Linux Commands

Linux

Linux is an open-source operating system that is based on the Unix architecture. It serves as the foundation for a wide variety of distributions tailored for different uses.

Components:

- **Kernel:** Core part of the OS, managing hardware and system calls.
- **Shell:** Command-line interface to interact with the kernel.
- **File System:** Organizes and manages files.
- **User Space:** The environment in which users operate, including applications and user interfaces.

Linux Distributions

Popular Linux Distributions:

- **Ubuntu:** User-friendly, widely used for both cloud and desktop environments.
- **CentOS:** Community version of RHEL, stable and suitable for servers.
- **Red Hat Enterprise Linux (RHEL):** Enterprise-grade, with support and services.
- **Debian:** Known for stability and a large repository of software packages.

Linux Commands

- https://drive.google.com/file/d/1aApx_43yGjuE3TSoMTVBRnWXNAcMeuqa/view?usp=sharing

Azure Applications

Where can one host applications in Azure?

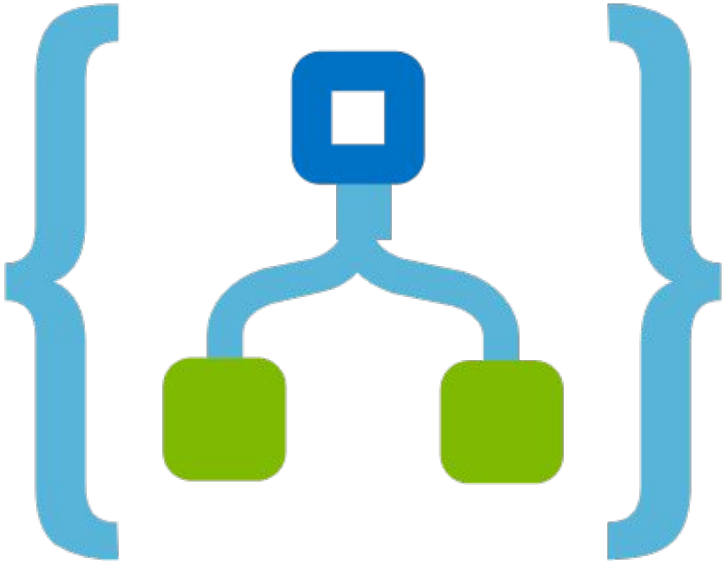
Azure Virtual Machine

One of the ways to host your application is in a VM in Azure Virtual Machine.

This provides you with a lot of control over how you host your application, but you are responsible for maintaining the environment,such as patching the operating system (OS) and keeping antivirus programs up to date.

Azure Logic Apps

Azure Logic Apps is a cloud-based service that helps you automate workflows and integrate various apps, data, services, and systems.



Azure Logic Apps

With Azure Logic Apps, you can create workflows by connecting different services and APIs. These workflows can use resources both in the cloud and on-premises.

- **Connectors**: Logic Apps has many built-in connectors that let you link to services like Azure SQL Databases, Salesforce, SAP, and more.
- **Custom APIs**: You can also use your own APIs or Azure Functions as connectors. This lets you perform actions with external systems or have your Logic App be triggered by them.

In short, Azure Logic Apps helps you automate and integrate various tasks by linking different services and APIs together in a seamless workflow.

Azure Functions

With Azure Functions, you can write only the code you need without building a full application or managing the infrastructure.

- **Function**: A small piece of code that runs in response to an HTTP request, an event in another Azure service, or on a schedule.
- **Triggers**: These are the events that start your function, like receiving an HTTP request or a new message in a queue.
- **Scalability**: Azure Functions automatically handle scaling, so your code can run efficiently no matter the workload.

In short, Azure Functions lets you quickly build and run small pieces of functionality in a scalable, serverless environment.

Azure Container Instances

Containers are lightweight and can start or stop in seconds. They are very portable, making it easy to develop an app on your local machine and then move it to the cloud for testing and production.

- **Portability**: Develop locally and easily move to the cloud.
- **Control**: Like virtual machines (VMs), you can install what you need to run your apps.
- **Maintenance**: You are responsible for updating and maintaining the container's operating system and other necessary tools like antivirus programs.

Containers offer quick start-up, portability, and control over your environment but require you to handle maintenance tasks.

Azure Container Instances

You can host your containers using Azure Container Instances (ACI). This service allows you to quickly start a container without needing a container orchestrator like Kubernetes and without managing the underlying resources.

- **Quick Start**: Easily and quickly spin up containers.
- **No Orchestrator Needed**: No need for Kubernetes or other orchestrators.
- **Managed Resources**: Azure handles the infrastructure for you.
- **Billing**: You are billed per second based on virtual CPU, memory usage, and storage.

Azure Container Instances make it simple to host containers with minimal management and cost based on usage.

Azure App Service

Azure App Service enables you to build and host web apps, mobile back ends, and RESTful APIs in the programming language of your choice without managing infrastructure.

It offers auto-scaling and high availability, supports both Windows and Linux, and enables automated deployments from GitHub, Azure DevOps, or any Git repo.

Azure App Service Plans

An app service always runs in an *App Service plan*. An App Service plan defines a set of compute resources for a web app to run.

When you create an App Service plan in a certain region (for example, West Europe), a set of compute resources is created for that plan in that region. Whatever apps you put into this App Service plan run on these compute resources as defined by your App Service plan.

Deployment Center

Deployment Center in Azure App Services is a tool that streamlines the deployment process for your applications. It simplifies setting up continuous integration and deployment (CI/CD) pipelines.

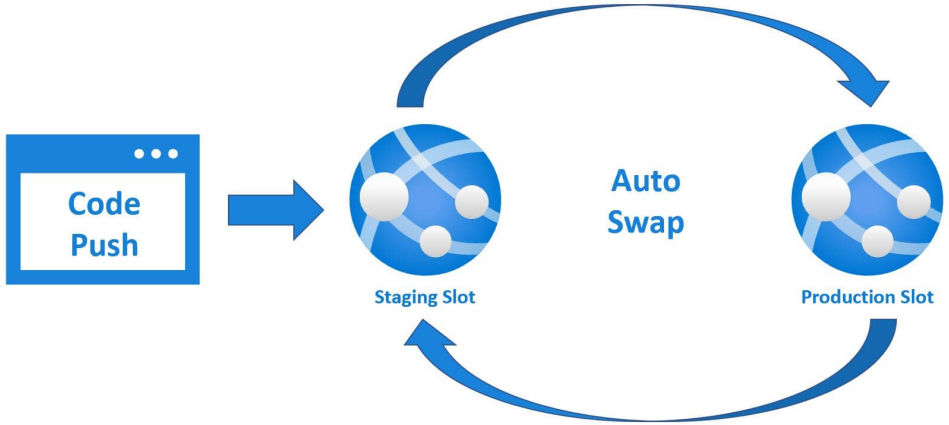
- **Continuous Deployment**: Connects to source control systems like GitHub, Bitbucket, and Azure Repos to automatically deploy your code changes.
- **Easy Setup**: Provides a user-friendly interface to configure and manage your deployment pipelines with minimal manual steps.
- **Automated Builds**: Automates the build and deployment process, reducing the need for manual intervention and ensuring that your application is updated consistently.

Deployment Center helps automate and manage the deployment of your applications, making it easier to integrate code changes and streamline the release process.

Deployment Slot

Deployment slot allows you to create separate environments within a single App Service. Commonly used for staging and testing new versions of your application before deploying them to production.

Features: Enables you to deploy updates to a staging slot and then swap it with the production slot, minimizing downtime and allowing for smooth rollouts and rollback if needed.



Lab: Deploy an App on App Service

Deploy a PHP web app in Azure App Service.

https://learn.microsoft.com/en-us/azure/app-service/quickstart-php?tabs=portal&pivots=platform-linux