AWS Consolidated Billing

# AWS Consolidated Billing Overview

* Consolidated billing enables consolidating payments from multiple AWS accounts (**Linked Accounts**) within the organization to a single account by designating it to be the **Payer Account**.
* **Consolidate billing**
  + **is strictly an accounting and billing feature.**
  + **allows receiving a combined view of charges incurred by all the associated accounts as well as each of the accounts.**
  + **is not a method for controlling accounts, or provisioning resources for accounts.**
* Payer account is billed for all charges of the linked accounts.
* Each linked account is still an independent account in every other way
* Payer account cannot access data belonging to the linked account owners
* However, access to the Payer account users can be granted through Cross Account Access roles
* **AWS limits work on the account level only and AWS support is per account only**

## Consolidated Billing Process

* Owner of the paying account simply needs to send a request to the account owner from the Consolidated Billing page.
* If the linked account owner accepts the request, the linked account becomes part of the consolidated bill.
* Process cannot be initated from the linked account

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## Consolidated Billing Scenarios

* Consolidated Billing can be applied to scenarios when you
  + have multiple accounts and want to get a single bill and track each account’s charges for e.g. multiple projects, each with its own AWS account or separate environments (Dev, Prod) within the same project
  + have multiple cost centers to track.
  + have acquired a project or company with its own existing AWS account and you want consolidated bill with your other AWS accounts.

## Consolidated Billing Benefits

* **One Bill**
  + A single bill with a combined view of AWS costs incurred by all accounts is generated
* **Easy Tracking**
  + Detailed cost report & charges for each of the individual AWS accounts associated with the “paying account” can be easily tracked
* **Combined Usage & Volume Discounts**
  + Charges might actually decrease because AWS combines usage from all the accounts to qualify you for **volume pricing discounts**
* **Free Tier**
  + Customers that use Consolidated Billing to consolidate payment across multiple accounts **will only have access to one free usage tier** and it is not combined across accounts

### Volume Pricing Discounts

* For billing purposes, AWS treats all the accounts on the consolidated bill as if they were one account.
* AWS combines the usage from all accounts to determine which volume pricing tiers to apply, giving you a lower overall price whenever possible.

#### **Volume Discounts Example**

* ***Example AWS Pricing*** – AWS charges $0.17/GB for the first 10 TB of data transfer out used, and $0.13/GB for the next 40 TB used that translates into $174.08 per TB for the first 10 TB, and $133.12 per TB for the next 40 TB
* ***Usage*** – Bob uses 8 TB of data transfer out during the month, and Susan uses 4 TB (for a total of 12 TB used).
* ***Actual Individual Bill*** – AWS would have charged Bob and Susan each $174.08 per TB for their usage, for a total of $2088.96
* ***Volume Discount Bill*** – Combined 12 TB total that Bob and Susan used, would cost the paying account ($174.08 \* 10 TB) + ($133.12 \* 2 TB) = $1740.80 + $266.24 = $2007.04

#### **EC2 Reserved Instances**

* **All Linked accounts on a consolidated bill can receive the hourly cost benefit of EC2 Reserved Instances purchased by any other account**
* **Linked accounts receive the cost benefit from other’s Reserved Instances only if instances are launched in the same Availability Zone where the Reserved Instances were purchased**
* **Capacity reservation only applies to the product platform, instance type, and Availability Zone specified in the purchase**
* **For e.g., Bob and Susan each have an account on Bob’s consolidated bill. Susan has 5 Reserved Instances of the same type, and Bob has none. During one particular hour, Susan uses 3 instances and Bob uses 6, for a total of 9 instances used on Bob’s consolidated bill. AWS will bill 5 as Reserved Instances, and the remaining 4 as normal instances.**

## Consolidated Billing Best Practices

* **Paying account should be used solely for accounting and billing purposes**
* **Consolidated billing works best with Resource tagging, as tags are included in the detailed billing report, which enables cost to be analyzed and decomposed across multiple dimensions and aggregation levels.**
* **Paying account owners should secure their accounts by using MFA (multi-factor authentication) and a strong password**

## ****AWS Certification Exam Practice Questions****

1. An organization is planning to create 5 different AWS accounts considering various security requirements. The organization wants to use a single payee account by using the consolidated billing option. Which of the below mentioned statements is true with respect to the above information?
   * Master (Payee) account will get only the total bill and cannot see the cost incurred by each account
   * **Master (Payee) account can view only the AWS billing details of the linked accounts**
   * It is not recommended to use consolidated billing since the payee account will have access to the linked accounts
   * Each AWS account needs to create an AWS billing policy to provide permission to the payee account
2. An organization has setup consolidated billing with 3 different AWS accounts. Which of the below mentioned advantages will organization receive in terms of the AWS pricing?
   * The consolidated billing does not bring any cost advantage for the organization
   * **All AWS accounts will be charged for S3 storage by combining the total storage of each account**
   * EC2 instances of each account will receive a total of 750\*3 micro instance hours free
   * The free usage tier for all the 3 accounts will be 3 years and not a single year
3. An organization has added 3 of his AWS accounts to consolidated billing. One of the AWS accounts has purchased a Reserved Instance (RI) of a small instance size in the us-east-1a zone. All other AWS accounts are running instances of a small size in the same zone. What will happen in this case for the RI pricing?
   * Only the account that has purchased the RI will get the advantage of RI pricing
   * One instance of a small size and running in the us-east-1a zone of each AWS account will get the benefit of RI pricing
   * **Any single instance from all the three accounts can get the benefit of AWS RI pricing if they are running in the same zone and are of the same size**
   * If there are more than one instances of a small size running across multiple accounts in the same zone no one will get the benefit of RI
4. An organization is planning to use AWS for 5 different departments. The finance department is responsible to pay for all the accounts. However, they want the cost separation for each account to map with the right cost centre. How can the finance department achieve this?
   * **Create 5 separate accounts and make them a part of one consolidated billing**
   * Create 5 separate accounts and use the IAM cross account access with the roles for better management
   * Create 5 separate IAM users and set a different policy for their access
   * Create 5 separate IAM groups and add users as per the department’s employees
5. An AWS account wants to be part of the consolidated billing of his organization’s payee account. How can the owner of that account achieve this?
   * The payee account has to request AWS support to link the other accounts with his account
   * The owner of the linked account should add the payee account to his master account list from the billing console
   * **The payee account will send a request to the linked account to be a part of consolidated billing** (Check [Process](https://docs.aws.amazon.com/awsaccountbilling/latest/aboutv2/con-bill-tasks.html#conbill_addaccount))
   * The owner of the linked account requests the payee account to add his account to consolidated billing
6. You are looking to migrate your Development (Dev) and Test environments to AWS. You have decided to use separate AWS accounts to host each environment. You plan to link each accounts bill to a Master AWS account using Consolidated Billing. To make sure you keep within budget you would like to implement a way for administrators in the Master account to have access to stop, delete and/or terminate resources in both the Dev and Test accounts. Identify which option will allow you to achieve this goal.
   * Create IAM users in the Master account with full Admin permissions. Create cross-account roles in the Dev and Test accounts that grant the Master account access to the resources in the account by inheriting permissions from the Master account.
   * Create IAM users and a cross-account role in the Master account that grants full Admin permissions to the Dev and Test accounts.
   * **Create IAM users in the Master account. Create cross-account roles in the Dev and Test accounts that have full Admin permissions and grant the Master account access.**
   * Link the accounts using Consolidated Billing. This will give IAM users in the Master account access to resources in the Dev and Test accounts
7. When using consolidated billing there are two account types. What are they?
   * **Paying account and Linked account**
   * Parent account and Child account
   * Main account and Sub account.
   * Main account and Secondary account.
8. A customer needs corporate IT governance and cost oversight of all AWS resources consumed by its divisions. The divisions want to maintain administrative control of the discrete AWS resources they consume and keep those resources separate from the resources of other divisions. Which of the following options, when used together will support the autonomy/control of divisions while enabling corporate IT to maintain governance and cost oversight? Choose 2 answers
   * Use AWS Consolidated Billing and disable AWS root account access for the child accounts. (Need to link accounts and disabling root access is just a best practice)
   * **Enable IAM cross-account access for all corporate IT administrators in each child account.** (Provides IT goverance)
   * Create separate VPCs for each division within the corporate IT AWS account.
   * **Use AWS Consolidated Billing to link the divisions’ accounts to a parent corporate account** (Will provide cost oversight)
   * Write all child AWS CloudTrail and Amazon CloudWatch logs to each child account’s Amazon S3 ‘Log’ bucket (Preferred approach would be to store logs from multiple accounts to a single S3 bucket with CloudTrail for IT Goverance and CloudWatch alerts for Cost Oversight)
9. An organization has 10 departments. The organization wants to track the AWS usage of each department. Which of the below mentioned options meets the requirement?
   * Setup IAM groups for each department and track their usage
   * **Create separate accounts for each department, but use consolidated billing for payment and tracking**
   * Create separate accounts for each department and track them separately
   * Setup IAM users for each department and track their usage