PROJECT REPORT

On

“AZURE LAB on Attach Extra Disk in Virtual Machine”

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Chapter 1: Cloud Introduction :-

The cloud refers to software and services that run on the Internet, instead of locally on your computer. Most cloud services can be accessed through a Web browser like Firefox or Google Chrome, and some companies offer dedicated mobile apps.

Some examples of cloud services include Google Drive, Apple iCloud, Netflix, Yahoo Mail, Dropbox and Microsoft OneDrive. (There are also, many business applications for cloud computing, but for the purpose of this post, It will deal with consumer solutions.)

The advantage of the cloud is that you can access your information on any device with an Internet connection. It's what allows you to make edits to a file in Google Docs on your home computer, and then pick up where you left off when you get to the office. Colleagues can even collaborate on the same document.

Another benefit of the cloud is that, because the remote servers handle much of the computing and storage, you don't necessarily need an expensive, high-end machine to get your work done. In fact, some companies are making cloud-based computers as a low-cost option for consumers and the

education market, the most notable example of this being Google's Chromebooks.

But the cloud has its downfalls, too. Without an Internet connection — or with a crappy one — you're basically locked out of accessing your data and cloud-based programs. The same applies if there are any technical issues or outages on the server side.

Chapter 2: Introduction to AZURE :-

Azure is Microsoft's cloud platform, just like Google has it's Google Cloud and Amazon has it's Amazon Web Service or AWS.000. Generally, it is a platform through which we can use Microsoft's resource. For

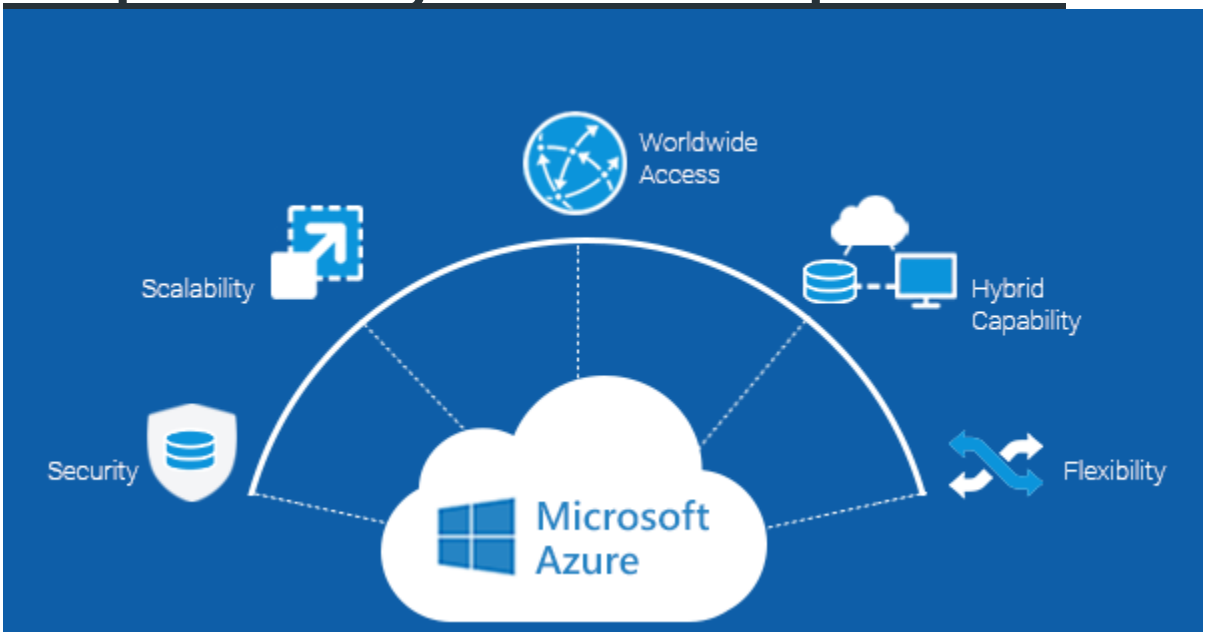
example, to set up a huge server, we will require huge investment, effort, physical space and so on. In such situations, Microsoft Azure comes to our rescue. It will provide us with virtual machines, fast processing of data, analytical and monitoring tools and so on to make our work simpler. The pricing of Azure is also simpler and cost-effective. Popularly termed as “Pay As You Go”, which means how much you use, pay only for that.

AZURE History:-

Microsoft unveiled Windows Azure in early October 2008 but it went to live after February 2010. Later in 2014, Microsoft changed its name from Windows Azure to Microsoft Azure. Azure provided a service platform for .NET services, SQL Services, and many Live Services. Many people were still very skeptical about “the cloud”. As an industry, we were entering a brave new world with many possibilities. Microsoft Azure is getting bigger and better in coming days. More tools and more functionalities are getting added. It has two releases as of now. It’s famous

version **Microsoft Azure v1** and later **Microsoft Azure v2**. Microsoft Azure v1 was more like JSON script driven then the new version v2, which has interactive UI for simplification and easy learning. Microsoft Azure v2 is still in the preview version.

Chapter 3: Why AZURE is important ?



Enterprises across the globe are realizing great success with business solutions powered by Cloud. They are redefining the way they do business with scalable & secure cloud-enabled enterprise applications. Globally, 90% of Fortune 500 companies are using Microsoft Azure to drive their business.

Using deeply-integrated Azure cloud services, enterprises can rapidly build, deploy, and manage simple to complex applications with ease. Azure supports a wide range of programming languages, frameworks, operating systems, databases, and devices, allowing enterprises to leverage tools and technologies they trust.

Here are some of the major reasons to choose Azure for your enterprise:

Infrastructure as a Service (IaaS) and Platform as a Service (PaaS) capabilities:

Azure boasts an enticing combination of IaaS and PaaS services. IaaS enables enterprises to outsource their infrastructure on Azure and pay for what they use and PaaS lets them create their own web apps & solutions without having to buy and maintain the underlying groundwork. Top Azure consultants from the Microsoft partner community can work with Enterprises to leverage Azure PaaS & IaaS to build enterprise apps on the Cloud for accelerated business growth.

Security Offerings:

Security Development Lifecycle (SDL) is an industry leading security process on which Azure has been designed. It comprises security at its core and private data & services stay safe and secure on Azure Cloud. Microsoft Azure offers the was the best compliance coverage of over 50 compliance offerings and is the most trusted cloud platform by U.S. government institutions. Also, it is the first to embrace the new international standard for Cloud privacy, ISO 27018. Thus, Microsoft guarantees the best

in terms of safety for all operations and data on the Azure Cloud.

Scalability and Ductility:

Applications that run easily, unaffectedly and scale from 10 to 10 million users can be created without any additional coding by using Azure. Azure Storage provides ductile, safe, secure and performance-efficient storage services in cloud. It becomes simpler to change settings and use more processors for the application to use.

Unmatched Hybrid Capabilities:

Azure has hybrid capabilities that makes it unique. Azure facilitates easy mobility and a reliable consistent platform between on-premise and public Cloud. Azure provides a broader range of hybrid connections including virtual private networks (VPNs), caches, content delivery networks (CDNs), and ExpressRoute connections to improve usability and performance.

Integrated Environment with Other Microsoft Tools:

Organizations dependent on Microsoft tools like Office 365, Outlook and SharePoint invests in a cloud platform that impeccably integrates with Microsoft products. Use of Azure simplifies operations by using the same virtual on-premise machines like Windows and Linux.

Analytics and Intelligence capabilities:

Azure facilitates SQL and NoSQL data services and built-in support for digging deeper into data and uncovering key insights

for improving business processes and decision making. Azure is the only cloud platform that offers Blockchain as a Service (BaaS), Machine Learning, Bots, and Cognitive APIs capabilities.

Choosing the right Cloud vendor is a very important decision for Enterprises. Numerous enterprises have witnessed accelerated business growth by choosing Azure as their cloud platform.

Easy learning curve:

Familiar tools such as Visual Studio, ASP.NET, and programming languages like Visual Basic, C++, C#, etc., are used to develop cloud native applications, it is thus easy for consultants to develop cloud based enterprise applications.

Cost Efficient Platform:

Microsoft's pay-as-you-go model allows you to pay for what you use to build or expand resources using Azure services. This cuts down the IT administration costs to a minimum as infrastructure is taken care by Microsoft on Azure. It connects datacenters to the cloud effortlessly and supports 42 regions like no other cloud provider.

Interoperability:

Amalgamated applications can be developed for on-premises applications such as cloud database with Azure. Azure aids Internet protocols and open standards such as XML, SOAP, REST and HTTP. A software development kit for Java, PHP, and Ruby is available for applications written in those languages and Azure tools for Eclipse.

Identity & Access Management (IAM):

Azure offers secure IAM capabilities with Azure Active Directory service to enable right users to access the right information. With Azure, Enterprises can adopt mature IAM capabilities to reduce identity management costs and become more agile, thus supporting innovative business initiatives.

Other public cloud platforms such as Amazon Web Services and Google Cloud Platform also provide similar capabilities like Microsoft Azure. However, with the sheer speed that Microsoft is launching new components in Azure, it is apparent that it is scored higher in the market place. Trusted Microsoft partners such as Saviant are helping enterprises build scalable & secure cloud native applications by taking full advantage of Azure platform.

Chapter 4: How AZURE can help in business?

Azure can help in our business in the following ways-

- **Capital less:** We don't have to worry about the capital as Azure cuts out the high cost of hardware. You simply pay as you go and enjoy a subscription-based model that's kind to your cash flow. Also, to set up an Azure account is very easy.

You simply register in Azure Portal and select your required subscription and get going.

- **Less Operational Cost:** Azure has low operational cost because it runs on its own servers whose only job is to make the cloud functional and bug-free, it’s usually a whole lot more reliable than your own, on-location server.
- **Cost Effective:** If we set up a server on our own, we need to hire a tech support team to monitor them and make sure things are working fine. Also, there might be a situation where the tech support team is taking too much time to solve the issue incurred in the server. So, in this regard is way too pocket-friendly.
- **Easy Back Up and Recovery options:** Azure keep backups of all your valuable data. In disaster situations, you can recover all your data in a single click without your business getting affected. Cloud-based backup and recovery solutions save time, avoid large up-front investment and roll up third-party expertise as part of the deal.
- **Easy to implement:** It is very easy to implement your business models in Azure. With a couple of on-click activities, you are good to go. Even there are several tutorials to make you learn and deploy faster.
- **Better Security:** Azure provides more security than local servers. Be carefree about your critical data and business applications. As it stays safe in the Azure Cloud. Even, in natural disasters, where

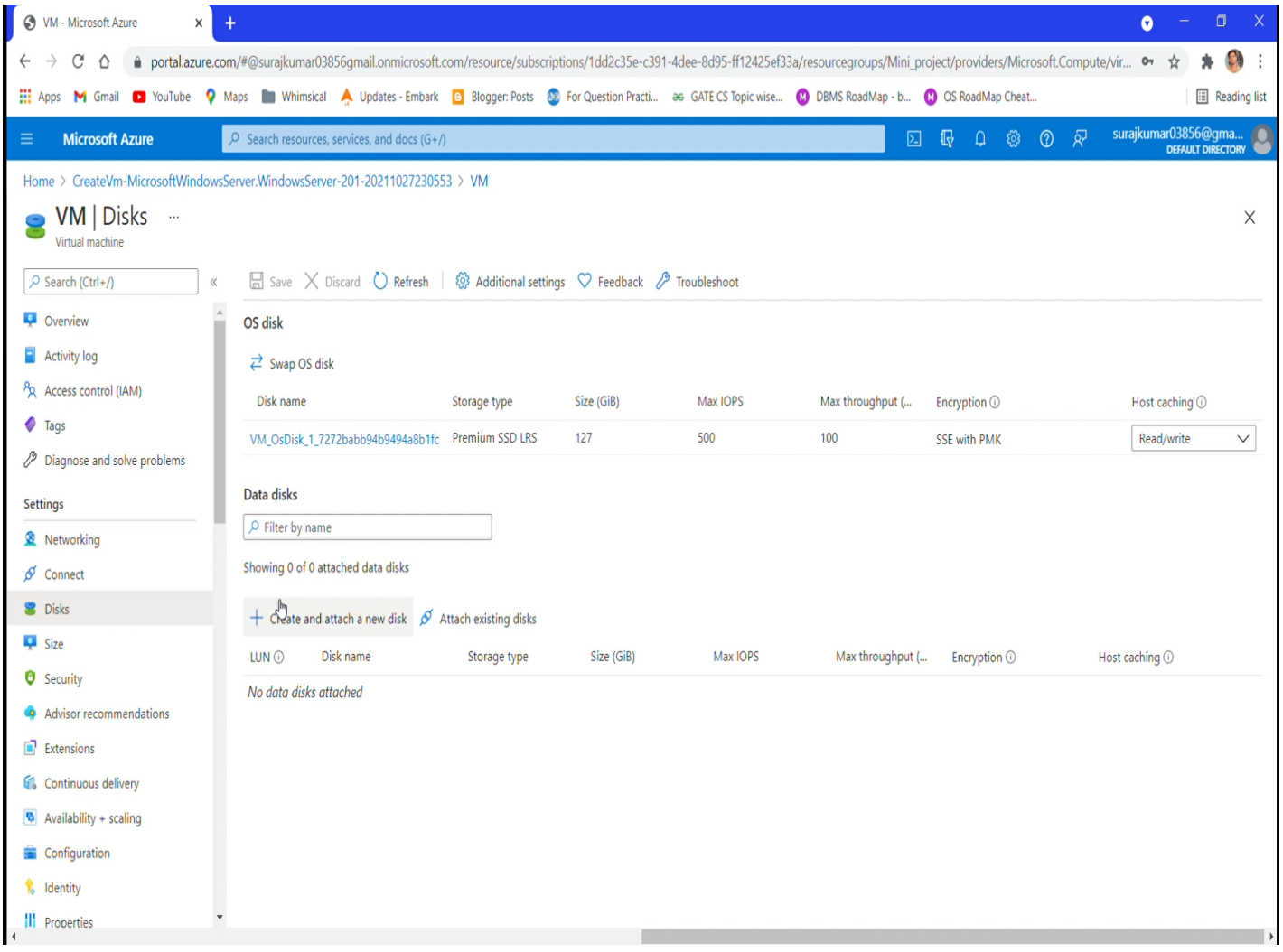
the resources can be harmed, Azure is a rescue. The cloud is always on.

- **Work from anywhere:** Azure gives you the freedom to work from anywhere and everywhere. It just requires a network connection and credentials. And with most serious Azure cloud services offering mobile apps, you're not restricted to which device you've got to hand.
- **Increased collaboration:** With Azure, teams can access, edit and share documents anytime, from anywhere. They can work and achieve future goals hand in hand. Another advantage of the Azure is that it preserves records of activity and data. Timestamps are one example of the Azure's record keeping. Timestamps improve team collaboration by establishing transparency and increasing accountability.

Chapter 5: Theory on how to attach extra disc in VM :-

A data disk is a virtual hard disk (VHD) that is attached to a Virtual Machine in order to store the required data. These disks are registered as Small Computer System Interface (SCSI) drives and you can use an alphabet to label them. Each of these disks has a maximum storage capacity of 1023 GB. VM's size helps in determining the number of disks that can be attached to it and also the storage you should use to hosts them. So, when you add a data disk to an Azure Virtual Machine, a VHD is created.

Chapter 6: Steps to attach extra disc in VM :-



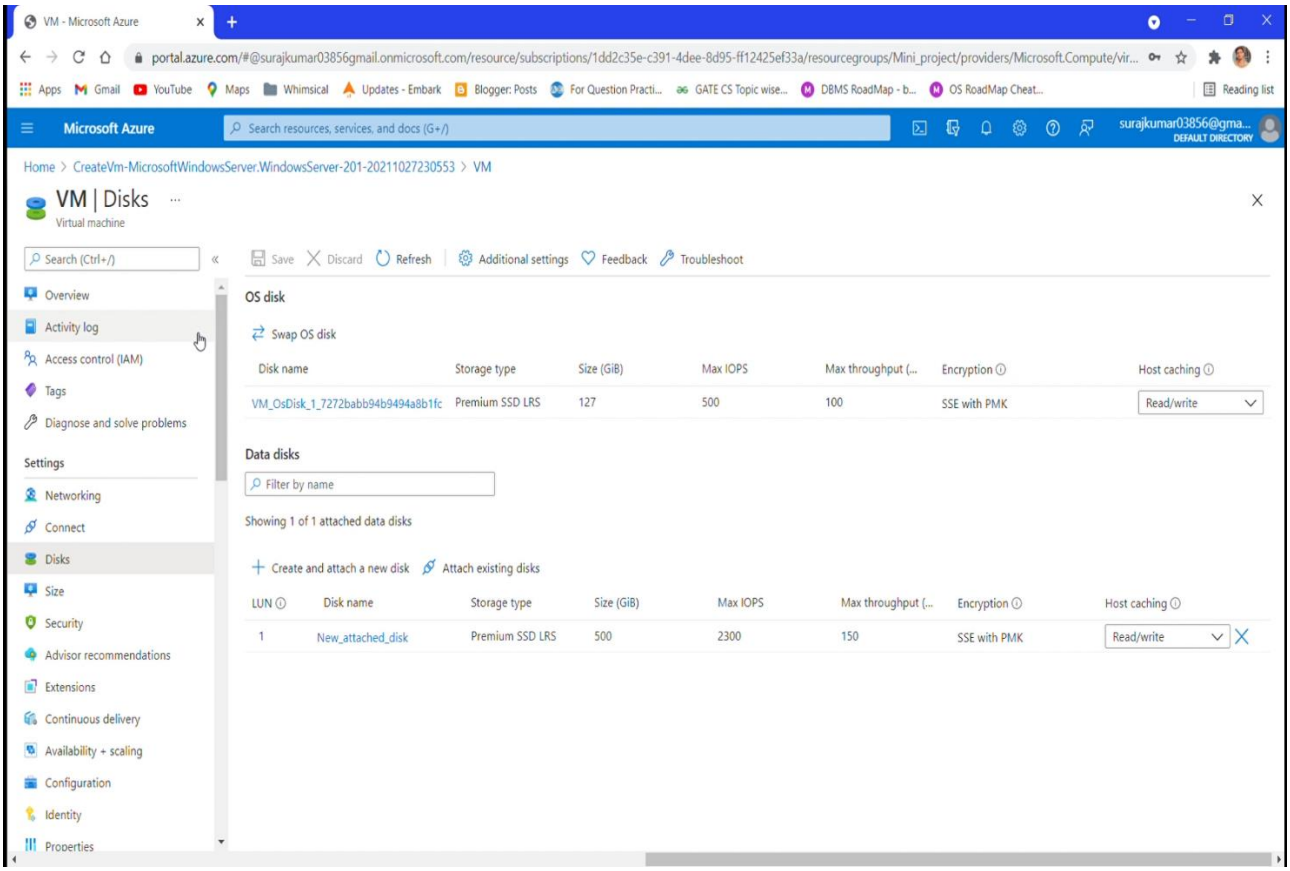
Add a data disk :-

1. Sign in to the Azure portal.
2. Search for and select **Virtual machines**.
3. Select a virtual machine from the list.

4. On the **Virtual machine** pane, select **Disks**.
5. On the **Disks** pane, select **Create and attach a new disk**.
6. In the drop-downs for the new disk, make the selections you want, and name the disk.
7. Select **Save** to create and attach the new data disk to the VM.

Initialize a new data disk :-

1. Connect to the VM.
2. Select the Windows **Start** menu inside the running VM and enter **disk management** in the search box. The **Disk Management** console opens.
3. Disk Management recognizes that you have a new, uninitialized disk and the **Initialize Disk** window appears.
4. Verify the new disk is selected and then select **OK** to initialize it.
5. The new disk appears as **unallocated**. Right-click anywhere on the disk and select **New simple volume**. The **New Simple Volume Wizard** window opens.
6. Proceed through the wizard, keeping all of the defaults, and when you're done select **Finish**.
7. Close **Disk Management**.
8. A pop-up window appears notifying you that you need to format the new disk before you can use it. Select **Format disk**.
9. In the **Format new disk** window, check the settings, and then select **Start**.
10. A warning appears notifying you that formatting the disks erases all of the data. Select **OK**.
11. When the formatting is complete, select **OK**.



Next steps

- You can also attach a data disk by using PowerShell.
- If your application needs to use the *D:* drive to store data, you can change the drive letter of the Windows temporary disk.

References:

- GeekforGeeks
- Tutorials Point
- http://docs.microsoft.com/
- Saviant applying intelligence