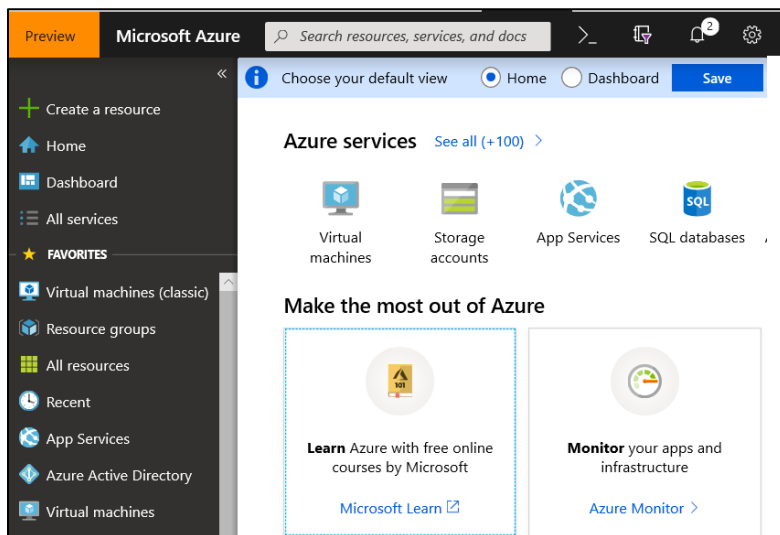**Day 1**

Module Overview

- Azure Portal and Cloud Shell
- Azure PowerShell and CLI
- Resource Manager
- ARM Templates

Azure Portal

1. **Search resources, services, and docs**
- **Manage resources**
- **Create customized dashboards and favorites**
- **Access the Cloud Shell**
- **Receive notifications**

Reference : **https://docs.microsoft.com/en-us/azure/azure-portal**

Azure Cloud Shell

- Interactive, browser-accessible shell
- Offers either Bash or PowerShell
- Is temporary and provided on a per-session, per-user basis
- Requires a resource group, storage account, and Azure File share
- Authenticates automatically
- Integrated graphical text editor
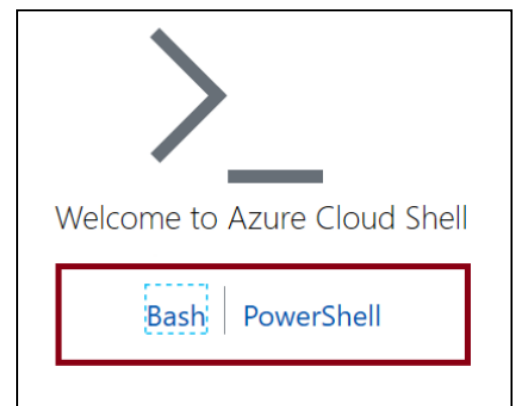
- Is assigned one machine per user account
- Times out after 20 minutes

Reference : https://docs.microsoft.com/en-us/azure/cloud-shell/overview

PowerShell Cmdlets and Modules

```
Get-Module
# Output
ModuleType Version    Name
---------- -------    ----
Manifest   3.1.0.0    Microsoft.PowerShell.Management
Manifest   3.1.0.0    Microsoft.PowerShell.Utility
Binary     1.0.0.1    PackageManagement
Script     1.0.0.1    PowerShellGet
Script     2.0.0      PSReadline
```

- Cmdlets follow a verb-noun naming convention; shipped in modules

- Modules are a DLL file with the code to process each cmdlet

- Load cmdlets by loading the module containing them

- Use **Get-Modules** to see a list of loaded modules

Azure CLI

az vm restart -g MyResourceGroup -n MyVm

- Cross-platform command-line program

- Runs on Linux, macOS, and Windows

- Can be used interactively or through scripts

- Commands are structured in _groups_ and _subgroups_

- Use _find_ to locate commands

- Use _--help_ for more detailed information

Reference: https://docs.microsoft.com/en-us/cli/azure/?view=azure-cli-latest

Resource Manager Overview

- Resource Manager
- Terminology
- Resource Group Deployments
- Resource Manager Locks
- Moving Resources
- Removing Resources and Resource Groups
- Demonstration- Resource Groups
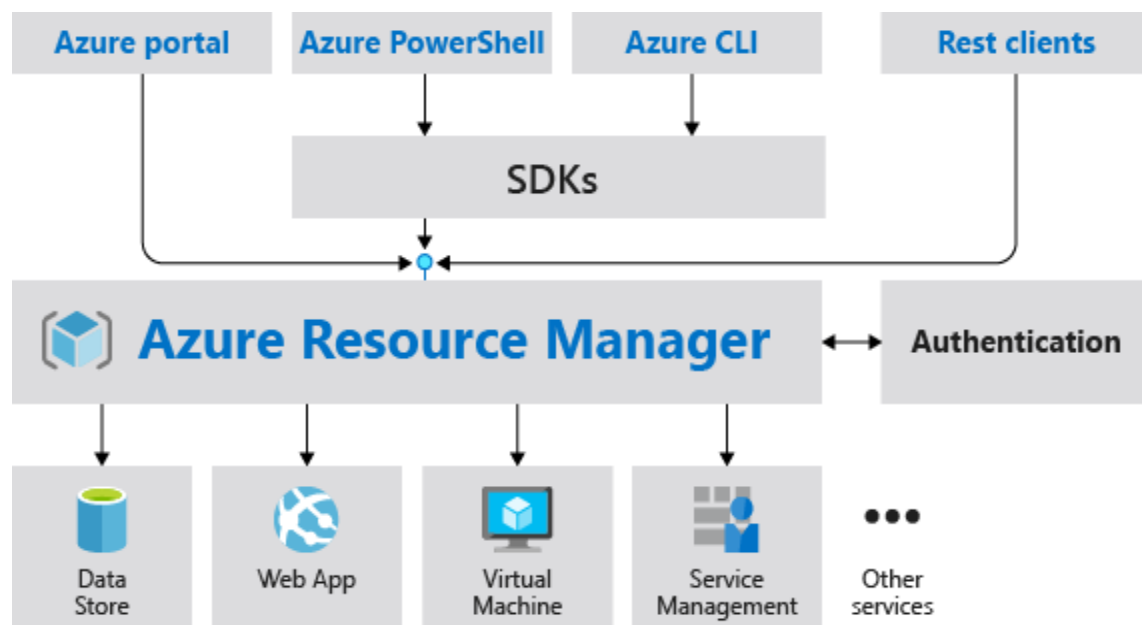
- Provides a consistent management layer
- Enables you to work with the resources in your solution as a group
- Deploy, update, or delete in a single, coordinated operation
- Provides security, auditing, and tagging features
- Choose the tools and APIs that work best for you

Terminology

- A **resource** is simply a single service instance in Azure

- A **resource group** is a logical grouping of resources

- An **Azure resource manager template** is a JSON file that allows you to declaratively describe a set of resources

- A **declarative syntax** is what a template uses to state what you intend to create

- A **resource provider** is service that supplies the resources you can deploy and manage through Resource Manager

## Resource Groups and Deployments
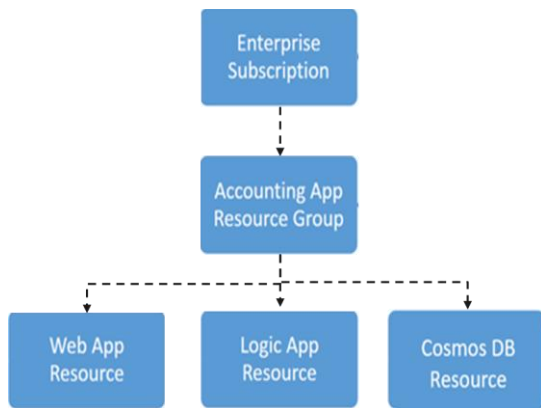
- Resources can only exist in one resource group

- Groups cannot be renamed

- Groups can have resources of many different types (services)

- Groups can have resources from many different regions
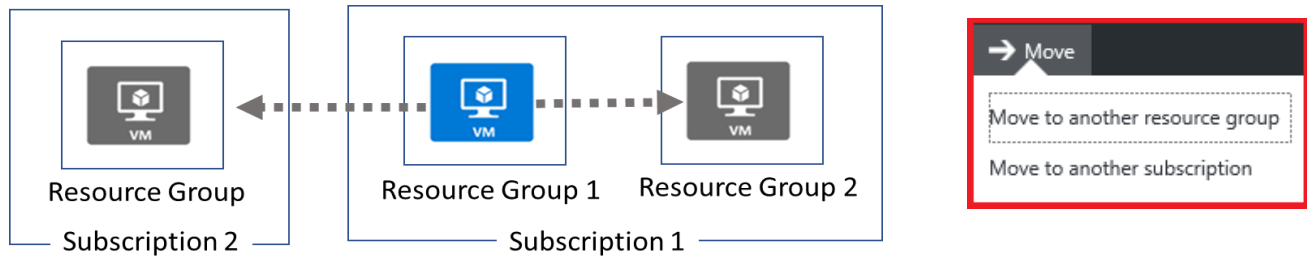
- Deployments are incremental

Reference: https://docs.microsoft.com/en-us/azure/azure-resource-manager/management/overview

Resource Manager Locks

- Associate the lock with a subscription, resource group, or resource

- Locks are inherited by child resources

- Read-Only locks prevent any changes to the resource

- Delete locks prevent deletion
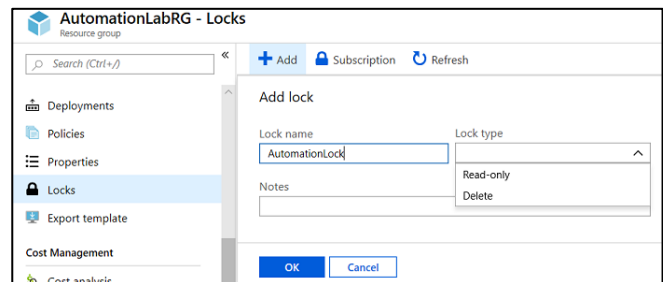

Moving Resources

- When moving resources, both the source group and the target group are locked during the operation
- Services that cannot be moved: AD Domain Services, ExpressRoute, and Site Recovery

ARM Templates

ARM Templates Overview

- Template Advantages
- Template Schema
- Template Parameters
- Template Variables
- QuickStart Templates
- Demonstration – QuickStart Templates
- Demonstration – Run Templates with PowerShell
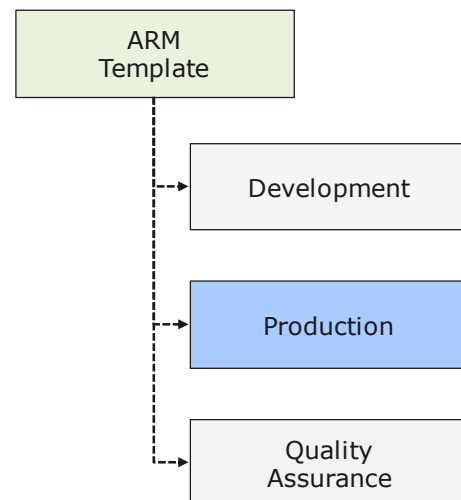
Template Advantages

- Improves consistency
- Express complex deployments
- Reduce manual, error prone tasks
- Express requirements through code
- Promotes reuse
- Modular and can be linked
- Simplifies orchestration

Reference: https://docs.microsoft.com/en-us/azure/templates