Microsoft Azure

AZ-104T00A Administer Azure Resources

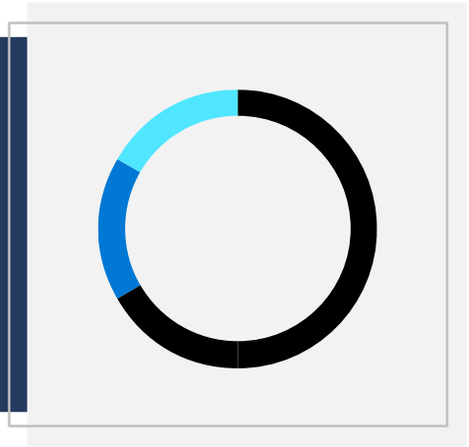
Administer Azure Resources Introduction

Configure Azure Resources with Tools

Configure Resources with ARM Templates

Lab 03b - Manage Azure resources by Using ARM Templates
Lab 03c - Manage Azure resources by Using Azure PowerShell (optional)
Lab 03d - Manage Azure resources by Using Azure CLI (optional)

Configure Azure Resources with Tools



Configure Azure Resources with Tools Introduction

Compare Administration tools (4 student topics)

Demonstration – Azure Portal

Demonstration – Azure Cloud Shell

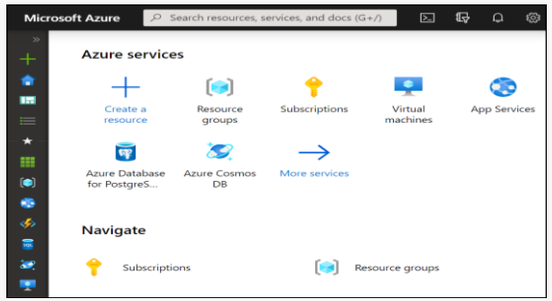
Demonstration – Working with PowerShell locally (optional)

Demonstration – Azure CLI (optional)

Summary and Resources

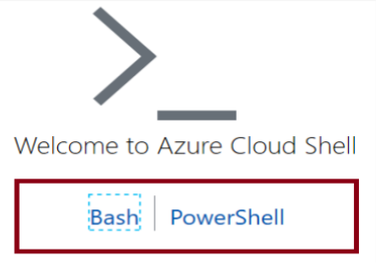
Compare Administrator tools

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



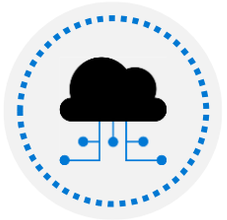
- Interactive and browser-accessible
- Offers Bash or PowerShell
- Authenticates automatically
- Provided on a per-session and per-user basis
- Temporary - times out after 20 minutes

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

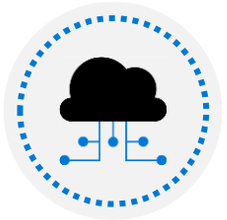
Demonstration – Azure Portal (optional)



Help and keyboard shortcuts

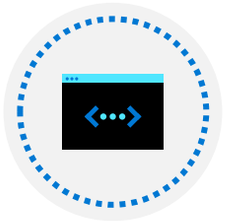
Customizing your experience

Demonstration – Cloud Shell (optional)



Configure the Cloud Shell

Experiment with Azure PowerShell

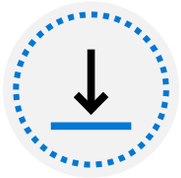


Experiment with Bash shell

Experiment with the Cloud Editor

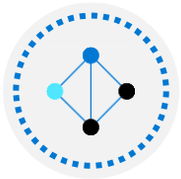
Demonstration – Working with PowerShell (optional)

Install the Az module



Install NuGet (if needed)

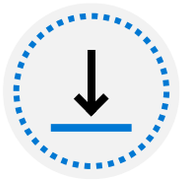
Trust the repository



Connect to Azure and view your subscription information

Create resources

Demonstration – Working with the CLI (optional)



Install the CLI

Verify the CLI installation

Login to Azure

Create a resource group

Verify the resource group

Summary and Resources – Configure Azure Resources with Tools

Knowledge Check Questions

Microsoft Learn Modules (docs.microsoft.com/Learn)

Manage services with the Azure portal (Sandbox)

Introduction to PowerShell (Sandbox)

Control Azure services with the CLI (Sandbox)

Control and organize Azure resources with Azure Resource Manager

A *sandbox* indicates a hands-on exercise.

Configure Resources with ARM Templates

Configure Resources with ARM Templates Introduction

Review ARM Template Advantages

Explore the JSON Template Schema

Explore the JSON Template Parameters

Consider Azure Bicep Templates

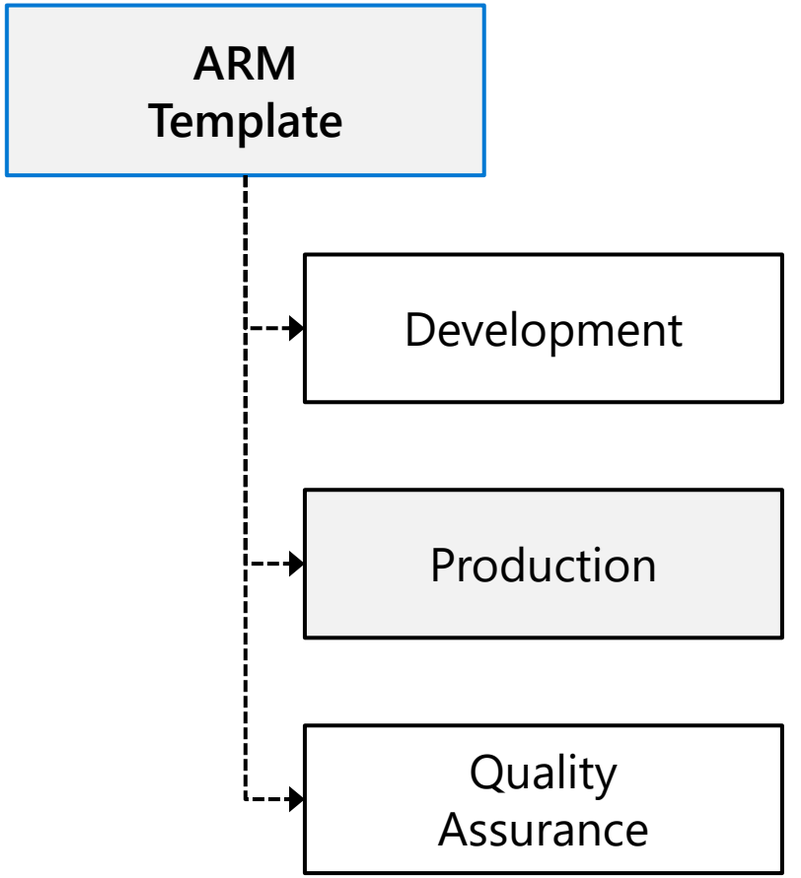
Demonstration – QuickStart Templates

Demonstration – Run Templates with PowerShell (optional)

Summary and Resources

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
- 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

Specify 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."
    }
  }
}
```

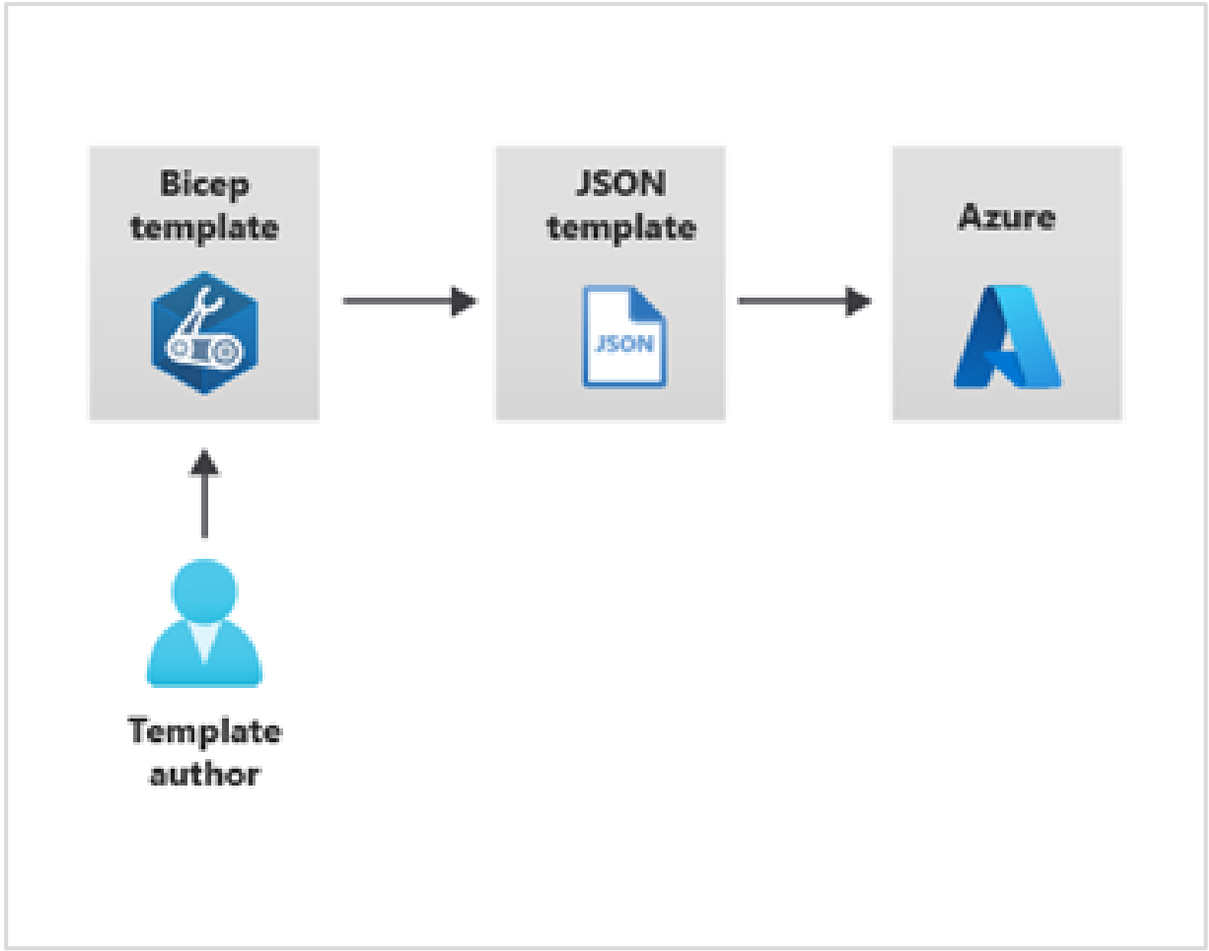
Consider Azure Bicep Templates

Simpler syntax for writing templates

Smaller module files you can reference from a main template

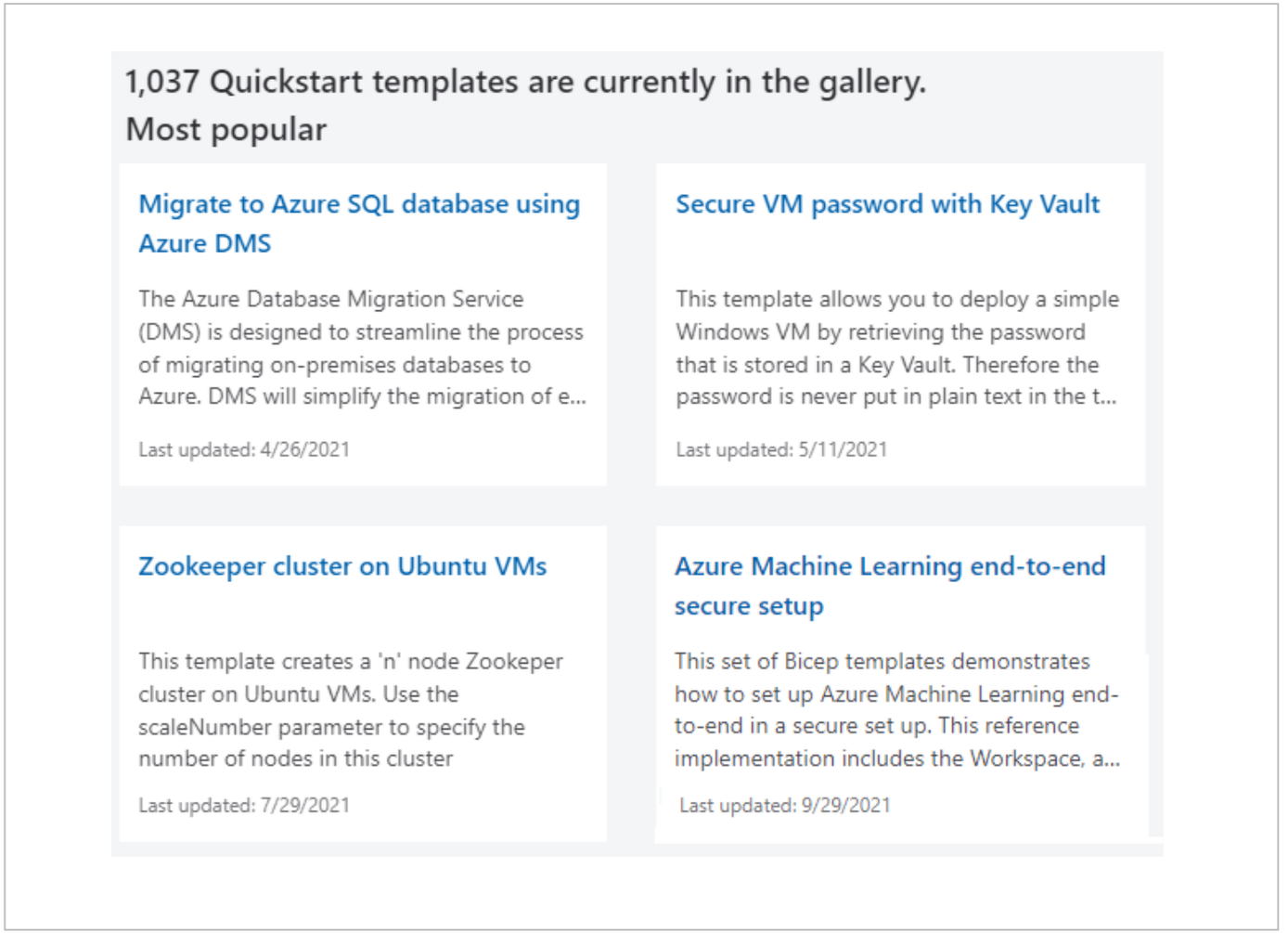
Automatically detect dependencies between your resources

Visual Studio Code extension with validation and IntelliSense

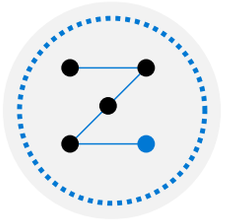


Demonstration - Quickstart templates

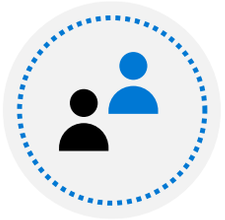
- ✓ Explore the QuickStart gallery
- ✓ Explore a template



Demonstration – Run Templates with PowerShell (optional)



Connect to your subscription



Create the resource group

Deploy the template into the resource group

Verify the template deployed

Summary and Resources

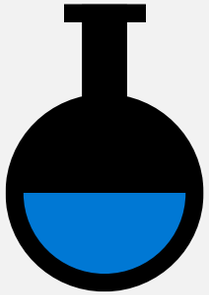
Knowledge Check Questions

Microsoft Learn Modules (docs.microsoft.com/Learn)

- Create Azure resources using Azure Resource Manager templates
- Deploy Azure infrastructure by using JSON ARM templates (Sandbox)
- Build your first Bicep template (Sandbox)

A *sandbox* indicates a hands-on exercise.

Lab 03b - Manage Azure resources by Using ARM Templates
Lab 03c - Manage Azure resources by Using Azure PowerShell (optional)
Lab 03d - Manage Azure resources by Using Azure CLI (optional)



Lab 03b – Manage Azure resources with templates

Lab scenario

Now that you explored the basic Azure administration capabilities associated with provisioning resources and organizing them based on resource groups by using the Azure portal, you need to carry out the equivalent task by using Azure Resource Manager templates

Objectives

Task 1:

Review an ARM template for deployment of an Azure managed disk

Task 2:

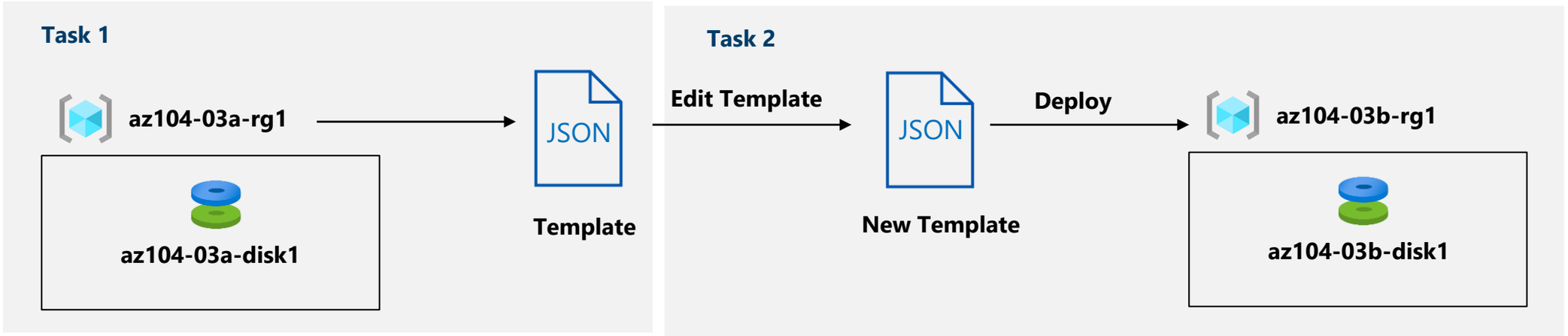
Create an Azure managed disk by using an ARM template

Task 3:

Review the ARM template-based deployment of the managed disk

Next slide for an architecture diagram

Lab 03b – Architecture diagram



Lab 03c – Manage Azure resources with PowerShell (optional)

Lab scenario

Now that you explored the basic Azure administration capabilities associated with provisioning resources and organizing them based on resource groups by using the Azure portal and Azure Resource Manager templates, you want the equivalent tasks with Azure PowerShell. To avoid installing Azure PowerShell modules, you will leverage the Azure Cloud Shell

Objectives

Task 1:

Start a PowerShell session in Azure Cloud Shell

Task 2:

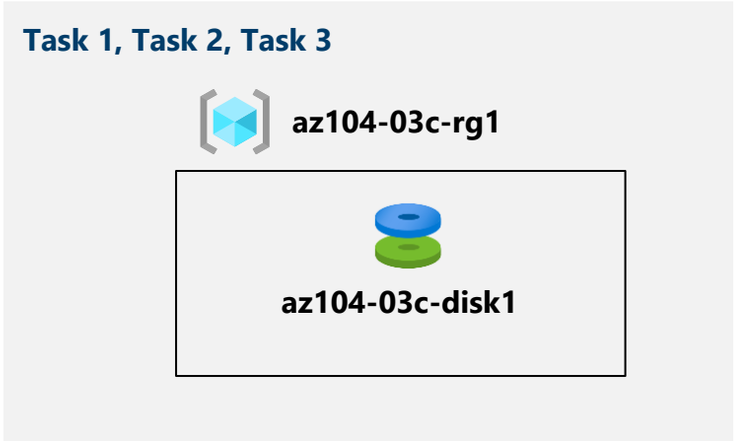
Create a resource group and an Azure managed disk with Azure PowerShell

Task 3:

Configure the managed disk by using Azure PowerShell

Next slide for an architecture diagram

Lab 03c – Architecture diagram



Lab 03d – Manage Azure resources with the Azure CLI (optional)

Lab scenario

Now that you explored the basic Azure administration capabilities associated with provisioning resources and organizing them based on resource groups by using the Azure portal, Azure Resource Manager templates, and Azure PowerShell, you need to carry out the equivalent task by using Azure CLI. To avoid installing Azure CLI, you will leverage Bash environment available in Azure Cloud Shell

Objectives

Task 1:

Start a Bash session in Azure Cloud Shell

Task 2:

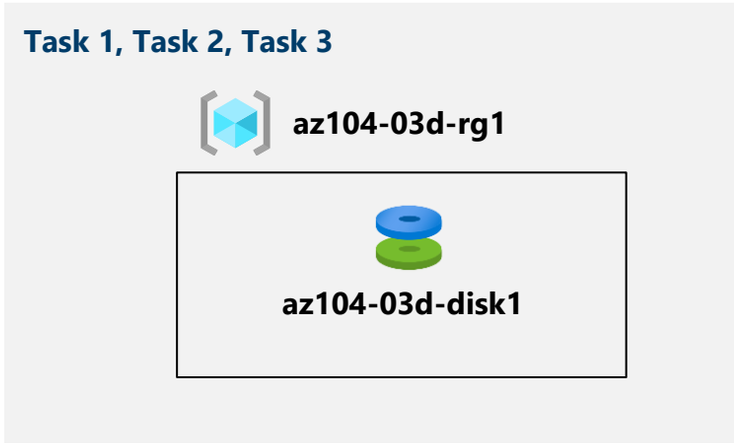
Create a resource group and a managed disk by using Azure CLI

Task 3:

Configure the managed disk by using Azure CLI

Next slide for an architecture diagram

Lab 03d – Architecture diagram

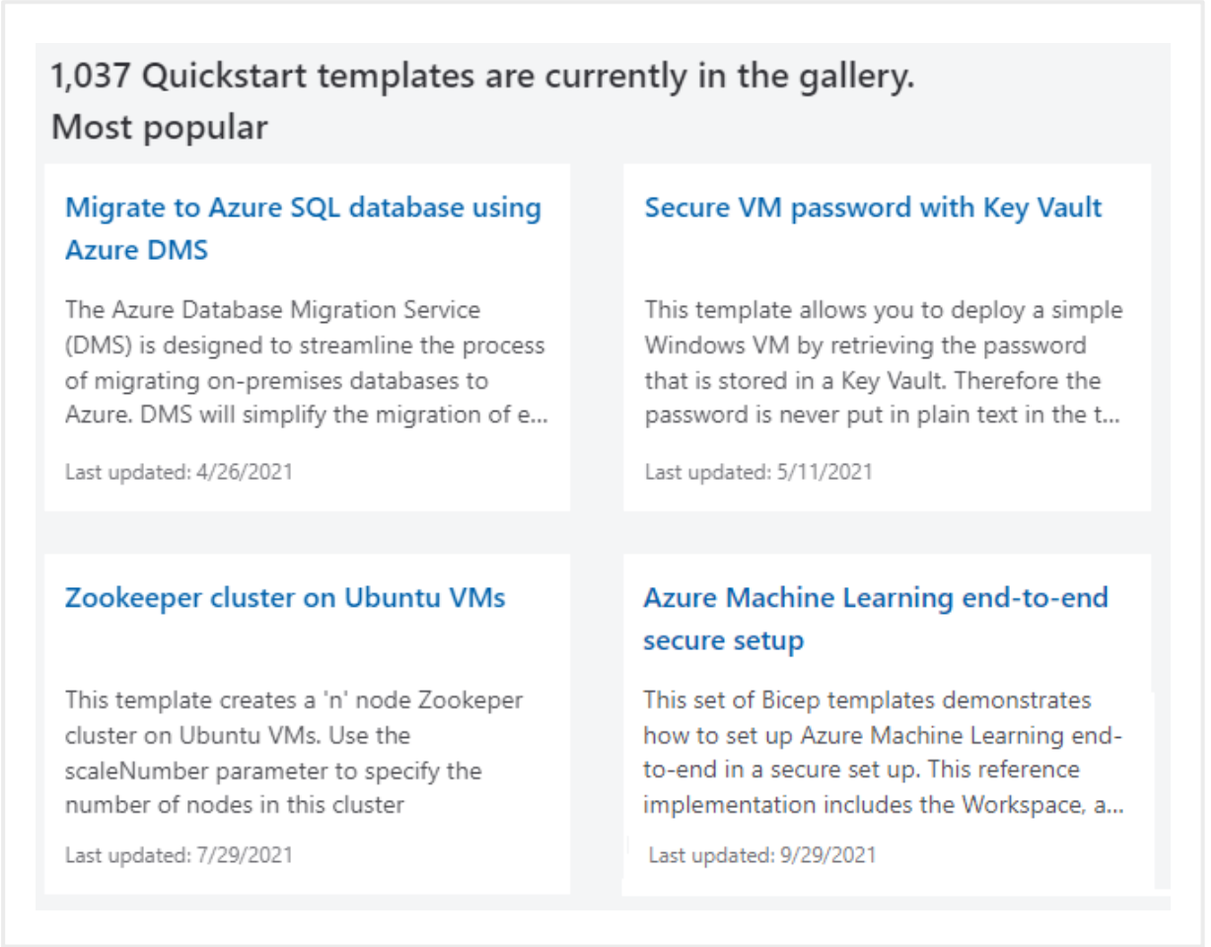


End of presentation

Review QuickStart Templates

Resource Manager templates provided by the Azure community

Provides everything you need to deploy your solution or serves as a starting point for your template



https://azure.microsoft.com/resources/templates/