Find Azure Virtual Machines with Ultra SSD disks and other capabilities

Microsoft Azure Ultra Disk Storage is a Managed Disks offering that delivers unprecedented and extremely scalable performance with sub-millisecond latency for the most demanding Azure Virtual Machines and container workloads.

Ultra-SSD Disks are designed to work with all Premium SSD enabled Azure Virtual Machines. However, not all Regions and Virtual Machine Sizes have Ultra SSD disks available.

References:

https://azure.microsoft.com/en-us/blog/announcing-ultra-ssd-the-next-generation-of-azure-disks-technology-preview/

https://azure.microsoft.com/en-us/blog/announcing-the-general-availability-of-azure-ultra-disk-storage/

https://azure.microsoft.com/en-us/blog/azure-ultra-disk-storage-microsoft-s-service-for-your-most-i-o-demanding-workloads/

Although we have a list of available regions and supported VM series online, there is not a practical way to cross this information in the portal. Mainly because not every VM size is available in every supported region with Ultra-SSD Disks. Customers need to try different combinations of region/VM sizes until he gets a combination that allows for Ultra SSDs

This PowerShell script allows a customer to list all available possibilities, making it easier to go back to the portal and make the correct selections without losing time.

List Azure VM with Ultra SSD for a single region

```
$region="westus"
$vmtypes = Get-AzComputeResourceSku | where {$_.Locations.Contains($region)}

foreach($vmtype in $vmtypes)
{
    #Write-Output ($vmtype)[0].Capabilities

    $caps = ($vmtype)[0].Capabilities
    foreach ($cap in $caps)
    {
        if ($cap.Name.Contains("UltraSSDAvailable"))
        {
            Write-Host $vmtype.LocationInfo[0].Location, $vmtype.Name, "Has Ultra SSD"
        }
    }
}
```

List Azure VM with Ultra SSD for all regions

```
$vmtypes = Get-AzComputeResourceSku

foreach($vmtype in $vmtypes)
{
    #Write-Output ($vmtype)[0].Capabilities

    $caps = ($vmtype)[0].Capabilities
```

```
    foreach ($cap in $caps)
    {
        if ($cap.Name.Contains("UltraSSDAvailable"))
        {
            Write-Host $vmtype.LocationInfo[0].Location, $vmtype.Name, "Has Ultra SSD"
        }
    }
}
```

Updated November 2020, David Lyth

Generalized the original script

- Can search for VMs by any of the true/false capabilities
- Allow running the script with parameters
- With no parameters, will present a list of regions and capabilities to select from
- Brought the scripts together, with an “ALL” option for regions
- Included VM memory and core count in the output list
- Script now called FindVM_by_capability

As of Nov 2020, the capabilities listed for virtual machines are

LowPriorityCapable
PremiumIO
EphemeralOSDiskSupported
EncryptionAtHostSupported
AcceleratedNetworkingEnabled
RdmaEnabled
UltraSSDAvailable

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