

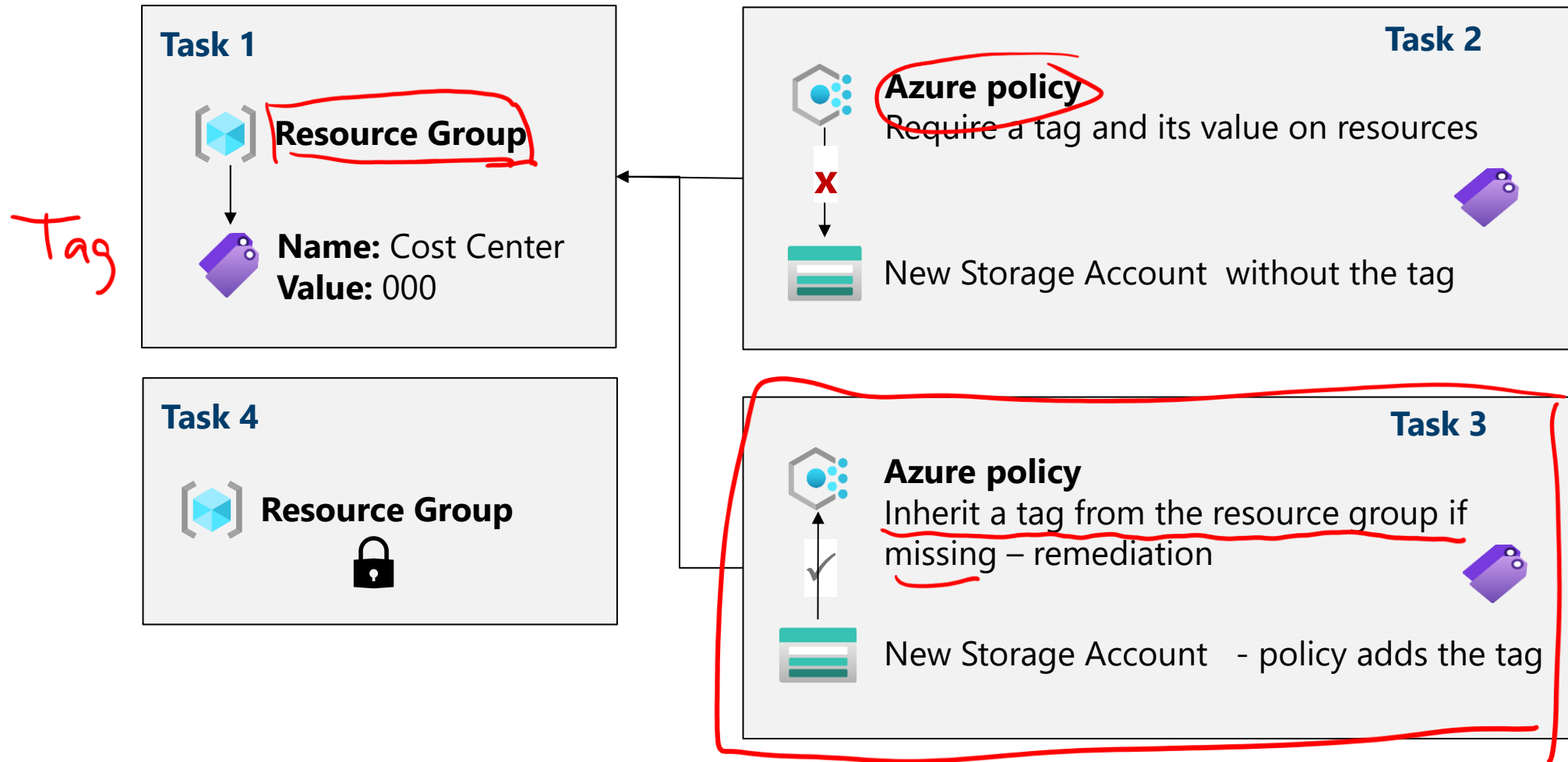
AZ-104 *Tag 2*

Administer Azure Resources

Guten Morgen!



Lab 02b – Architecture diagram



AZ-104 Course Outline

01: Administer Identity

02: Administer Governance and Compliance

03: Administer Azure Resources

04: Administer Virtual Networking

05: Administer Intersite Connectivity

06: Administer Network Traffic Management

07: Administer Azure Storage

08: Administer Azure Virtual Machines

09: Administer PaaS Compute Options

10: Administer Data Protection

11: Administer Monitoring

Policy Roles (RBAC)

Tools ARM Lab

VNet TCP/IP Vint Cerf DNS

VNet2

LB FW AppGW Front Door TM

12³⁰ - 13³⁰

03

Learning Objectives - Azure Resources

- Configure Azure Resources with Tools
 - Manage services with the Azure portal
 - Introduction to PowerShell
 - Introduction to Bash
- Configure Resources with ARM Templates
- Lab 03b - Manage Azure resources by Using ARM Templates

Configure Azure Resources with the Azure Portal, PowerShell, and the CLI



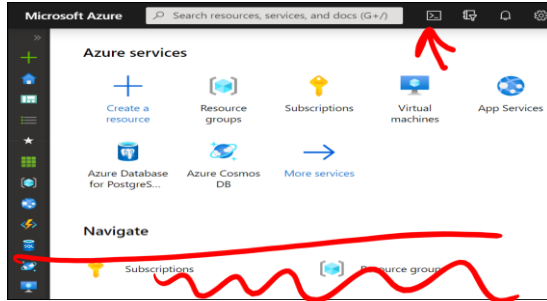
Compare Administrator tools

Cmd
Win PowerShell
PowerShell 5
7
x

ARM
ARM risc

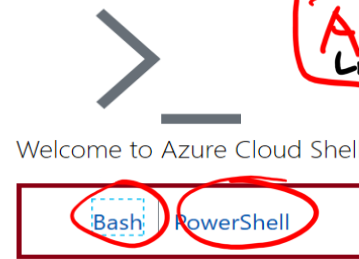
Azure

Azure Portal



- View and manage resources
- Visual interface
- Unified hub – training and documentation
- Personalize your experience
- Mobile app
- Access the Cloud Shell
- One-off creation scenarios

Azure Cloud Shell



Linux

- Interactive and browser-accessible with file storage
- Offers Bash or PowerShell
- Authenticates automatically
- Provided on a per-session and per-user basis
- Temporary - times out after 20 minutes

• installed vi emacs
cli code (monaco)
Az

Azure PowerShell and CLI

```
az vm restart -g  
MyResourceGroup -n MyVm
```

- Command line programs
- Interactive and scripting modes
- Cross-platform
- Good for repeatable deployments
- Familiar coding experience

Review Resource Manager Benefits

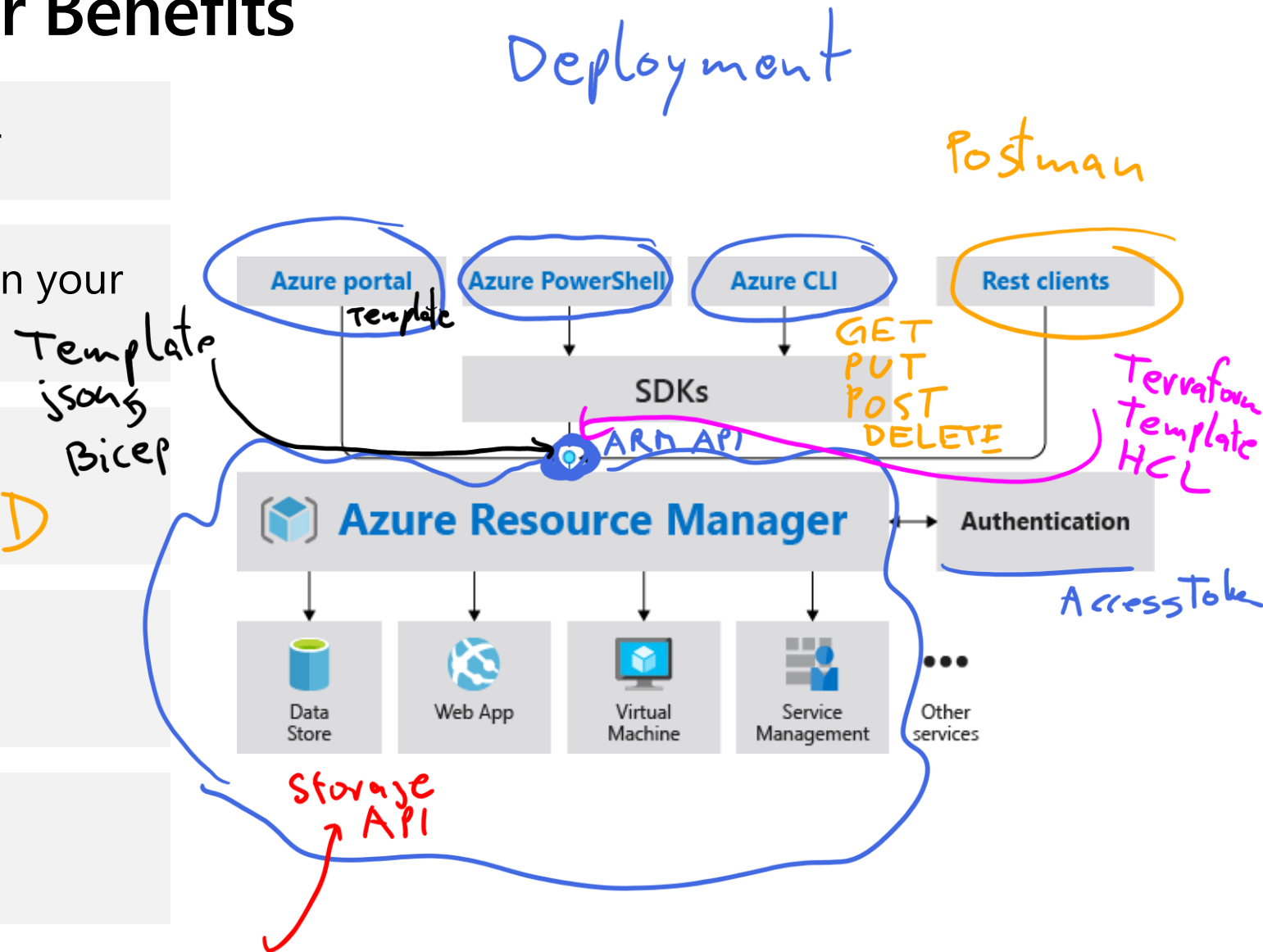
Provides a consistent management layer

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



Use 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



Welcome to Azure Cloud Shell

Bash

PowerShell

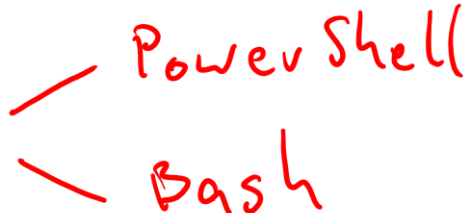
Use Azure PowerShell

`New-AzVm` ← Backtic

```
-ResourceGroupName "CrmTestingResourceGroup" `
-Name "CrmUnitTests" `
-Image "UbuntuLTS" `
...
```

- Connect to your Azure subscription and manage resources
- Adds the Azure-specific commands
- Available inside a browser via the Azure Cloud Shell
- Available as a local installation on Linux, macOS, or Windows
- Has an interactive and a scripting mode

Use Azure CLI

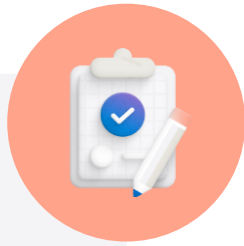


PowerShell
Bash

```
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

Learning Recap – Azure Resources with Tools



**Check your
knowledge
questions and
additional
study**

- Manage services with the Azure portal
- Introduction to PowerShell
- Introduction to Bash
- Use Azure Resource Manager

Configure Resources with ARM Templates

json
↑
Bicep } decompile



Review ARM Template Advantages

Improves consistency and promotes reuse

Reduce manual, error prone, and repetitive tasks

Express complex deployments

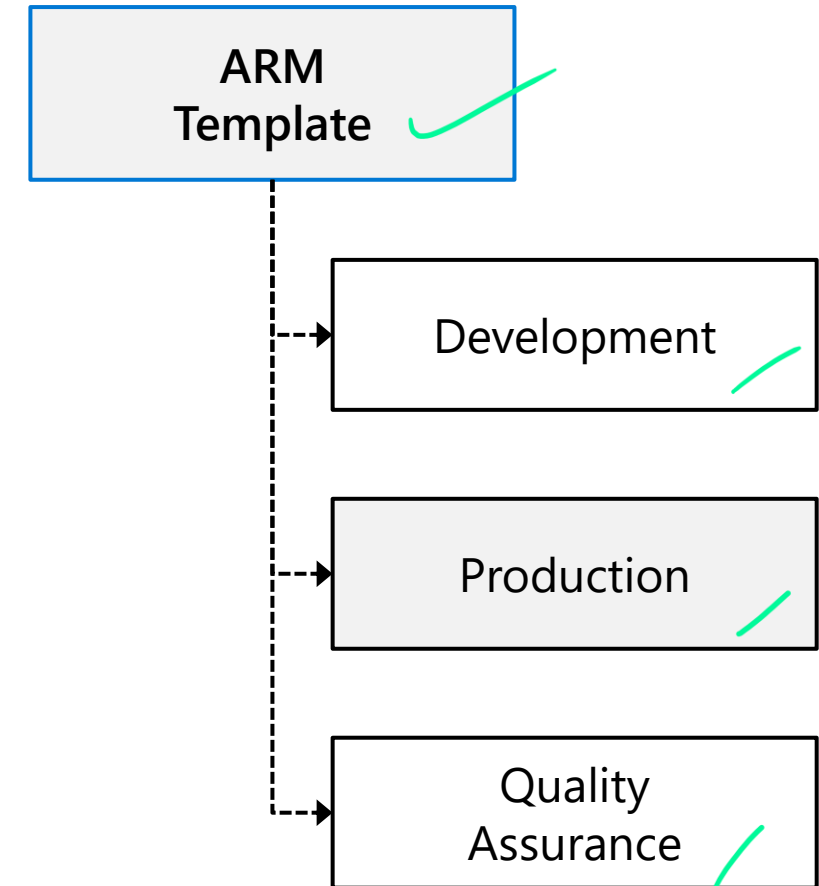
Express requirements through code

Provides validation tasks

Modular and can be linked

Bicep

Simplifies orchestration



Explore the JSON Template Schema

Defines all the Resource manager resources in a deployment

Written in JSON

A collection of key-value pairs

Each key is a string

Each value can be a string, number, Boolean expression, list of values, object

```
{  
  "$schema":  
    "http://schema.management.  
    azure.com/schemas/2019-04-  
    01/deploymentTemplate.json#",  
  "contentVersion": "",  
  "parameters": {},  
  "variables": {},  
  "functions": [],  
  "resources": [],  
  "outputs": {}  
}
```

Explore the JSON Template Parameters

- Specifies which values are configurable when the template runs
- This example has two parameters: one for a VM's username (adminUsername), and one for its password (adminPassword)

```
"parameters": {  
  "adminUsername": {  
    "type": "string",  
    "metadata": {  
      "description": "Username for the VM."  
    }  
  },  
  "adminPassword": {  
    "type": "securestring",  
    "metadata": {  
      "description": "Password for the VM."  
    }  
  }  
}
```

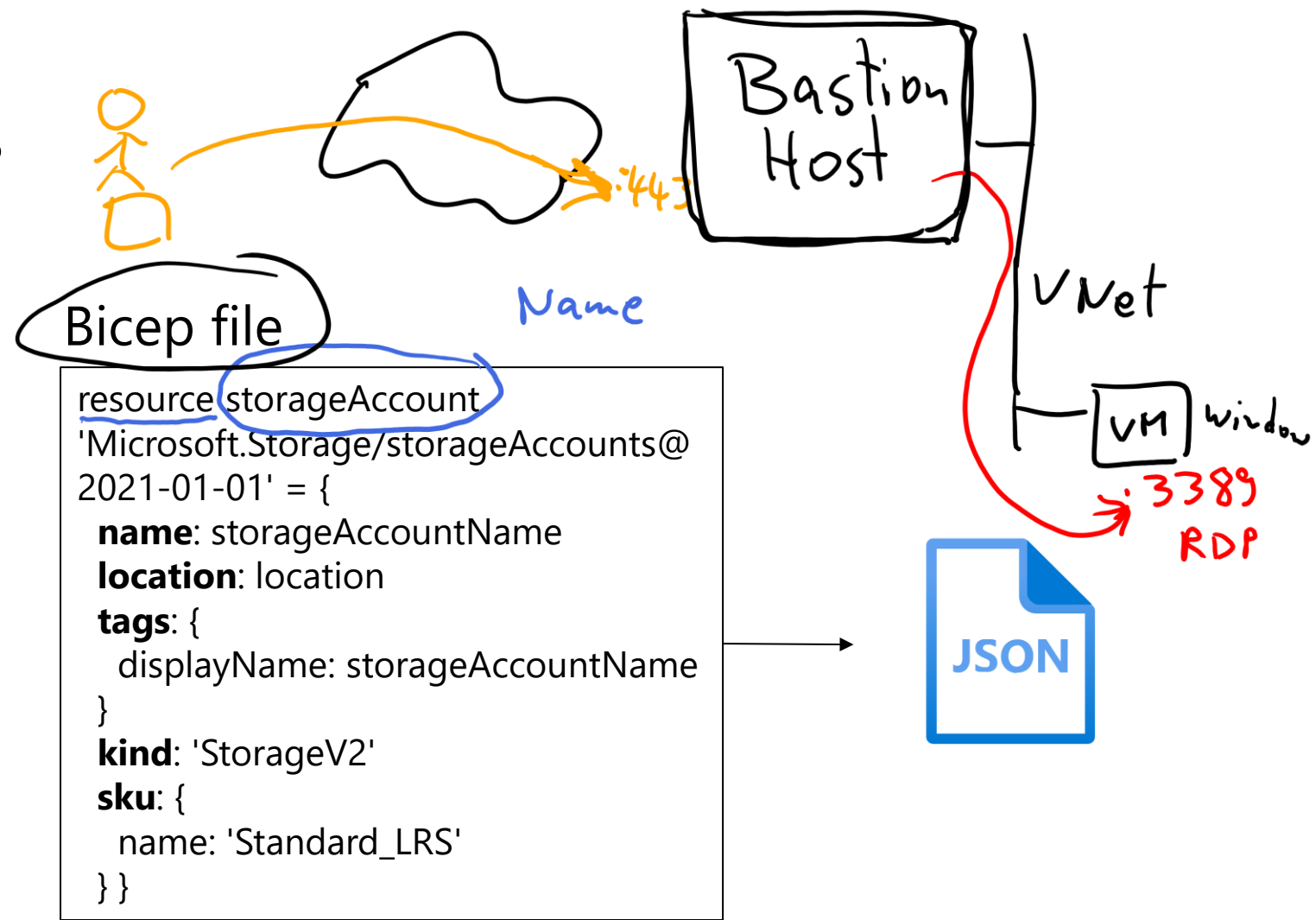
Consider Azure Bicep Files

Simpler syntax for writing templates

Smaller module files you can reference from a main template

Automatically detect dependencies between your resources

Visual Studio Code extension with validation and IntelliSense



output: storage Account.

New-AzResourceGroupDeployment
az deployment group ...

Deployment .bicep

- Portal (json only)
- PS
- CLI

Learning Recap – Azure Resource Manager templates



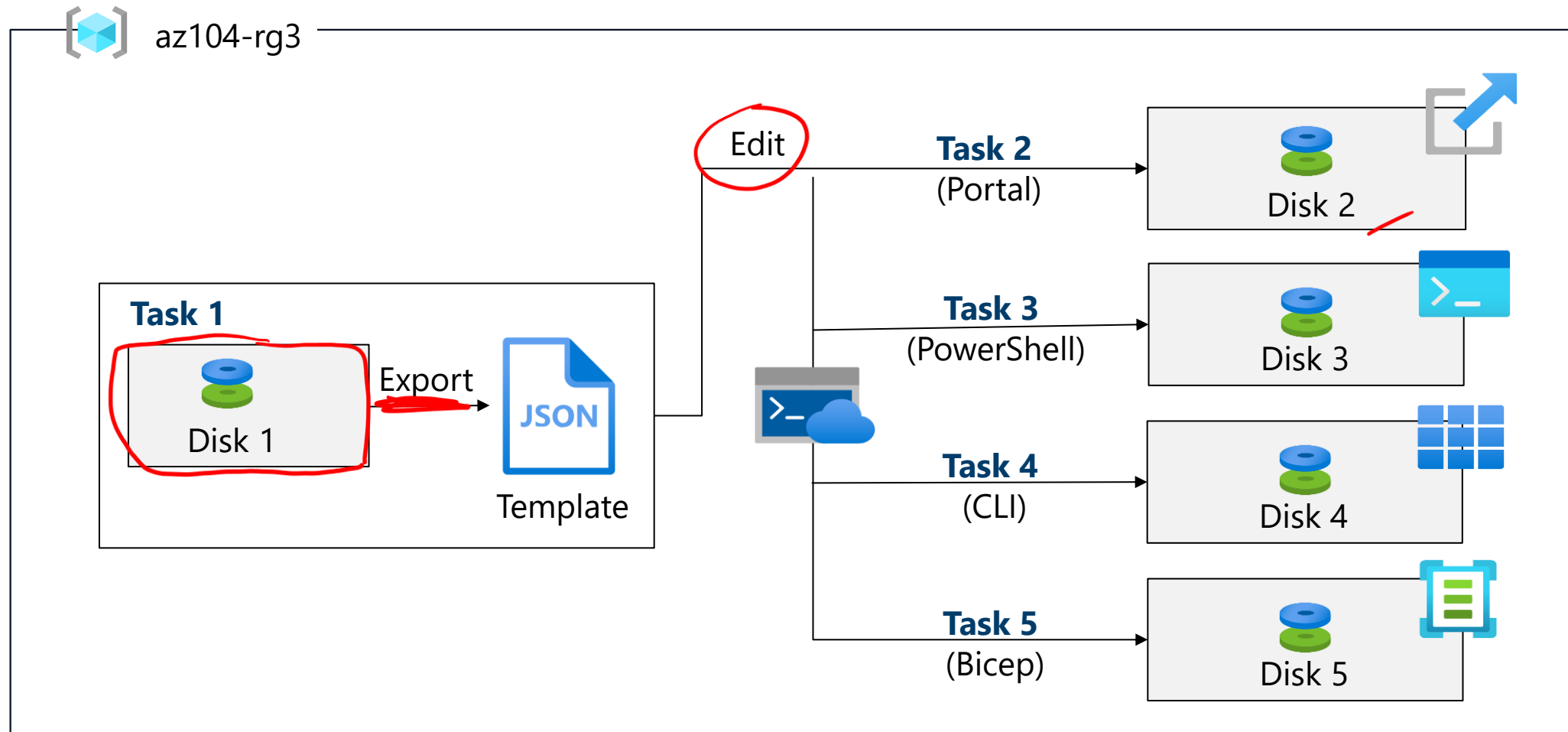
**Check your
knowledge
questions and
additional
study**

- Create Azure resources using Azure Resource Manager templates
- Deploy Azure infrastructure by using JSON ARM templates
- Introduction to infrastructure as code using Bicep
- Build your first Bicep template

Lab - Manage Azure resources by Using ARM Templates



Lab 03 – Architecture diagram



End of presentation

