Deploying a VM in Microsoft Azure

PLANNING VM DEPLOYMENT

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MVP Microsoft® Most Valuable Professional

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The Course at a Glance

1. **Planning VM Deployment**
2. **Deploying a Linux Server VM in Microsoft Azure**
3. **Deploying a Windows Server VM in Microsoft Azure**

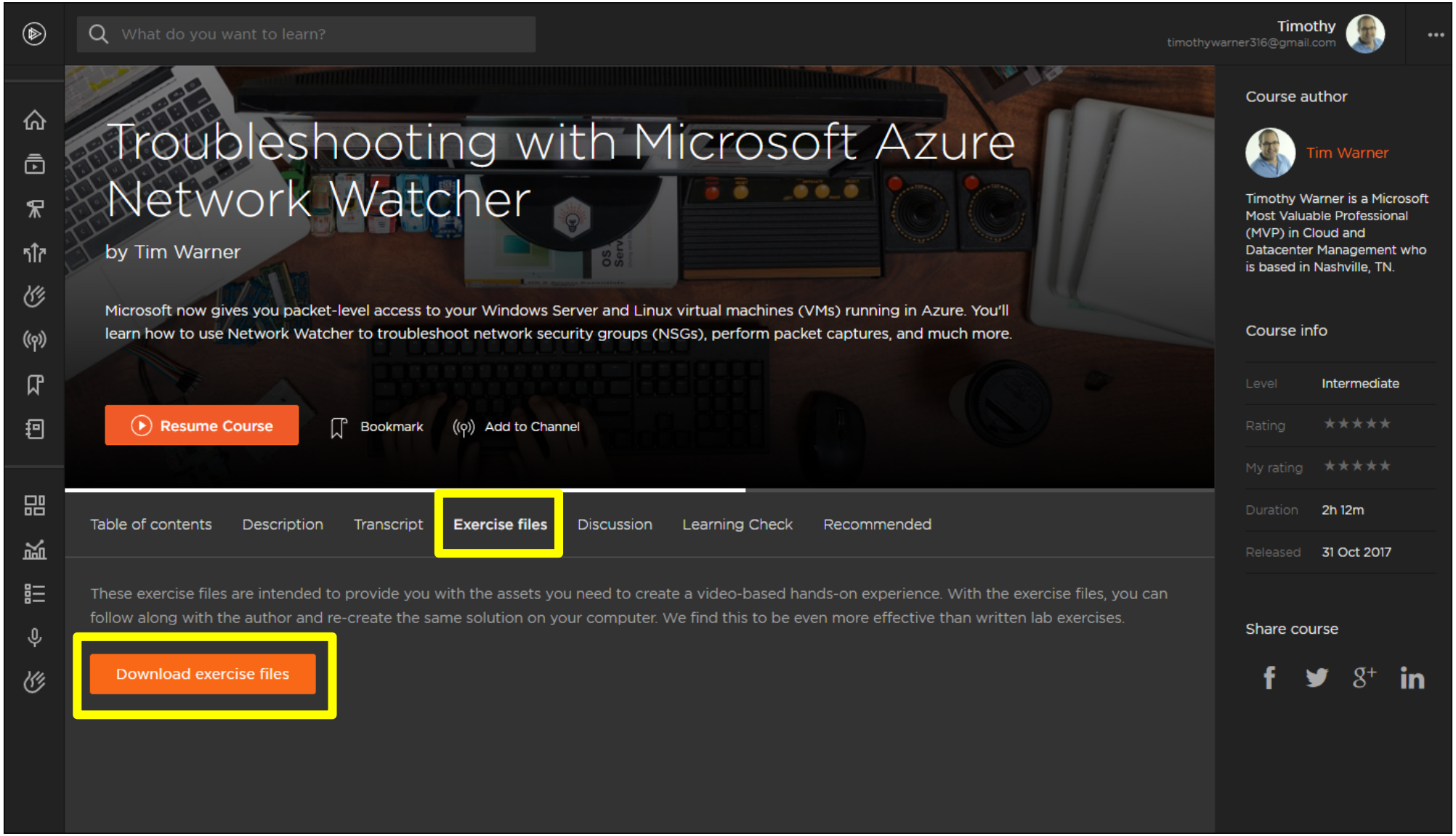
Overview

Choose the right VM instance size and storage option

Design your virtual network environment

Plan for high availability

Exercise Files



Choose the Right VM Size and Storage Option

Compute

Azure Compute Unit (ACU)

100 = Small (Standard A1) VM

- A = Family
- 1 = Size (versioned)

DS_V3 = 160-190 ACU

DS1_V2 = 210-250 ACU

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Compute

Type	Sizes	Description
General purpose	B, Dsv3, Dv3, DSv2, Dv2, DS, D, Av2, A0-7	Balanced CPU-to-memory ratio. Ideal for testing and development, small to medium databases, and low to medium traffic web servers.
Compute optimized	Fsv2, Fs, F	High CPU-to-memory ratio. Good for medium traffic web servers, network appliances, batch processes, and application servers.
Memory optimized	Esv3, Ev3, M, GS, G, DSv2, DS, Dv2, D	High memory-to-CPU ratio. Great for relational database servers, medium to large caches, and in-memory analytics.
Storage optimized	Ls	High disk throughput and IO. Ideal for Big Data, SQL, and NoSQL databases.
GPU	NV, NC, NCv2, NCv3, ND	Specialized virtual machines targeted for heavy graphic rendering and video editing, as well as model training and inferencing (ND) with deep learning. Available with single or multiple GPUs.
High performance compute	H, A8-11	Our fastest and most powerful CPU virtual machines with optional high-throughput network interfaces (RDMA).

Standard vs. Premium Storage Disks

Standard Disks

Backed by cost-effective HDDs

Stored in Azure storage account

Standard SSD (Preview) available for managed disks (dev/test/entry level production applications)

Standard storage provides maximum IOPS values for each VHD

Premium Disks

Backed by high-speed SSDs

IOPS values are predictable, expected performance levels

Pre-pay for all storage used (fixed disk sizes

P10, 128 GB, 500 IOPs, 50 MB/sec

Generation 1 .VHD

Managed vs. Unmanaged Disks

Unmanaged Disks

Original method to store VM VHDs

VHDs stored as page blobs in an Azure storage account

Maximum 256 TB of storage per VM

You need to manage storage account availability

20,000 IOPS limit across all VM disks in a standard storage account

Managed Disks

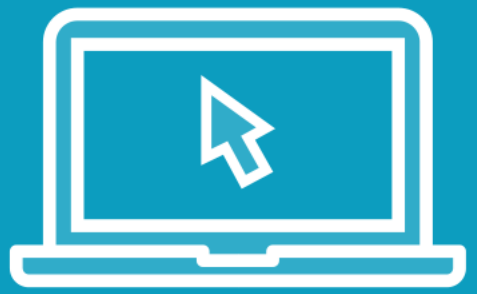
Azure manages the disks, so you don't have to worry about storage account-level IOPS restrictions

Pre-pay for disk size (no need for SA)

S10, 128 GB, 500 IOPS, 60 MB/sec

Supports Standard and Premium SSD and Standard HDD

Demo



1

VM instance size documentation

VM size pricing

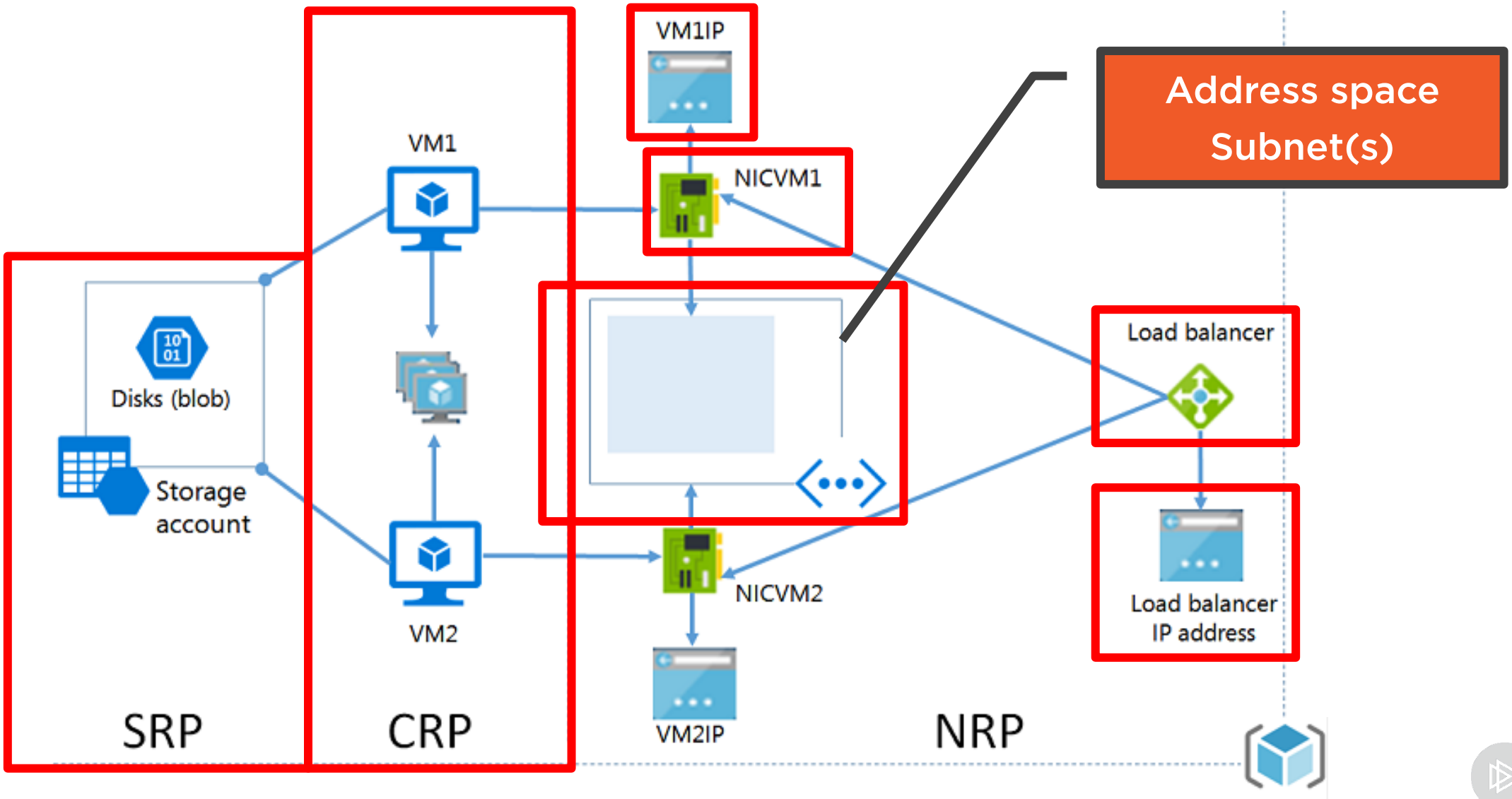
VM size chooser: https://azurevmchooser.kvaes.be/

Show managed disks (portal)

Show unmanaged disks (Azure Storage Explorer)

Design Your Virtual Network Environment

Network Resource Provider (NRP)



Demo

2

Deploy network with two subnets

Plan for High Availability

Making Your VM Highly Available

Availability Set

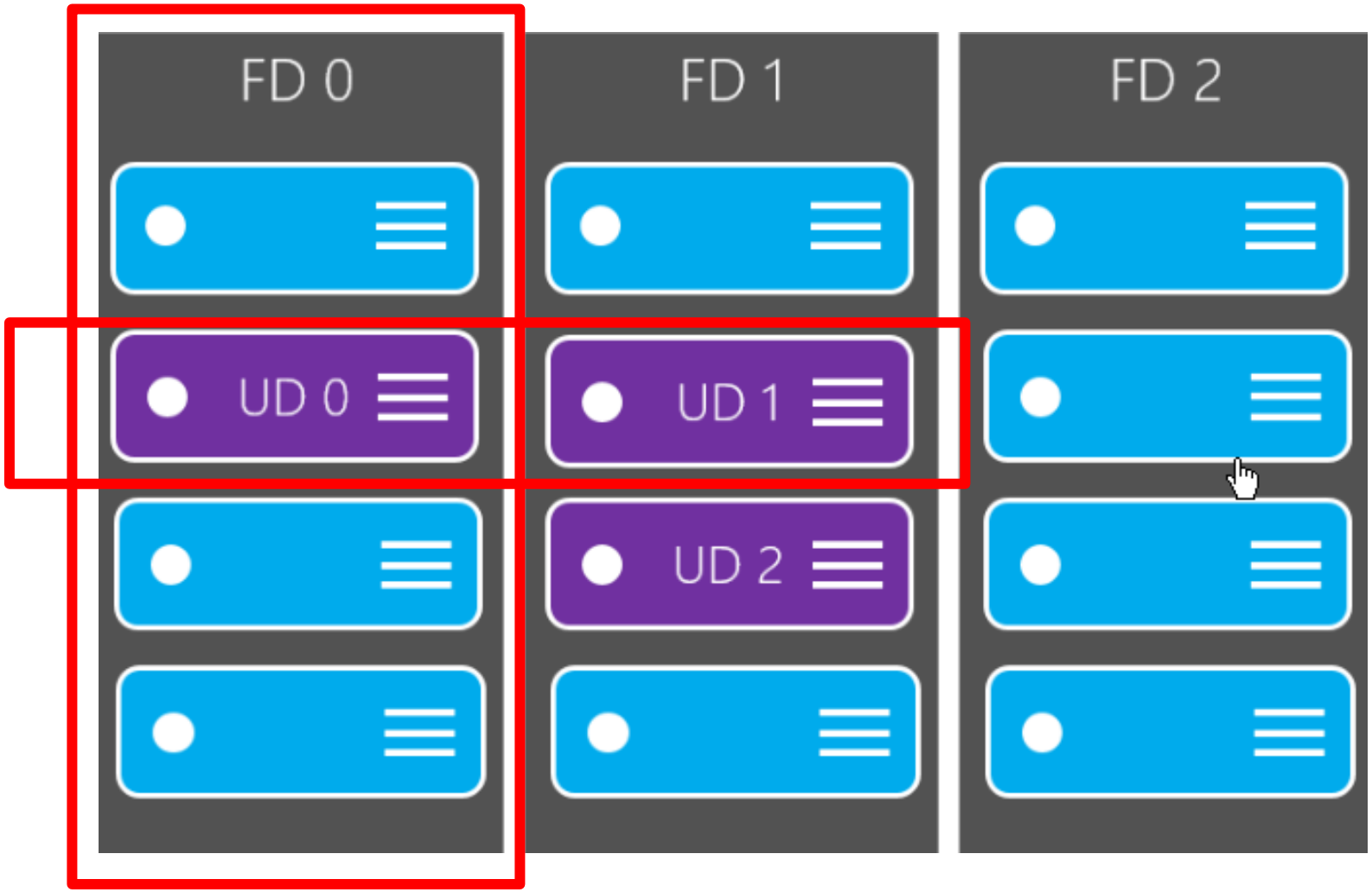
Availability Zone

Availability Sets

99.95% availability SLA with availability set

Must assign availability set at VM deployment

99.9% availability single-instance SLA with premium storage



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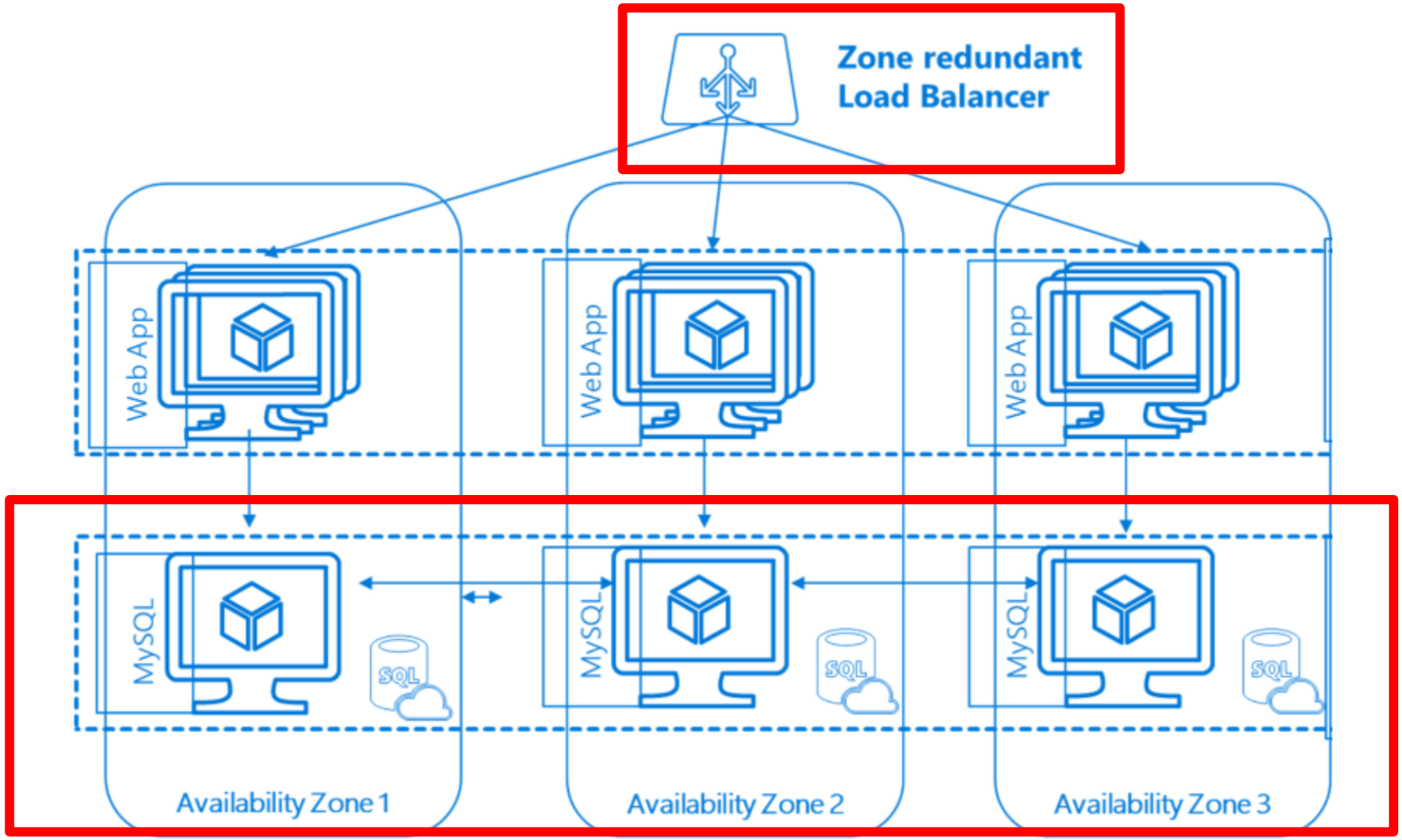
Availability Zones



Standard SKU public IP address

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Summary

Proper planning is important

- Some decisions have serious repercussions (availability set)

Make use of community tools

- GitHub

Remember that elasticity is one of the hallmark principles of the public cloud

Next module: Deploying a Linux Server VM in Microsoft Azure