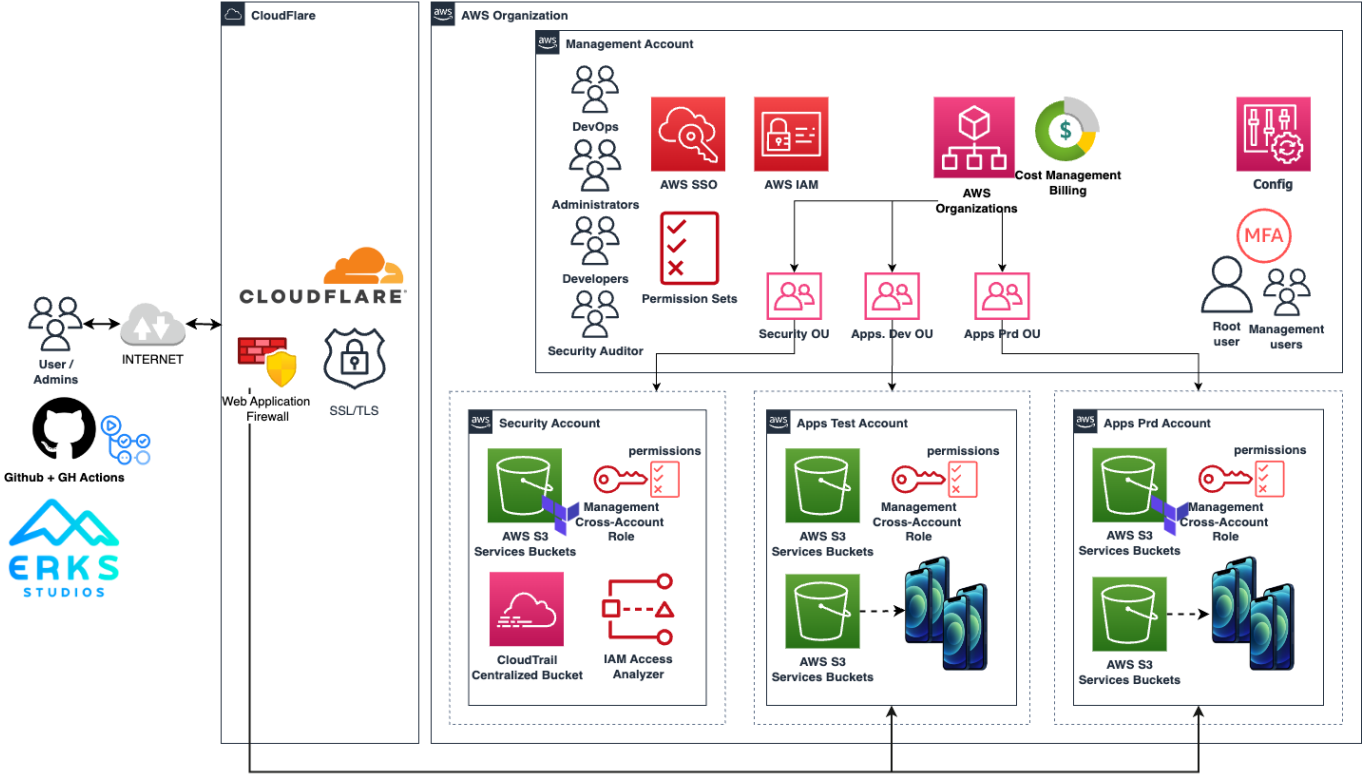
### AWS Landing Zone | Organization & Accounts:

The 1st diagram shows the overall architecture of the AWS Landing Zone and the organization of ERKS's accounts. The AWS infrastructure is segmented into different organizational units (OUs) such as Security, Applications Development, and Production. Cloudflare is utilized for 3D asset delivery, providing SSL/TLS and Web Application Firewall (WAF) services. The architecture ensures that all applications are securely managed, with permissions set for DevOps, Administrators, and Developers across the different accounts. AWS S3 is used for storing services and content, with cross-account roles enabling secure and streamlined access.



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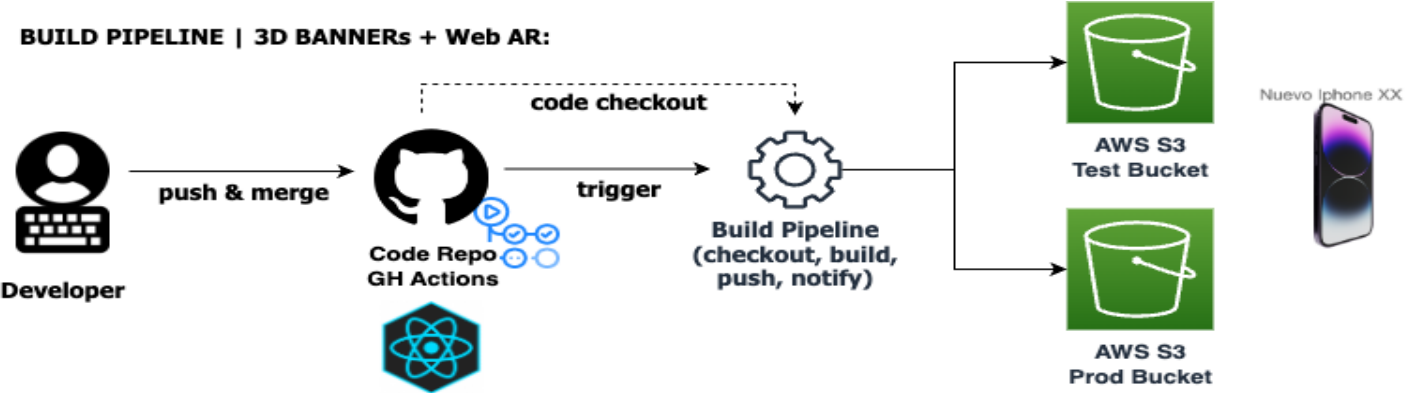
AWS LANDING ZONE | ORGANIZATION & ACCOUNTS



**Build Pipeline | 3D Banners + Web AR:**

The 2nd diagram illustrates the build pipeline for 3D Banners and Web AR content. Developers push and merge code to a GitHub repository, triggering a CI/CD pipeline (using GitHub Actions) that checks out the code, builds it, and then pushes the final assets to AWS S3 buckets (Test and Production). The pipeline is designed to automate the entire process, ensuring consistency and efficiency in deploying assets to the appropriate environments.

**BUILD PIPELINE | 3D BANNERS + Web AR:**





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## Results

By deploying a combination of AWS CloudFront, AWS S3 and Cloudflare, and leveraging Terraform IaC with binbash Leverage™, ERKS achieved significant outcomes:

- **Enhanced Scalability:** The infrastructure now seamlessly scales to handle large traffic volumes, ensuring reliable delivery of immersive content during high-demand periods.
- **Improved Security:** Robust security measures from both AWS and Cloudflare protect ERKS's valuable digital assets and ensure secure content delivery.
- **Increased Efficiency:** Automated CI/CD processes reduced deployment times, allowing for quicker updates and iterative development cycles for CGI and AR projects.
- **Optimized Content Delivery:** The integration of CloudFront and Cloudflare ensured faster, more reliable content delivery, improving user experiences globally.
- **Cost Management:** Optimized resource usage and proactive cost monitoring led to substantial savings, ensuring the project remained within budget.

## Key Milestones

- **AWS and Cloudflare Content Delivery Platform Setup:** Established a secure and scalable infrastructure for global content distribution using CloudFront for static content and Cloudflare for 3D assets.
- **CloudFront and Cloudflare Deployment:** Implemented AWS and Cloudflare services to support the storage and delivery of 3D assets and interactive content.
- **CI/CD Pipeline Implementation:** Automated deployment processes for CGI, Web AR, and immersive content, ensuring rapid and reliable updates.
- **Security Integration:** Deployed WAF and DDoS protection through both AWS and Cloudflare to enhance the security of ERKS's digital assets and content delivery network.

## Conclusion

The collaboration between ERKS Virtual Studio and binbash resulted in a robust, scalable, and secure cloud infrastructure, perfectly aligned with AWS Well-Architected best practices. The strategic use of AWS CloudFront for static content and Cloudflare for 3D assets integrated with AWS S3 highly scalable and highly available object storage, combined with the efficiency of Terraform Infra as Code (IaC) with binbash Leverage™, enabled ERKS to rapidly scale its service offerings while maintaining high standards of security and operational excellence. This transformation has set a solid foundation for ERKS's continued growth in the digital content and immersive experience industry.