

A key benefit of Azure virtual machines is the ability to change the size of a virtual machine based on the needs for CPU, network, or disk performance.

There are three key concepts that will impact how simple it is to change the size of a virtual machine:

- The region in which the virtual machine is deployed
- The physical hardware hosting the virtual machine
- The virtual machine deployment model

Different virtual machine sizes require different physical hardware. In some cases, one Azure region may not contain the hardware that's needed to support the desired virtual machine size. That said, it's important to note that all Azure regions support Standard_A0 – A7 and Basic_A0 – A4 virtual machine sizes.

In a case where the physical hardware that's running the existing virtual machine also supports the desired new size, it's easy to resize the virtual machine size through a straightforward resize operation. It will however, result in a virtual machine reboot.

Move region to resize

If the required new virtual machine size is not available in the VM's current region, you can either wait for the size to become available in the existing region or you can move the virtual machine, and possibly other services, to a new region that does support the required VM size.

Resize to size available in current hardware cluster

All VMs actually run on underlying physical servers. The physical servers in each Azure region are grouped together in clusters of common physical hardware. As long as the underlying physical cluster supports the new VM size, a running VM can easily be resized. If the required new virtual machine size is supported on the current hardware cluster hosting the virtual machine, the resize operation is a simple reboot operation

Resize to size not available in current hardware cluster

If the current hardware hosting a virtual machine does not support the requested new virtual machine size, the resize operation is a bit more difficult. The process will require that the virtual machine be moved to different hardware cluster as part of the resize operation.

If a virtual machine is deployed using the Resource Manager (ARM) deployment model and you need to change to a size which requires different hardware, you can resize it by first stopping the virtual machine, selecting a new virtual machine size, and then restarting the virtual machine. If the virtual machine being resized is part of an availability set, then you need to stop all virtual machines in the availability set before changing the size of any virtual machine within the availability set.

All virtual machines in an availability set must be stopped before performing the resize operation to a size that requires different hardware because all running virtual machines in the availability set must be using the same physical hardware cluster. As such, if a different physical hardware cluster is required to change a virtual machine's size, all virtual machines must be first stopped and then restarted one-by-one to a different physical hardware cluster.