

VM AND VMSS

VM Architecture  
Using VMSS

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VM BASICS

- Virtual machines (IaaS) are the building blocks of many services in Azure
- Often easiest to relate to as closely aligns with a VM on-premises
- Full access to everything inside the VM OS and above
- Also means responsible for everything OS and above (but lots of Azure extensions and services to help)

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VM SERIES AND SIZES

- Often different workloads have different resource type requirements
- Like t-shirts there are different fits!
- Different [VM series](#) have different focus in terms of resource ratios
- Within a series there are sizes with resources proportionally increasing
- Some VMs have [vCPU constrained](#) options to meet licensing requirements
- Processor measured in [ACU](#)

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VM BUILDING BLOCKS

- In ARM there is more than just the VM
  - VM [spot]
  - NIC[s] (connected to a subnet)
  - OS disk (managed disk, could be ephemeral in cache/temp space)
  - Temp disk (normally, some do not have)
  - Data disks (cache options)
  - Extensions
    - [Public IP]
    - [Infiniband, GPU, NVMe]
  - Availability Set, Availability Zone, Proximity Placement Groups
  - [Managed identity]

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SUPPORTED OS

- [Windows](#)
- [Linux](#)
- Large number of images in Azure marketplace
- Create your own images and can make easily available through shared image gallery
- Then apps inside and other agents as required

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MAINTENANCE CONSIDERATIONS

- VMs can encounter various types of issues and maintenance
  - Planned maintenance (VM no-reboot vs reboot)
  - Unplanned hardware maintenance
  - Unexpected downtime
- Remember to use Availability Sets/Availability Zones to reduce impact (FDs and UD)
- Multiple regions in case of region outage

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ONLY CHILD OPTIONS

- VMs are normally placed on a host with resources from other tenants
- There are options where the host is dedicated
- [Isolated VMs](#)
- [Dedicated host](#)
- [Azure Stack Hub](#), Edge and HCI (on-premises)
- Bare-metal such as SAP HANA solutions

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I ❤️ VMWARE

- Azure runs on Hyper-V
- Organizations may need to rapidly vacate datacenters and don't have time to retool
- Azure VMware Solution is first-party Azure offering in partnership with VMware

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VM SCALE SETS (VMSS)

- Often a workload requires multiple instances
- Capacity may also vary over time
- VMSS enables a template and configuration to be defined along with scale parameters
- Optionally, automatically part of a load balancer backend set

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VMSS GOOD TO KNOWS!

- Fault domains and zone balancing
- Overprovisioning
- Auto image update
- Instance repair
- Scale-In Policy
- Termination notification
- Instance protection

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QUESTIONS?

ASK IN THE COMMENTS

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