**Organizations**

* Organizations helps you centrally govern your environment as you grow and scale your workloads on AWS
* Organizations helps you centrally manage billing; control access, compliance, and security; and share resources across your AWS accounts
* Using AWS Organizations, you can automate account creation, create groups of accounts to reflect your business needs, and apply policies for these groups for governanace
* You can also simplify billing by setting up a single payment method for all of your AWS accounts
* Through integrations with other AWS services, you can use Organizations to define central configurations and resource sharing across accounts in your organization
* Organizations is available to all AWS customers at no additional charge
* The Organizations API enables automation for account creation and management
* Available in two feature sets:
  + Consolidated billing
  + All features
* By default, organizations support consolidated billing features
* Consolidated billing separates paying accounts and linked accounts
* You can use AWS Organizations to set up a single payment method for all the AWS accounts in your organization through consolidated billing.
* With consolidated billing, you can see a combined view of chrages incurred by all your accounts
* Can also take advantage of pricing benefits from aggregated usage, such as volume discounts for EC2 and S3
* Limit of 20 linked accounts for consolidated billing
* Policies can be assigned at different points in the hierarchy
* Can help with cost control thgouh volume discounts
* Unused reserved EC2 instances are applied across the group
* Paying accounts should be used for billing purposes only
* Billing alerts can be setup at the paying account which shows billing for all linked accounts
* **Core Concepts**
  + Some of the core concepts you need to understand are listed here:
    - **AWS Organization –** An organization is a collection of AWS accounts that you can organize into a hierarchy and manage centrally
    - **AWS Account –** An account is a container for your AWS resources
    - **Master Account –** Master account is the AWS account you use to create your organization
    - **Member Account –** Member account is an aws account, other than the master account, that is part of an organization
    - **Administrative Root –** Administrative root is the starting point for organizing your AWS accounts. The administrative root is the top-most container in your organizations hierarchy
    - **Organizational Unit(OU) –** An organizational Unit is a group of AWS accounts within an organization. An OU can also contain other Ous enabling you to create a hierarchy
    - **Policy –** A Policy is a ‘document’ with one or more statements that define the controls that you want to apply to a group of AWS accounts. AWS Organizations supports a specific type of policy called a Service Control Policy(SCP). An SCP defines the AWS service actions, such as EC2 RunInstances, that are available for use in different accounts within an organization
* **Migrating accounts between organizations**
  + Accounts can be migrated between organizations
  + You must have root or IAM access to both the member and master accounts
  + Use the AWS Organizations console for just a few accounts
  + Use the AWS Organizations API or AWS CLI if there are many accounts to migrate
  + Billing history and billing reports for all accounts stay with the master account in an organization
  + Before migration download any billing or report history for any member accounts that you want to keep
  + When a member account leaves an organization, all charges incurred by the account are likely charged directly to the standalone account
  + Even if the account move only takes a minute to process, it is likely that same charges will be incurred by the member account
* **Resource Groups**
  + You can use resource groups to organize your AWS resources
  + In AWS a resource is an entity that you can work with
  + Resoursce groups make it easier to manage and automate tasks on large numbers of resources at one time
  + Resource gorups allow you to group resources and then tage them
  + The Tag Editor assists with finding resources and adding tags
  + **You can access Resource Groups through any of the following entry points:**
    - On the navigation bar of the AWS Management Console
    - In the AWS Systems Manager console, from the left navigation pane entry for Resource Groups
    - By using the Resource Groups API, in AWS CLI commands or AWS SDK programming languages
  + A Resource Group is a colleciton of AWS resources that are all in the same AWS region, and that match criteria provided in a query
  + Both query types include resources that are specified in the format AWS::service::resource
    - **Tag-based –** Tag-base queries include lists of resources and tags. Tags are keys that help identify and sort your resources within your organization. Otpionally tags include values for keys
    - **AWS CloudFormation stack-based –** In an AWS CF stack-based query, you choose a CF stack in your account in the current region, and then choose resource types within the stack that you want to be in the group. You can base your query on only one CF stack
  + Resource Groups can be nested; a resource group can contain existing resource groups in the same region