Service Name

Amazon Simple Email Service (SES)

Service Overview

Amazon Simple Email Service (SES) is a cost-effective, flexible, and scalable email service that provides an easy way to send and receive email using your own email addresses and domains. It eliminates the complexity and costs of building large-scale email infrastructure by handling server management, network configuration, and IP address reputation. SES supports sending marketing emails, transactional emails, and newsletters, while also enabling email receiving capabilities for developing autoresponders, unsubscribe systems, and customer support ticket generation from incoming emails.

Key Use Cases

- Marketing emails: Send promotional campaigns, special offers, and newsletters to customers
- Transactional emails: Send order confirmations, password resets, and account notifications
- Email receiving and processing: Develop email autoresponders, unsubscribe systems, and customer support ticket generation

Features

- **Email Sending**: Send emails via SMTP interface, API calls, or AWS SDKs with support for formatted and raw email formats
- **Email Receiving**: Receive and process incoming emails with receipt rules, IP filtering, and integration with other AWS services
- **Virtual Deliverability Manager**: Suite of deliverability tools to track and improve email delivery rates and sender reputation
- **Dedicated IP Addresses**: Option for managed or standard dedicated IPs to control sender reputation
- **Mail Manager**: Advanced email traffic management with filtering policies, archiving, and security add-ons
- **Template Support**: Create and manage email templates for personalized bulk messaging
- **Event Publishing**: Track email events like bounces, complaints, and deliveries through CloudWatch and SNS
- **DKIM and Authentication**: Easy DKIM setup and email authentication to improve deliverability

Value Proposition

Amazon SES eliminates infrastructure challenges such as email server management, network configuration, and IP address reputation management that businesses typically face when building large-scale email solutions. It provides cost-effective pay-as-you-go pricing with no upfront costs or long-term contracts, leveraging Amazon's sophisticated email infrastructure built for its own large-scale operations. SES offers seamless integration with other AWS services, high deliverability rates through managed IP pools and authentication features, and scalable infrastructure that can handle varying email volumes from small businesses to enterprise-level operations.

Service Integration

Amazon SES integrates deeply with numerous AWS services including Amazon EC2 for application hosting, AWS Lambda for email processing automation, Amazon S3 for email storage, Amazon SNS for bounce and complaint notifications, Amazon CloudWatch for metrics and monitoring, AWS Identity and Access Management (IAM) for access control, AWS KMS for email encryption, AWS CloudTrail for API logging, Route 53 for DNS management, and Amazon Elastic Beanstalk for email-enabled applications. These integrations enable comprehensive email workflows and automation scenarios.

Onboarding and Offboarding

Getting started with Amazon SES requires signing up for an AWS account and verifying email addresses or domains to prove ownership. New accounts begin in the sandbox environment with limited sending capabilities (200 emails per day, 1 per second) restricted to verified addresses for testing:

- To move to production, customers submit a sending limit increase request through AWS Support Center, providing details about their use case
- The setup process includes configuring sender identities, setting up authentication (DKIM), and optionally configuring dedicated IPs, event publishing, and integration with other AWS services

Getting Started Guide: https://docs.aws.amazon.com/ses/latest/dg/getting-started.html

Data Removal

Amazon SES does not store customer email content by default, as emails are processed and delivered in real-time. For email receiving features, customers can control data retention through their configured storage destinations (S3 buckets). To offboard, customers should delete configuration sets, verified identities, email templates, receipt rules, and any stored email content in connected services like S3. Account closure automatically removes SES configurations and stops billing.

Backup/Restore and Disaster Recovery

Amazon SES is primarily a transactional service that processes emails in real-time without built-in backup capabilities for email content. The service configuration (identities, templates, rules) can be recreated through Infrastructure as Code. For email receiving scenarios, backup depends on the chosen storage destination (typically S3) which provides its own durability and versioning capabilities. SES configurations should be documented and version-controlled for disaster recovery scenarios.

Backup Capabilities

Amazon SES does not provide traditional backup capabilities as it is designed as a real-time email processing service. Email sending is transactional and emails are not stored after processing:

- For email receiving, backup depends on the configured destinations such as S3 buckets which have their own backup and versioning features
- SES works with AWS Backup indirectly through the storage services it integrates with, but not directly as a supported resource

Disaster Recovery

Amazon SES supports disaster recovery through its multi-region availability and the ability to replicate configurations across regions. The service does not directly integrate with AWS Elastic Disaster Recovery as it processes emails in real-time without persistent storage. Disaster recovery planning should include recreating SES configurations, verified identities, and email templates in alternative regions using Infrastructure as Code practices.

Recovery Objectives

Amazon SES helps customers meet RPO and RTO objectives through its multi-region deployment options and real-time processing capabilities. Since emails are processed immediately without storage, RPO is essentially zero for the email service itself. RTO can be minimized by maintaining SES configurations in multiple regions and using automated deployment scripts. For email receiving scenarios, RPO and RTO depend on the configured storage destinations and their respective backup strategies.

Service Constraints

Service Quotas: https://docs.aws.amazon.com/ses/latest/dg/quotas.html

FAQ: https://aws.amazon.com/ses/faqs/

Technical Requirements

Service Documentation: https://docs.aws.amazon.com/ses/latest/dg/Welcome.html

User Guide: https://docs.aws.amazon.com/ses/latest/DeveloperGuide/Welcome.html

API Reference: https://docs.aws.amazon.com/ses/latest/APIReference/Welcome.html

Pricing Overview

Please see the AWS UK G Cloud 15 Pricing Document accompanying this service in the Digital Marketplace.

Public Pricing: https://aws.amazon.com/ses/pricing/

Cost Optimization

Amazon SES offers several unique cost optimization opportunities including pay-per-use pricing with no minimum fees or contracts, AWS Free Tier providing 3,000 message charges free monthly for the first 12 months, and tiered pricing for Virtual Deliverability Manager that reduces costs for high-volume senders. Additional optimizations include choosing appropriate regions to minimize data transfer costs, using shared IP pools instead of dedicated IPs for lower volumes, and leveraging AWS service integrations to reduce third-party email service costs.

Savings Considerations

Main cost savings considerations include eliminating infrastructure costs for email servers and maintenance, reducing third-party email service fees through competitive per-message pricing ($0.10 per 1,000 emails), and avoiding upfront capital expenditures. Organizations can optimize costs by right-sizing their email volume plans, using the free tier effectively during testing phases, selecting cost-effective storage options for email receiving scenarios, and implementing efficient email practices to minimize bounce rates and improve deliverability, which reduces wasted sending costs.