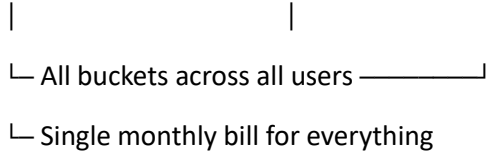# Current SkyCrate Billing Architecture

AWS Billing Flow (Reality)

AWS Bills ——> SkyCrate IAM Account ——> Entire AWS Account

  | |

  └─ All buckets across all users ——————┘
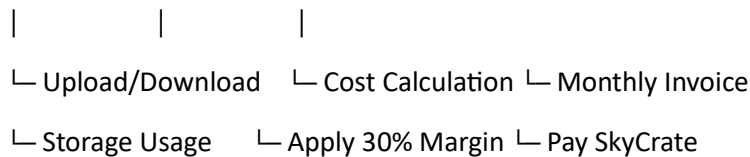
  └─ Single monthly bill for everything

Key Points:

- **AWS bills per IAM account**, not per bucket

- Your single AWS IAM credentials (AWS_ACCESS_KEY_ID + AWS_SECRET_ACCESS_KEY) are used for ALL user buckets

- AWS sends ONE consolidated bill to the IAM account owner (you/SkyCrate)

- All costs from all user buckets appear as line items under your single AWS account

SkyCrate's Internal Billing (What We Built)

User Activity ——> SkyCrate Tracking ——> User Bills

  | | |

  └─ Upload/Download   └─ Cost Calculation └─ Monthly Invoice

  └─ Storage Usage   └─ Apply 30% Margin └─ Pay SkyCrate

📊 **How It Actually Works**

1. AWS Side (Your Costs)

- AWS charges your IAM account for ALL usage across ALL user buckets

- You get line items like:

- S3 Standard Storage: 1,245 GB-Month @ $0.023/GB = $28.64

- S3 PUT Requests: 15,420 requests @ $0.005/1K = $0.77

- Data Transfer Out: 89 GB @ $0.09/GB = $8.01

-

2. SkyCrate Side (User Billing)

- Each user sees their individual usage with markup:

- User A: 245 GB Standard @ $0.030/GB = $7.35 (AWS cost: $5.64)

- User B: 189 GB Standard @ $0.030/GB = $5.67 (AWS cost: $4.36)

- User C: 811 GB Standard @ $0.030/GB = $24.33 (AWS cost: $18.65)

3. Revenue Model

Total AWS Bill: $28.64 (your actual cost)

Total User Bills: $37.35 (what users pay)

Your Margin: $8.71 (30% markup = profit)

🔧 **Current Implementation Details**

Per-User Bucket Architecture

From server/index.js:438-440:

const bucketName = DEV_MODE

  ? `dev-bucket-${genId()}`

  : `skycrate-${Date.now()}-${Math.random().toString(36).substr(2, 9)}`;

- Each user gets their own unique S3 bucket
- All buckets use the same IAM credentials
- Bucket isolation provides security and organization

Cost Tracking Per User

From server/index.js:375-395:

const trackBillingActivity = async (userId, activityType, details) => {

  // Tracks individual user activities

  // Calculates costs with SkyCrate markup

  // Stores in billing.json for user invoicing

};

💰 **Billing Models Comparison**

Model	Who Pays AWS	Bill Recipient	Complexity
Current (SkyCrate)	SkyCrate	SkyCrate → Users	Medium
Direct AWS	Each User	AWS → Users	High
Consolidated	Organization	Organization	Low

⚠️ **Important Considerations**

AWS Billing Reality

1. **You pay AWS** for ALL user activity across ALL buckets

2. **Single bill** covering all users' combined usage

3. **No per-bucket billing** from AWS - it's per AWS account

4. **Cost allocation** must be done by you (which SkyCrate handles)

SkyCrate Revenue

- Users pay SkyCrate with 30% markup

- SkyCrate pays AWS at base rates

- 30% margin covers infrastructure, support, platform costs

Cost Tracking Granularity

- SkyCrate tracks per-user, per-file, per-operation

- AWS provides account-level billing

- Your system reconciles the two for accurate user billing

This is why the SkyCrate model works well - you handle the complexity of AWS billing and provide users with simple, transparent usage-based pricing while maintaining profitable margins.

SkyCrate Billing Architecture Explained

AWS Billing Reality (How Amazon Actually Bills)

AWS Bills Per IAM Account, NOT Per Bucket:

- Your single AWS IAM credentials (AWS_ACCESS_KEY_ID + AWS_SECRET_ACCESS_KEY) are used for ALL user buckets

- AWS sends ONE consolidated monthly bill to your AWS account

- All costs from all user buckets appear as line items under your single AWS account

- **You (SkyCrate) pay Amazon directly** for all usage across all users

Billing Flow:

All User Buckets → Single AWS Account → One Monthly Bill → You Pay Amazon

bucket-user1	Your IAM	$245.67	SkyCrate pays
bucket-user2 →	Account →	Combined →	Amazon directly
bucket-user3	Credentials	Usage	

SkyCrate's Internal Billing System (What We Built)

Per-User Cost Tracking:

- Each user gets their own S3 bucket (skycrate-{timestamp}-{random})

- SkyCrate tracks each user's individual usage in server/data/billing.json

- Users pay SkyCrate with 30% markup over AWS base costs

- SkyCrate handles AWS billing complexity and provides simple user billing

Revenue Model:

User A pays SkyCrate: $7.35 (for their usage + 30% margin)

User B pays SkyCrate: $12.50 (for their usage + 30% margin)

User C pays SkyCrate: $18.90 (for their usage + 30% margin)

Total User Payments: $38.75

AWS Bills SkyCrate: $29.81 (actual AWS costs)

SkyCrate Profit: $8.94 (30% margin for platform, support, infrastructure)

Cost Allocation Architecture

1. AWS Side (Your Actual Costs):

- Single bill with line items like:

    - S3 Standard Storage: 1,245 GB-Month @ $0.023/GB

    - S3 PUT Requests: 15,420 @ $0.005/1K requests

    - Data Transfer Out: 89 GB @ $0.09/GB

2. SkyCrate Side (User Billing):

- Per-user tracking from server/index.js:375:

```
trackBillingActivity(userId, 'storage', {
  fileName: fileName,
  fileSize: size,
  storageClass: selectedStorageClass,
  cost: estimatedMonthlyCost // With 30% markup applied
});
```

3. User Experience:

- Users see transparent usage-based billing

- Monthly invoices with detailed breakdowns

- Pay SkyCrate directly (not AWS)

- No AWS account required for users

Why This Model Works

Benefits for Users:

- Simple usage-based pricing

- No AWS complexity

- Detailed cost breakdowns

- Professional invoicing

Benefits for SkyCrate:

- Profitable 30% margin

- Control over user billing

- Single AWS relationship to manage

- Scalable revenue model

Technical Implementation:

- Each user: isolated S3 bucket for security

- All buckets: same IAM credentials for simplicity

- Per-user: detailed cost tracking and billing

- AWS: single consolidated bill you pay

This architecture allows you to build a profitable SaaS while providing users with simple, transparent cloud storage pricing without AWS complexity.