Provisioning Virtual Machines with the Microsoft Azure Portal, Azure CLI and PowerShell

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Course Overview

Introduction and Azure Fundamentals

Provisioning Virtual Machines with the Microsoft Azure Portal, Azure CLI and PowerShell

Building and Deploying a Custom Virtual Machine Image

Managing Virtual Machine Disks

Designing and Implementing Azure DevTest Labs

Overview

Virtual Machine Components

Creating a VM in Azure Portal

Using Azure CLI and PowerShell

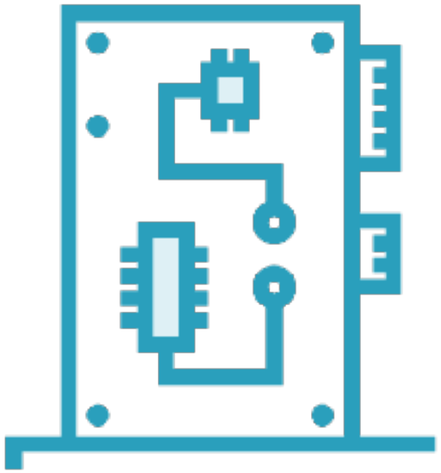
Creating a VM with Azure CLI and PowerShell

Using CloudShell

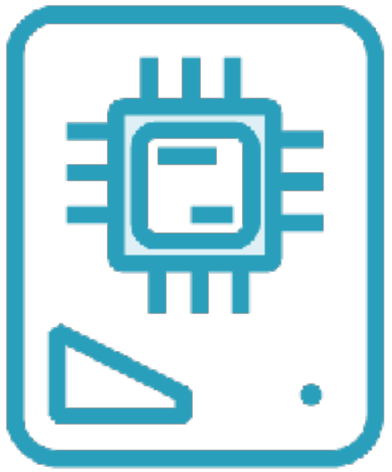
Understanding Virtual Machine States

Virtual Machine Components

Image



Network



Storage

Before Creating a VM

Create a Resource Group

Create a Virtual Network

Use Managed Storage

Creating a VM in the Azure Portal

Find a Virtual Machine Image	Give the VM a Name	Disk Type	Username and Password
Subscription	Resource Group	Location	VM Size

Virtual Machine Settings

HA and Replication

Storage Type

Networking

Public IP

Network Security Groups

Demo

Creating a Virtual Network and Subnet

Creating a VM in the Azure Portal

- Windows
- Linux

Connecting to our VMs remotely

- Remote Desktop (RDP)
- Secure Shell (SSH)

Programmatically Interacting with Azure

Adding consistency to your deployments and VM creation

Any production system should be implemented using automation

Also useful to construct similar downlevel environments, such as DEV/TEST

Programmatically Interacting with Azure

Azure CLI

PowerShell

CloudShell

Azure CLI

Cross platform command line experience

Complete coverage for interacting with Azure

Getting Azure CLI

Windows MSI Installer

macOS brew package

Linux

- **Available from package managers from apt, yum and zypper**

Windows Services for Linux (WSL)

Docker container is available

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

PowerShell

Azure resources can be controlled with cmdlets

Windows PowerShell

- Windows only, included with the OS

PowerShell Core

- Cross Platform, Window, Linux, macOS and Container image available

Getting Windows PowerShell

Windows Management Framework 5.1

Windows Server (2008R2, 2012, 2016)

Windows 7 SP1, 8 and 10

```
Install-Module AzureRM
```

The `Azure` PowerShell module is for the Classic deployment model

https://docs.microsoft.com/en-us/powershell/azure/install-azurerm-ps?view=azurermps-6.6.0

Getting PowerShell Core

Version 6.0.4 is available

```
Install-Module AzureRM.NetCore
```

There isn't complete cmdlet coverage

...Yet!

All cmdlets will have the same names

https://docs.microsoft.com/en-us/powershell/azure/install-azurermps-maclinux?view=azurermps-6.6.0

CloudShell

Interactive, browser accessible shell for managing your Azure resources

You get bash, PowerShell and Azure CLI

You don’t have to install or configure or maintain your shell environment

Its already logged into your Azure Account when you launch

Azure Drive

When you log in your land in Azure Drive where Azure resources are represented as a file system

Useful for service discovery using normal file system commands to navigate and discover services

Can be passed into PowerShell cmdlets for management operations

Persisting Data in CloudShell

Session state isn't persisted and there's a 20 minute inactivity timeout

Uses Azure Files as a backend store, where you can persistently store data and scripts

Same storage backend when using bash or PowerShell

Mount is exposed as `clouddrive` in your `$HOME` directory

Creating a VM Programmatically

Resource Group	Virtual Network (vnet)	Subnet	Public IP
Network Security Group	NIC	Virtual Machine	Open port for Management

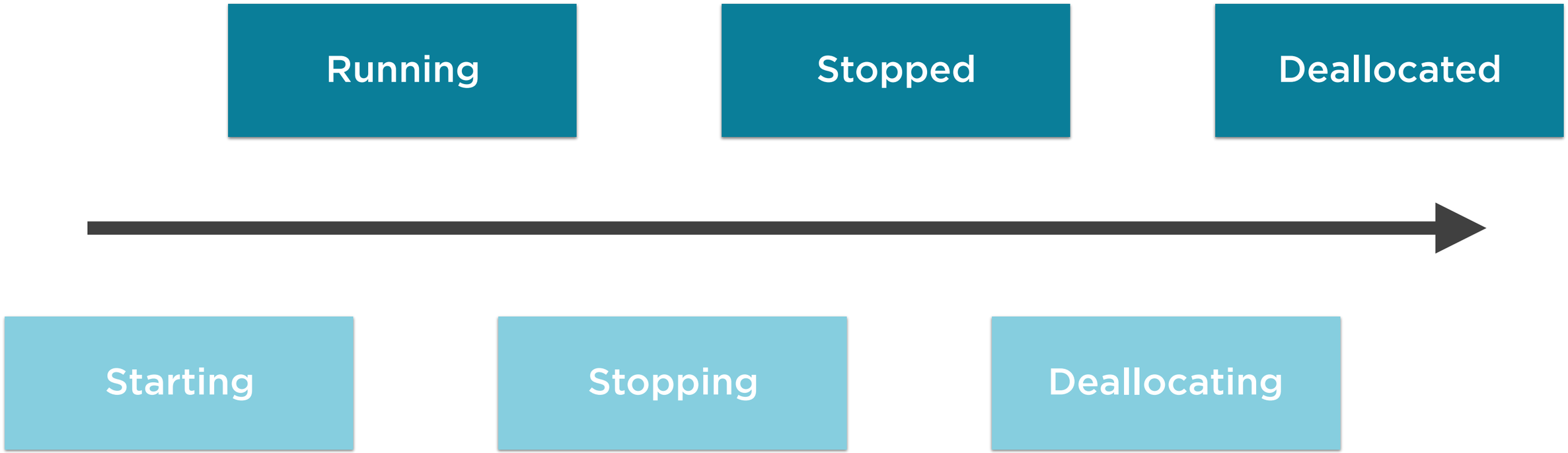
Demo

Creating Virtual Machines

- **Azure CLI**
- **PowerShell**

Exploring CloudShell

Virtual Machine States



Demo

Exploring VM States Using CloudShell

Summary

Virtual Machine Components

Creating a VM in Azure Portal

Using Azure CLI and PowerShell

- Creating a VM with Azure CLI and PowerShell
- Using CloudShell

Understanding Virtual Machine States

What's Next!

Building and Deploying a Custom Virtual Machine Image