Microsoft Azure   SAP Global Partner

Friday from Walldorf
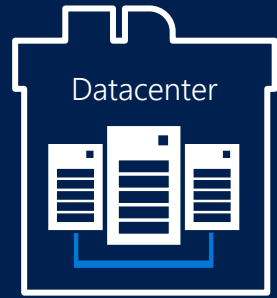# Azure Availability Zones

Philipp Leitenbauer
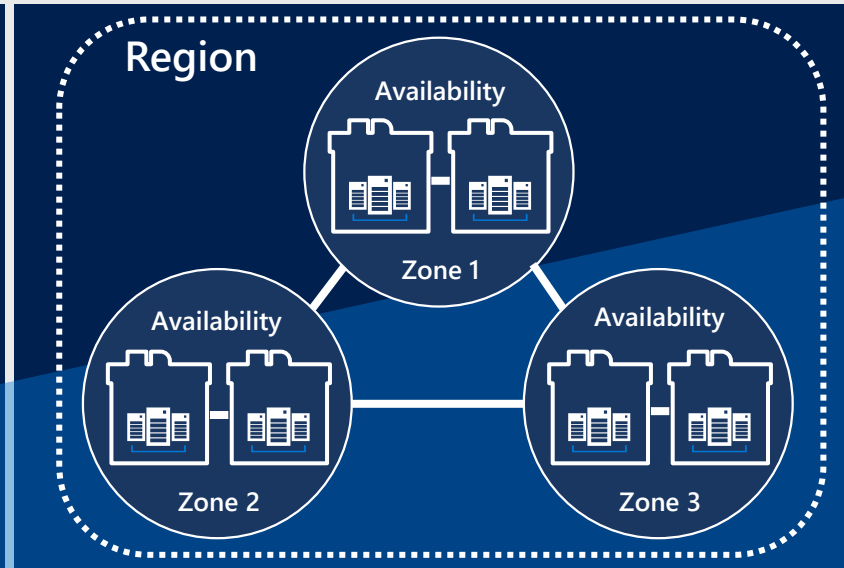
August 2020

Azure Global | AzCAT SAP

Protection through redundancy

Avoid single points of failure for business continuity

Minimum of three physically separated locations

Three Availability Zones to support quorum based workloads like SQL, Service Fabric, Cassandra, MongoDB.

Independent power, cooling, network

A facility level failure or single fiber path failure will affect only one zone.
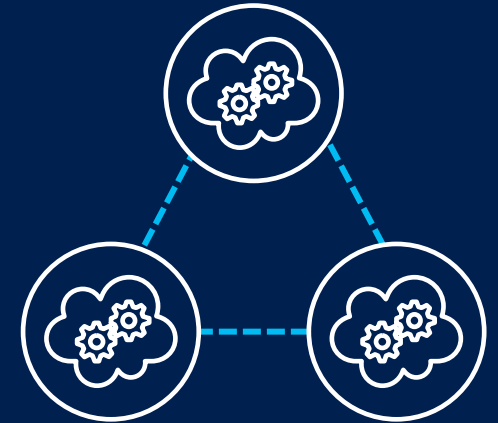
Azure management services replicated across zones

Azure management services are redundant, so a single zone failure will not affect other zones. Azure maintenance orchestrated zone by zone.

Availability Zones
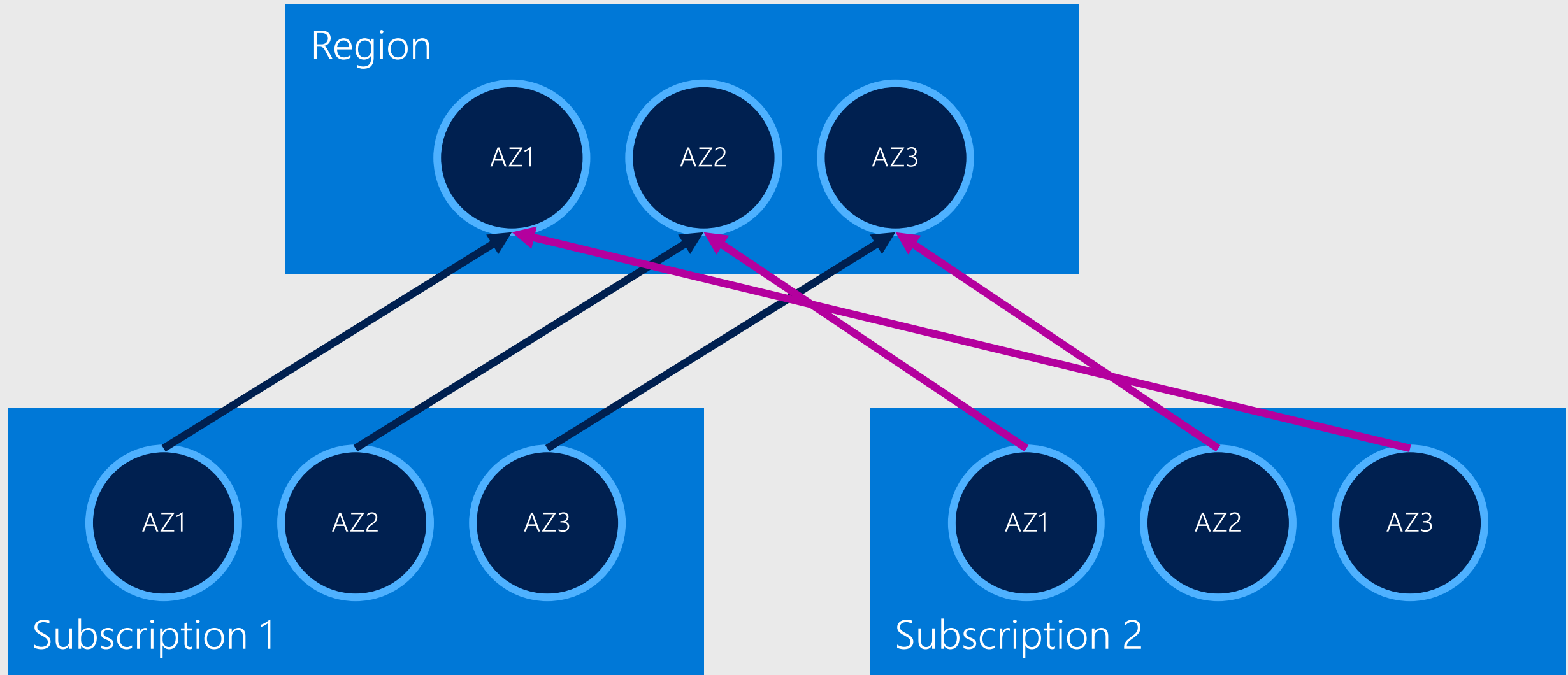
Azure CAT GitHub Repo

Azure CAT GitHub Repo

Scripts are available at
https://github.com/Azure/SAP-on-Azure-Scripts-and-Utilities or https://aka.ms/saponazurescripts
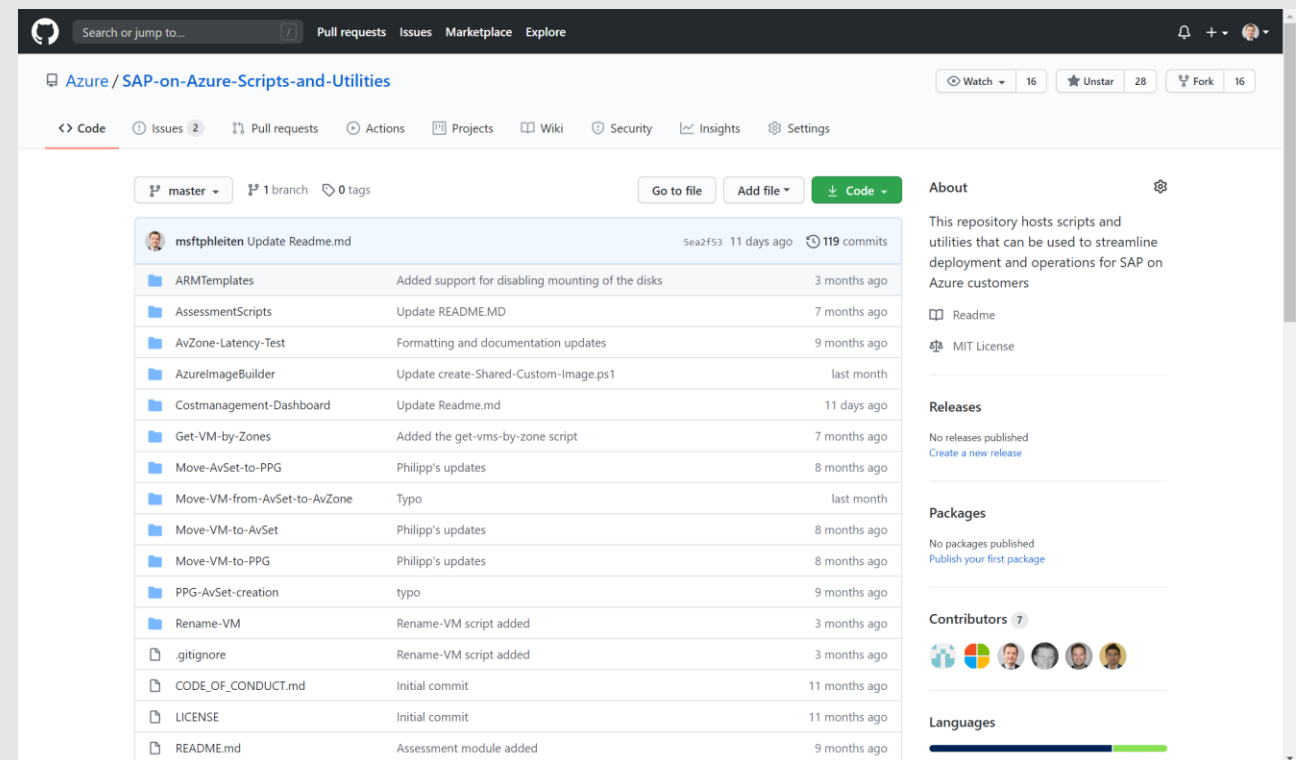
AvZone Latency Test

- Deploys 3 Linux VMs
- Connects to all of them and install required packages
- Runs performance test
- Displays results

You can decide to destroy your environment after the test or keep it to run it multiple times.
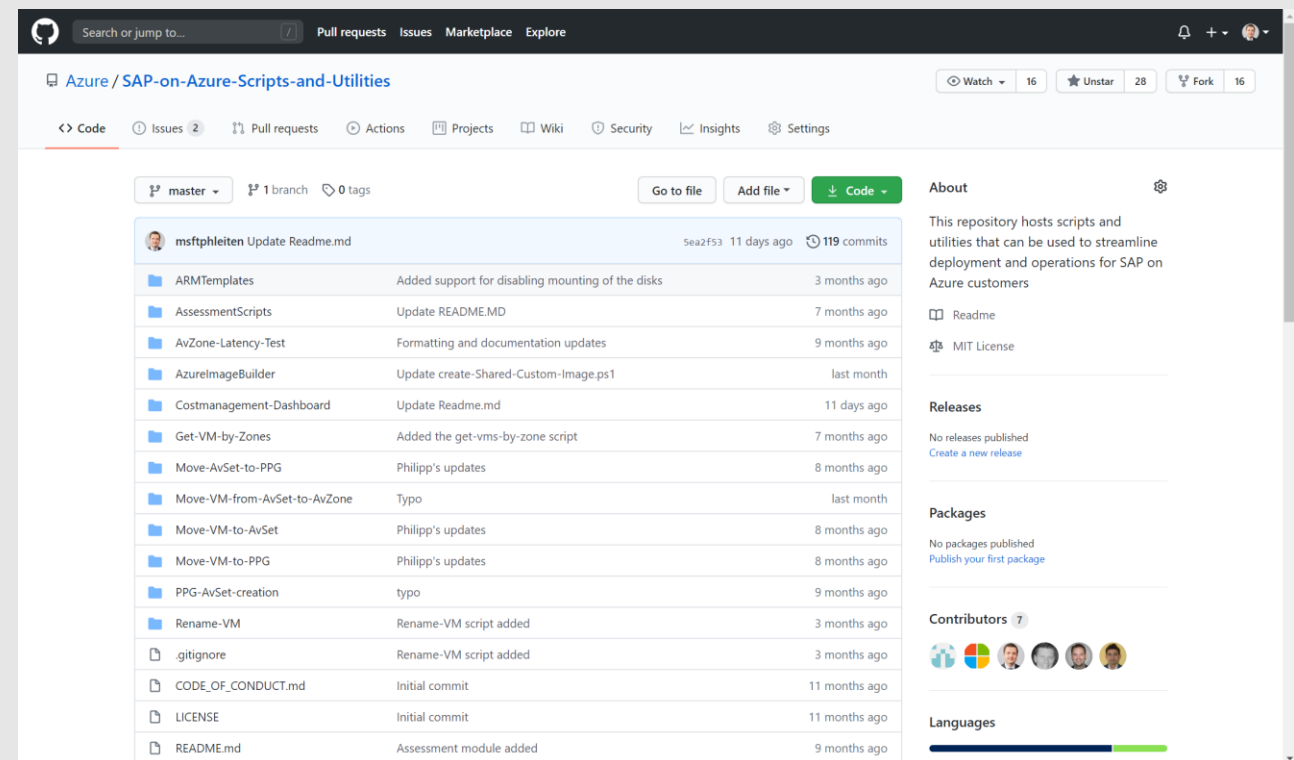
AvZone Latency Test

.\AvZone-Latency-Test.ps1 -SubscriptionName "phleiten Azure (Philipps Azure)" -region westeurope

```
PS C:\Users\phleiten\Desktop> .\AvZone-Latency-Test.ps1 -SubscriptionName "phleiten Azure (Philipps Azure)" -region westeurope

Name                                     Account                          SubscriptionName
----                                     -------                          ----------------
phleiten Azure (Philipps Azure) (232b... phleiten@microsoft.com           phleiten Azure (Philipps Azure)
Creating resource group
Creating vNET and Subnet
Creating NSG
Creating VMs
All jobs created, waiting ...
All jobs completed
Waiting for three minute for all systems to come up ...
Creating SSH sessions
Installing qperf on all VMs
Running bandwidth and latency tests
Region:   westeurope
VM Type:   Standard_D8s_v3
Latency:

        ---------------------------------------------
        |     zone 1    |    zone 2    |    zone 3    |
        ---------------------------------------------
| zone 1 |              |      62.5 us |      605 us |
| zone 2 |     58.7 us  |              |      632 us |
| zone 3 |      574 us  |      671 us  |              |
        ---------------------------------------------


Bandwidth:

        ---------------------------------------------
        |     zone 1    |    zone 2    |    zone 3    |
        ---------------------------------------------
| zone 1 |              |    478 MB/sec |   415 MB/sec |
| zone 2 |   475 MB/sec |               |   394 MB/sec |
| zone 3 |   418 MB/sec |    392 MB/sec |              |
        ---------------------------------------------

Removing SSH Sessions
Deleting Resource Group
```


Azure Portal — AvZoneLatencyTest Resource group

Subscription (change) : phleiten Azure (Philipps Azure)
Subscription ID : 232b6759-a961-4fb7-88c0-757472230e6c
Tags (change) : Click here to add tags

Showing 1 to 13 of 13 records.

Name	Type	Location
azping-mgmt-vnet	Virtual network	West Europe
azping-nsg	Network security group	West Europe
azping-vm01	Virtual machine	West Europe
azping-vm01-nic1	Network interface	West Europe
azping-vm01-nic1-pip	Public IP address	West Europe
azping-vm01_OsDisk_1_a4e4efc004654dabb827ca5da88bc3e1	Disk	West Europe
azping-vm02	Virtual machine	West Europe
azping-vm02-nic1	Network interface	West Europe
azping-vm02-nic1-pip	Public IP address	West Europe
azping-vm02_OsDisk_1_7350538b2aeb42ef92b8defafadc5b23	Disk	West Europe
azping-vm03-nic1	Network interface	West Europe
azping-vm03-nic1-pip	Public IP address	West Europe
azping-vm03_OsDisk_1_9826a4a825234b4aa17f88e820119312	Disk	West Europe

AvZone get VM types available by zone

`.\Get-VM-by-Zones.ps1 -SubscriptionName "phleiten Azure (Philipps Azure)" -region westeurope -vmseries M`

```
PS C:\Users\phleiten\Desktop> .\Get-VM-by-Zones.ps1 -SubscriptionName "phleiten Azure (Philipps Azure)" -region westeurope -vmseries E
WARNING: Unable to acquire token for tenant

Name                                   Account                        SubscriptionName
----                                   -------                        ----------------
phleiten Azure (Philipps Azure) (232b... phleiten@microsoft.com       phleiten Azure (Philipps Azure)


VM Type      Zone 1 Zone 2 Zone 3
-------      ------ ------ ------
E16_v3       X      X      X
E16_v4       X             X
E16-4ds_v4   X      X      X
E16-4s_v3    X      X      X
E16-4s_v4    X             X
E16-8ds_v4   X      X      X
E16-8s_v3    X      X      X
E16-8s_v4    X             X
E16a_v4      X      X      X
E16as_v4     X      X      X
E16d_v4      X      X      X
E16ds_v4     X      X      X
E16s_v3      X      X      X
E16s_v4      X             X
E2_v3        X      X      X
E2_v4        X             X
E20_v3       X      X      X
E20_v4       X             X
E20a_v4      X      X      X
E20as_v4     X      X      X
```