# Expand Azure Virtual Machine Single Managed Disk Drive

When we create a new virtual machine (VM) in a Resource Group by deploying an image from Azure Marketplace, two disks are automatically attached to the virtual machine. The Operating system disk and Temporary disk (D). The default OS drive letter is **C:** and is often 127 GB (some images have smaller OS disk sizes by default).

SQL Database Servers can be monitored in Azure and Trigger Server Disk Space alert if the drive is less than certain percentage (e.g. 15%) over an hour on the drives such as G, H, I, C, and F. This article explains how to expand the drives when there is a space shortage. However, if any of these disks are formed with storage spaces (pooling various disks), the procedure to resizing is different and it will be explained in another article. This article, therefore, is specific to a single disk drive expansion that includes C and F.  It also doesn't cover resizing an unmanaged disk - it only deals with Managed Disk Drive.

Condition to trigger Alert from OMS

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Whenever OS disk or F drive is out of space (less than 15%) SQL DBA team received an email alert and they are expected to address the case. See the sample email alert.

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**Remember**:

* There are different options the SQL DBA team may take to address the matter before attempting to expand disk drive space issue – that solution is not covered here. This article limited to be used as a reference in a case when the expansion of drive ( C or F) is **A MUST.** You can extend these disks by using the Azure portal or Azure PowerShell. This article describes the process of expanding an existing Azure Virtual Machines Disk using the portal.
* If we have an alwayson environment, please note prior to the steps described in this guide, you need to identify which replica is Primary and Secondary since in both approaches the Virtual Machine will need to be stopped and Deallocated.
* To avoid impacting application, it is advisable to start from the secondary replica, do the verification, and then failover. Finally, do the same on old Primary Replica

# **Extend Azure Virtual Machine OS (C:) or F:  Drive Using Azure Portal**

In this section, VM ABC1617LT2SQ1 is being used**.** The detail of each step discussed below

**VM Name**: ABC1617LT2SQ1 , **Resource Group Name**: ABC-rgp-001, and **Subscription**:

### 1.     Verify the Alert – make sure C drive left less than 15%

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### 2.     Resizing the **OS disk** require VM to be stopped so in the **Azure portal**, select the **virtual machine**, ABC1617LT2SQ1 click **Overview** and then click **Stop** the VM

Select Yes

Monitor the progress under notification

In the **Overview** of Virtual Machine console. Verify that VM status is **Stopped (deallocated).**

### 4. Go to the **Settings** section and click on Disks.

There two sections that display disk information, Name, and Data disks. You must know which section the request needs. In our system, disk under **Name** section is C: drive and disk name that ends with ***app0*** under section **Data disks** is F: drive

### 5.      Click on the target disk and then next click on Configuration

Give that we are requested to extend C drive which has 127 GB to 256 GB, click on the disk under section Name - ABC1617LT2SQ1-os. Next Click on Configuration

### 6. Put the value of the target disk size, click **Save**.

Give you are requested to extend the existing drive, make sure the value under section **Size (GiB)** must not be empty and the new disk size should be greater than the existing, one in our case -127 GiB. Disks can only be resized to a larger size. The maximum allowed is 2048 GB for OS managed disks

Single disk expansion is instantaneous that will not take more than a few second

Verify that the disk size is increased to 256 GiB

Remember this doesn’t necessarily mean the disk is automatically expanded- rather it means now you have present additional storage to the existing disk that can be extended from disk management. This needs VM to be available

### 7.  **Start** the virtual machine, ABC1617LT2SQ1

  In the **Overview** of Virtual Machine console. Verify that VM status is **Running**

### 8.  Expand the volume within the OS

Once you have expanded the disk for the VM, you need to go into the OS and expand the volume to encompass the new spac. RDP to the virtual machine and open **Disk Management**.

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### 9.  In the **Disk Management** console, verify **unallocated**space for C drive (OS disk).

### **10.** In the **Disk Management** console, select Window (C:) and right-click on it and select **Extend Volume…**

### **11.**On the **Welcome to the Extend Volume Wizard** page, click **Next.**

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### 12.  On the **Extend Volume Select Disks** page, click **Next**.

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### 13.   On the **Completing Extend Volume Wizard** page, click **Finish**.

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### 14.  **Verify**OS disk size is**increased in** Disk Management console and File Explorer

In the **Disk Management** console, verity that **OS drive C:** drive space is **extended** as per our required disk size. Go to File Explorer and verify **OS disk size** is **increased**