DevOps

Week 05

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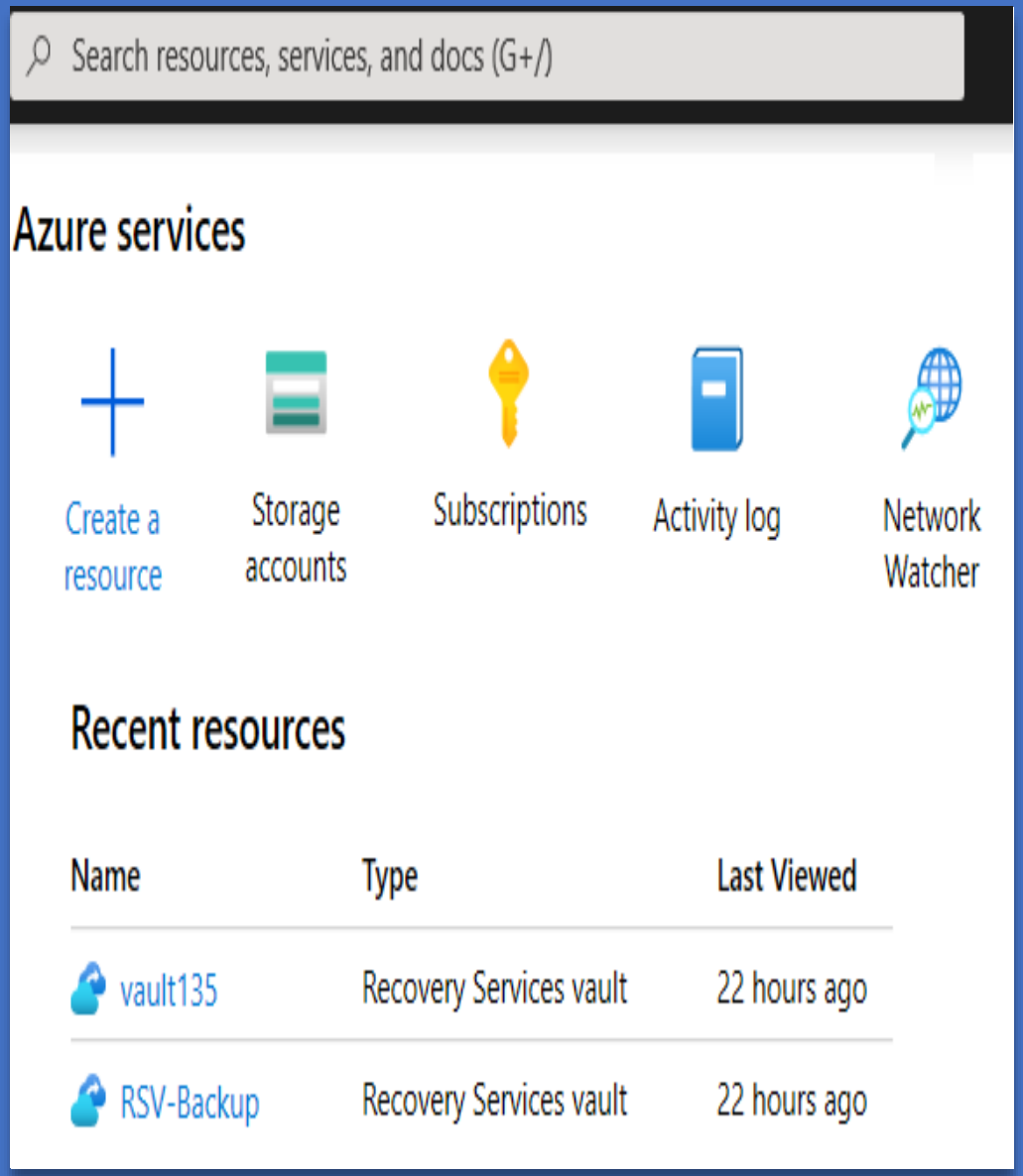
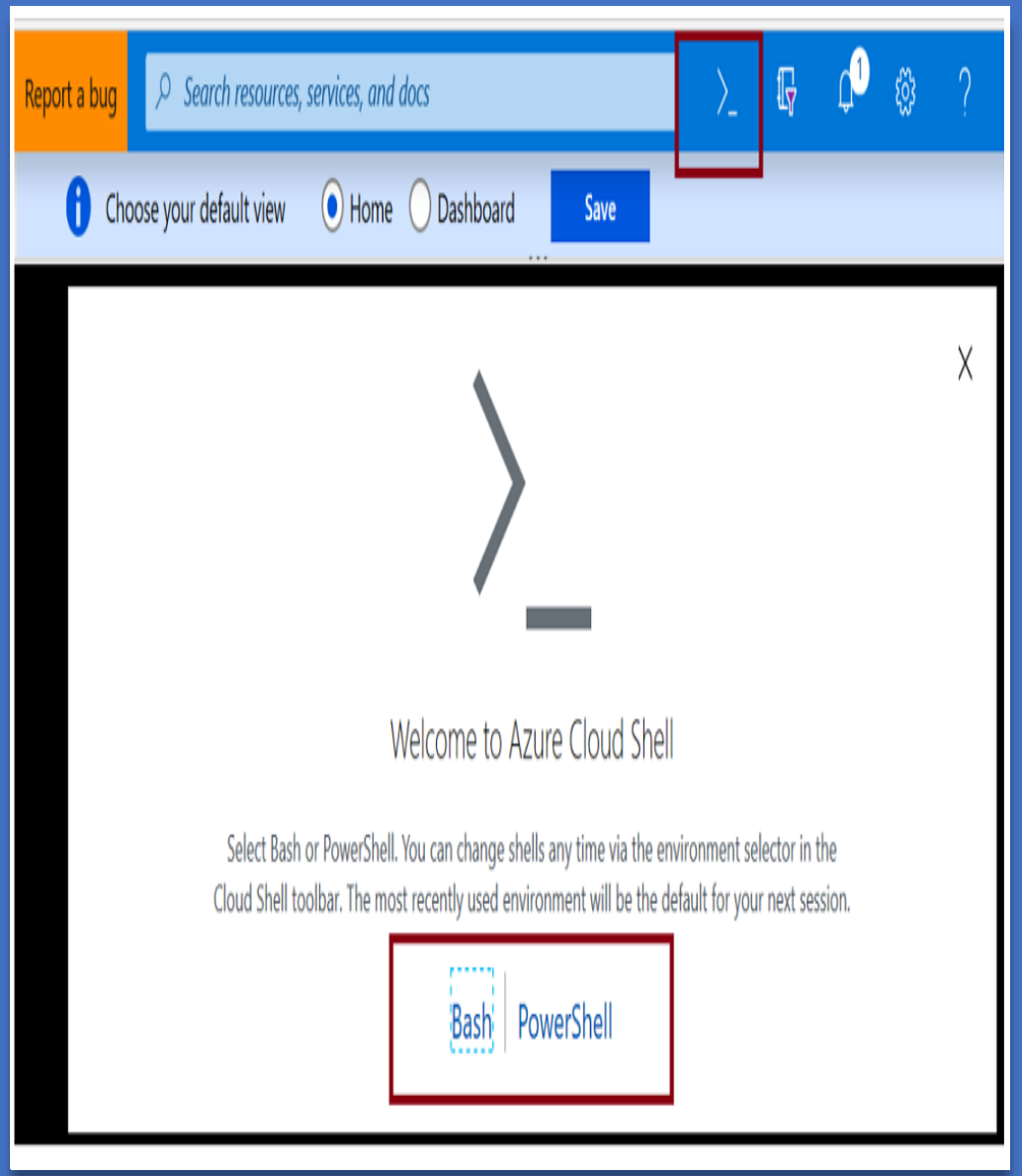
Azure Portal

- The Azure portal lets you build, manage, and monitor everything from simple web apps to complex cloud applications in a single, unified console.
  - Search resources, services, and docs.
  - Manage resources.
  - Create customized dashboards and favorites.
  - Access the Cloud Shell.
  - Receive notifications.
  - Links to the Azure documentation.



Azure Cloud Shell

- Azure Cloud Shell is an interactive, browser-accessible shell for managing Azure resources. It provides the flexibility of choosing the shell experience that best suits the way you work. Linux users can opt for a Bash experience, while Windows users can opt for PowerShell.
- Cloud Shell enables access to a browser-based command-line experience built with Azure management tasks in mind. You can use Cloud Shell to work untethered from a local machine in a way only the cloud can provide.



Azure Cloud Shell - Features

- Is temporary and requires a new or existing Azure Files share to be mounted.
- Offers an integrated graphical text editor based on the open-source Monaco Editor.
- Authenticates automatically for instant access to your resources.
- Runs on a temporary host provided on a per-session, per-user basis.
- Requires a resource group, storage account, and Azure File share.
- Uses the same Azure file share for both Bash and PowerShell.
- Permissions are set as a regular Linux user in Bash.

Azure PowerShell

- Azure PowerShell is a module that you add to Windows PowerShell or PowerShell Core to enable you to connect to your Azure subscription and manage resources. Azure PowerShell requires PowerShell to function. PowerShell provides services such as the shell window and command parsing. Azure PowerShell adds the Azure-specific commands.
- For example, Azure PowerShell provides the New-AzVm command that creates a virtual machine inside your Azure subscription. To use it, you would launch the PowerShell application and then issue a command.

Azure PowerShell

- Azure PowerShell is also available two ways:
  - inside a browser via the Azure Cloud Shell, or
  - with a local installation on Linux, macOS, or the Windows operating system.
- In both cases, you have two modes from which to choose:
  - you can use it in interactive mode in which you manually issue one command at a time, or
  - in scripting mode where you execute a script that consists of multiple commands.

Azure CLI

- Azure CLI is a command-line program to connect to Azure and execute administrative commands on Azure resources. It runs on Linux, macOS, and Windows, and allows administrators and developers to execute their commands through a terminal, command-line prompt, or script instead of a web browser.

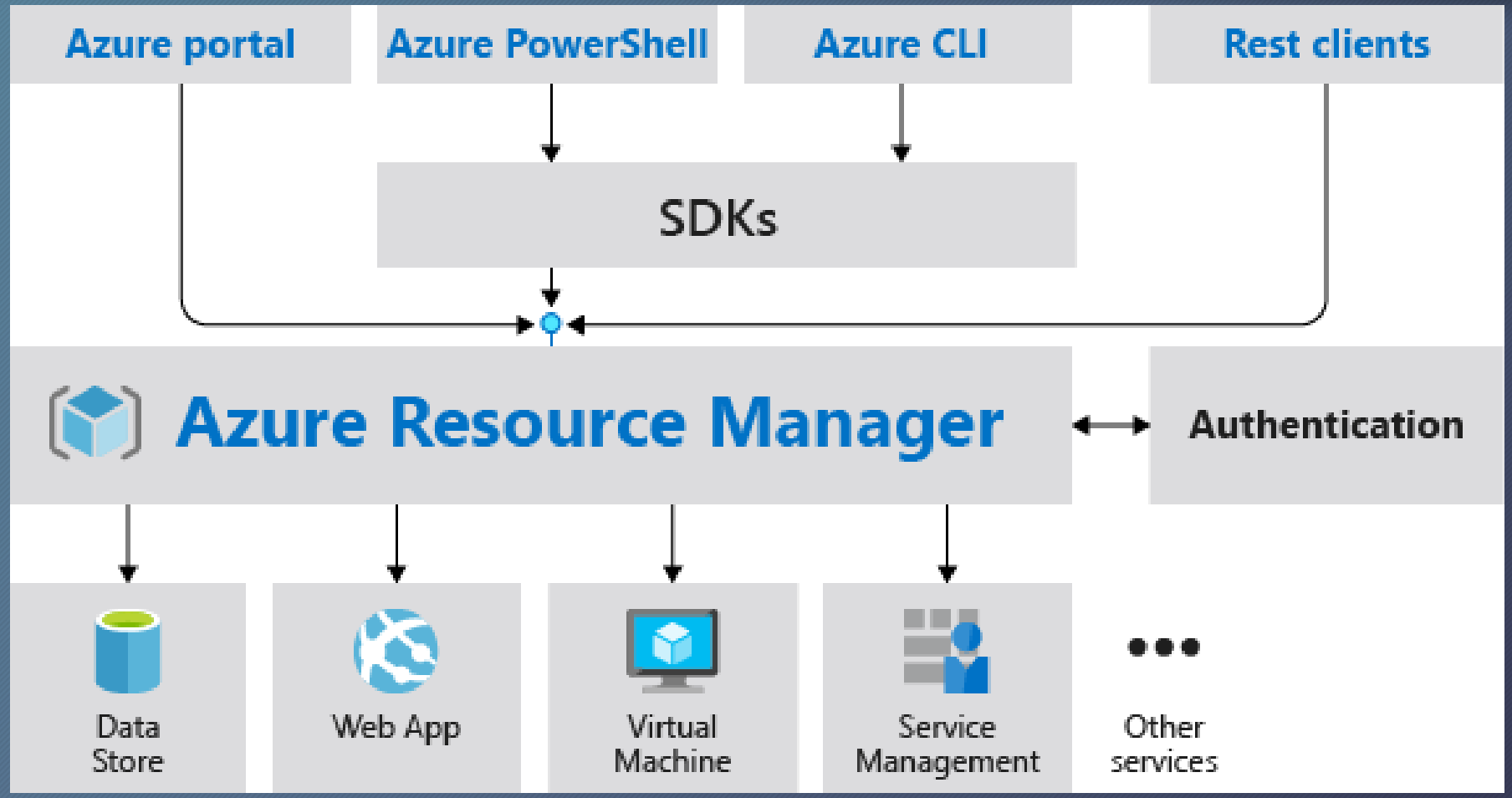
- Azure CLI provides cross-platform command-line tools for managing Azure resources. You can install the CLI locally on computers running the Linux, macOS, or Windows operating systems. You can also use Azure CLI from a browser through Azure Cloud Shell.

Azure Resource Manager

- Azure Resource Manager enables you to work with the resources in your solution as a group. You can deploy, update, or delete all the resources for your solution in a single, coordinated operation. You use a template for deployment and that template can work for different environments such as testing, staging, and production. Azure Resource Manager provides security, auditing, and tagging features to help you manage your resources after deployment.

- Azure Resource Manager provides a consistent management layer to perform tasks through Azure PowerShell, Azure CLI, Azure portal, REST API, and client SDKs.

Azure Resource Manager



Azure Resource Manager

- **Resource** - A manageable item that is available through Azure. Some common resources are a virtual machine, storage account, web app, database, and virtual network, but there are many more.
- **Resource Group** - A container that holds related resources for an Azure solution. The resource group can include all the resources for the solution, or only those resources that you want to manage as a group. You decide how you want to allocate resources to resource groups based on what makes the most sense for your organization.
- **Resource Provider** - A service that supplies the resources you can deploy and manage through Resource Manager. Each resource provider offers operations for working with the resources that are deployed. Some common resource providers are Microsoft.Compute, which supplies the virtual machine resource, Microsoft.Storage, which supplies the storage account resource, and Microsoft.Web, which supplies resources related to web apps.
- **Template** - A JavaScript Object Notation (JSON) file that defines one or more resources to deploy to a resource group. It also defines the dependencies between the deployed resources. The template can be used to deploy the resources consistently and repeatedly.
- Declarative Syntax - Syntax that lets you state "Here is what I intend to create" without having to write the sequence of programming commands to create it. The Resource Manager template is an example of declarative syntax. In the file, you define the properties for the infrastructure to deploy to Azure.