

Case Study

AI-DRIVEN CYBER SECURITY CAMPAIGN IMAGE GENERATION AND AUTOMATED EMAIL DELIVERY FOR PROGIST SOLUTIONS

At a Glance

Progist Solutions, a technology solutions company that builds and operates business applications, partnered with AceCloud to automate its cyber security awareness campaigns using generative AI on AWS. The solution generates branded campaign images with Amazon Bedrock, lets administrators review and approve them inside the Progist application, and delivers them to employees as email attachments through Amazon SES.

The engagement replaced a slow, design-dependent process with a consistent, scalable one, so security awareness programs can run faster and at larger scale without sacrificing brand consistency.

Outcomes

- Automated generation of cyber security campaign images from the customer's own knowledge base of security content, templates and branding guidelines.

- Applied logos, headlines and color palettes programmatically from approved templates for consistent, on-brand output.
- Added an administrator review and approval step before any campaign is delivered.
- Automated email delivery with image attachments, with optional SMS reminders.
- Built asynchronous, fault-tolerant processing for bulk generation and throttled sending.
- Delivered a production-ready architecture in the AWS Asia Pacific (Mumbai) region in a six-week engagement.

The Client

Progist Solutions is a technology solutions company that builds and operates business applications for its customers and their workforce. As threats such as phishing, credential theft, ransomware and social engineering continue to grow, Progist runs regular cyber security awareness campaigns to educate end users and employees on safe digital practices.

Progist maintains its own knowledge base of security content, campaign templates and branding guidelines.

The Challenge

Creating campaign visuals was a manual, design-dependent process. It was slow, difficult to scale, and prone to inconsistencies in messaging and branding, which is a particular problem for security awareness, where accuracy and recognizable branding build trust.

Progist wanted generative AI to produce campaign images inside its own application and deliver them directly to recipients. Doing that well meant more than generating pictures: image models are good at visuals but unreliable at precise text and logos, content had to stay accurate and approved, and a program that sends email at scale has to reach inboxes reliably and securely.

The Solution

AceCloud built an end-to-end pipeline in the AWS Asia Pacific (Mumbai) region, running the containerized Progist application on Amazon EC2 in private subnets of a secure Amazon VPC, with images stored in Amazon ECR and access fronted by Amazon CloudFront, Amazon Route 53 and AWS Certificate Manager.

- **Knowledge-Grounded Campaign Generation**

Progist's security content, campaign templates, logos and branding guidelines live in Amazon S3 and are cataloged and prepared with AWS Glue. Amazon Bedrock Knowledge Bases provide retrieval over this content so every campaign is accurate and aligned with approved messaging.

A Generator function on AWS Lambda combines retrieved context with campaign parameters such as topic, audience, tone and language, uses Amazon Bedrock foundation models to write precise image prompts and campaign copy, and invokes Amazon Bedrock image generation models to create the visuals.

- **On-Brand by Design**

Rather than relying on the image model to render logos and text, brand elements such as logos, headlines and color palettes are applied programmatically from approved templates. Amazon Bedrock Guardrails screen prompts and generated content for denied topics, inappropriate or misleading material and sensitive information.

- **Review, Approval and Delivery**

Generated images are stored in a KMS-encrypted Amazon S3 campaign assets bucket and previewed in the application through Amazon CloudFront signed URLs. Administrators approve campaigns before they go out.

Approved campaigns flow through Amazon SQS queues, with dead-letter queues for failure handling, to a Mailer function that sends emails with image attachments through Amazon SES. SES uses a verified domain with SPF, DKIM and DMARC, and bounces, complaints and delivery events are handled through Amazon SNS and an Event Handler function. AWS End User Messaging provides optional SMS reminders.

- **Model Evaluation and Optimization**

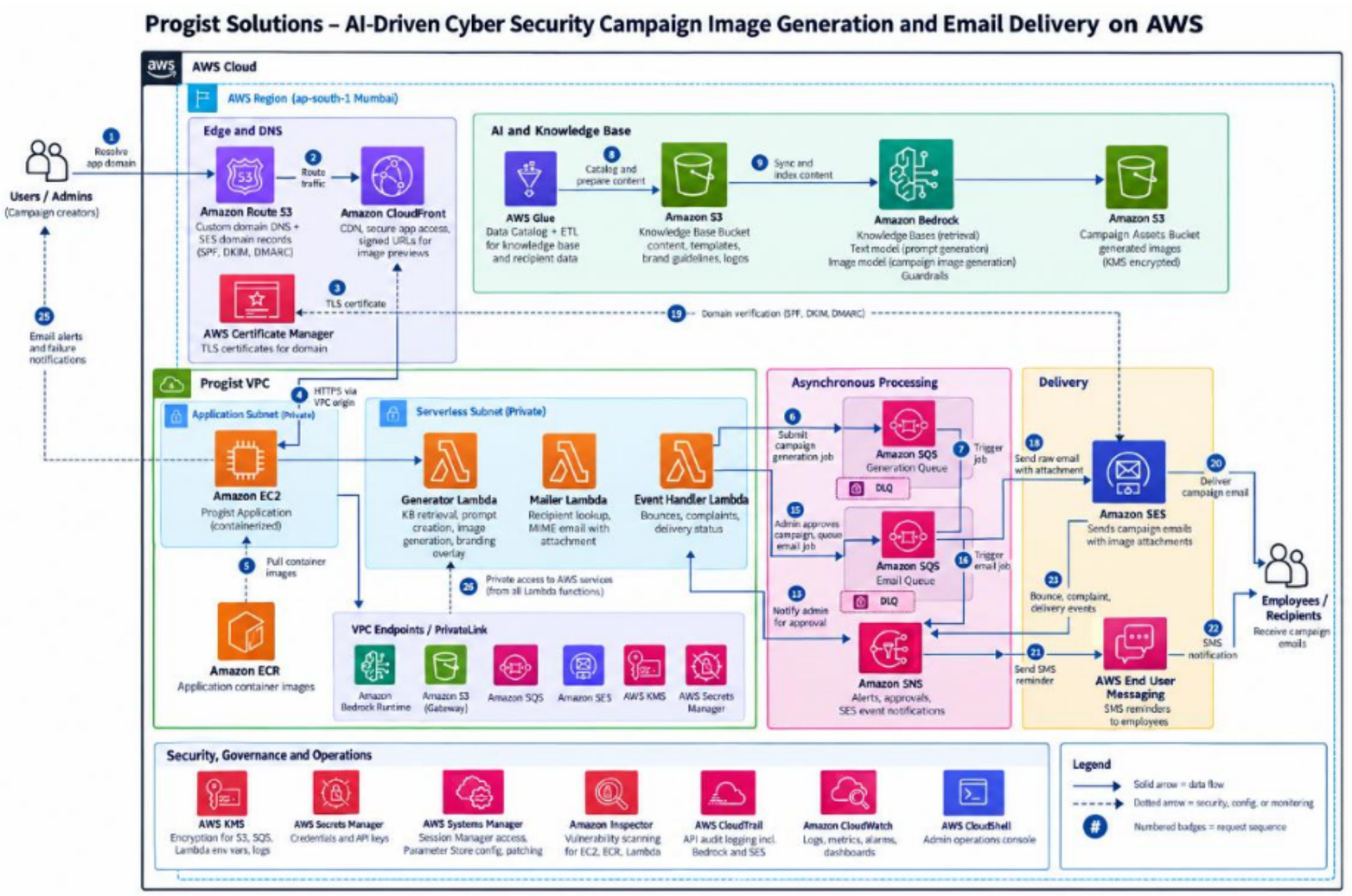
The team prepared an evaluation set of representative campaign requests across security topics and benchmarked candidate Bedrock text and image models on image quality, brand consistency, prompt accuracy, content safety, latency and cost per generated image, then tuned prompts, model selection and image settings for production.

- **Security and Operations**

All service traffic stays on the AWS network through VPC endpoints (AWS PrivateLink). AWS KMS and AWS Secrets Manager protect data and credentials. AWS Systems Manager provides Session Manager access without open SSH ports, Parameter Store configuration and Patch Manager patching, and Amazon Inspector continuously scans EC2 instances, ECR images and Lambda functions. Amazon CloudWatch, AWS CloudTrail and AWS CloudShell provide monitoring, auditing and administrative access.

Architectural Diagram

The diagram below shows how a request moves through the solution end to end.



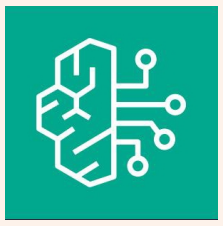
Results and Benefits

- **Faster, More Consistent Analysis:** Visuals that once depended on manual design are generated on demand.
- **Consistent Branding:** Programmatic branding from approved templates keeps every image on-brand.
- **Accurate, Approved Messaging:** Knowledge Base grounding, guardrails and administrator approval keep campaigns accurate and appropriate.
- **Scalable, Reliable Delivery:** Queue-based processing supports bulk generation and throttled sending, with authenticated email and bounce handling that protect sender reputation.

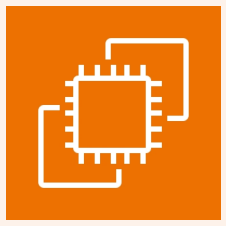
- **Secure Foundation:** Private networking, encryption, vulnerability scanning and full audit trails support a security-focused program.

AWS Services Used

The solution draws on a focused set of AWS services, each handling a specific part of the workflow:



Amazon Bedrock



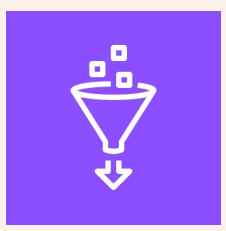
Amazon EC2



AWS Lambda



Amazon S3



AWS Glue



Amazon SES



Amazon CloudFront



AWS KMS



AWS Systems Manager

Conclusion

With AceCloud, Progist Solutions turned cyber security campaign creation into an automated, governed workflow: knowledge-grounded generation, programmatic branding, administrator approval and reliable email delivery. Progist can now run security awareness campaigns faster, more consistently and at greater scale, with less manual design effort.

Powered By aws



Contact Us

Are you ready to cut down your cloud spending? Contact AceCloud Experts today to get a customized quote.

awspartner@acecloud.ai

https://acecloud.ai/aws/

Our Location

2069 Oneill Dr, Bethel Park, Pennsylvania, 15102-6602

2637 E Atlantic Blvd #23519 Pompano Beach, FL 33062, Florida

Ace Tower, 809-A, Udyog Vihar, Phase 5, Gurugram 122016, Haryana, India

About Us

Years of Exp
15+

Data Center
10+

Awards
100+

AceCloud is a leading provider of end-to-end cloud computing solutions to global organizations across industries at scale. It offers a full spectrum of cloud services, including Public Cloud, Application Hosting, AWS Services, Managed Security Services, and Hosted Virtual Desktop Solutions.

AceCloud is a brand of Real Time Data Services (RTDS) group of companies - a leading provider of information technology capabilities specializing in Cloud Computing and Cloud Telephony. RTDS Group has an employee base of 600+ across India, the US, and the UK, supporting over 20,000+ customers and IT infrastructure in 10+ data centers spanning the globe. It offers industry-leading technological solutions that help customers streamline their operations and enhance efficiency.

As an advanced consulting and certified AWS Well-Architected Partner, AceCloud recently achieved the prestigious AWS Storage Competency and is also recognized as an Amazon RDS Service Delivery Partner. These achievements underscore its deep expertise in AWS technologies and commitment to delivering high-quality cloud solutions.

aws PARTNER Advanced Tier Services

- Public Sector
- Amazon RDS Delivery
- Storage Services Competency
- Well-Architected Partner Program