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Introduction

- BLOB stands for binary large objects, which are used for storing binary data, such as an image, files, videos.
- Microsoft Azure is a cloud computing service created by Microsoft for building, deploying, and managing applications and services through a global network of Microsoft-managed data centres.
- > Azure Blob storage is a service that stores unstructured data in the cloud as objects/blobs
- Large data objects that have no limits of size, such as image, sound, video and animation Almost all the applications will use the large data object.

HISTORY

 Who?:

 Azure was announced in October 2008 and released on February 1, 2010 as Windows Azure, before being renamed to Microsoft Azure on March 25, 2014.

Why?:

- Cloud computing enables new scenarios for applications requiring scalable, durable, and highly available storage.
- > To enable developers to build large-scale applications to support new scenarios

Robustness is its key feature.

- How?:
- > Using an Object Storage architecture.

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ĸ	key Features	
	Cloud Storage:	
	Anywhere and anytime access	
	Blobs, Disks, Tables, Queues and Files	
	Highly Durable, Available and Scalable	
	Microsoft Azure is fast:	
	> Speed of deployment	
	> Speed of operation	
	> Speed of scalability	
	Azure has a fully integrated delivery pipeline:	
	> Source control	
	> Unit testing	
	Integration testing	
	> Delivery	
	> Go live tools	
	Easily build "Internet scale" applications:	
	More than 35 trillion stored objects	
	> 3.5+ Million requests/sec on average	
	Pay only for what you use	
	Exposed via easy and open REST APIs	

74	avantages	Disadvantag
-		
	High Availability:	b. Demiler Menne
	 Offers high availability and redundancy in data centres on a global scale. CLA = 6.00 FFW (accession to be a scalar of downline accession) 	Requires Manager
	 SLA of 99.55%(approximately 4.38 nours of downtime per year). 	
	SECIIDITY -	Poor Management
	Multi-factor authentication	> Tools
	 Password Protection. 	
		> Inability to Uploa
	SCALABILITY:	> Its easy to transfe
	 Microsoft Azure makes it easy to scale compute power up or down. 	
	SDEED-	
	Faster than traditional application development.	
	ECONOMICS:	
	Cost-Effective.	
	Parcistant data storago	
	reisistent data storage.	
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Azure pricing: No upfront costs. No tormination free. Pay as per usage. Per minute billing AZURE BASIC SERVICE PLAN	4:			
ISTANCE	CORES	RAM	STORAGE	PRICES
B1 Basic	1	1.75 GB	10 GB	\$0.075/h
B2 Basic	2	3.50 GB	10 GB	\$0.15/hr
B3 Basic	4	7 GB	10 GB	\$0.30/hr

Cost contd	PLAN:			
INSTANCE	CORES	RAM	STORAGE	PRICES
S1 standard	1	1.75 GB	50 GB	\$0.10/tv
S2 Standard	2	3.50 GB	50 GB	\$0.26/tv
53 Standard	4	7 GB	50 GB	\$0.40yhr
> AZURE PREMIUM SERVICE	PLAN:		Bour	er Microsoft.com
INSTANCE	CORES	RAM	STORAGE	PRICES
P1 Premium	1	1.75 GB	250 GB	\$0.30/9r
P2 Premium	2	3.50 GB	250 GB	\$0.60,%r
P3 Premium	4	7 GB	250 GB	\$1.20/9r
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FOR ACCOUNT CREATION THERE ARE FOUR REPLICATIONS

- > Locally Redundant Storage (LRS)
- > Zone redundant Storage (ZRS)
- > Geo Redundant Storage (GRS)
- > Read Access Geo Redundant Storage (RA-GRS)

STORAGE TIERS OF AZURE

HOT STORAGE TIER-

The Azure hot storage tier is optimized for storing data that is accessed frequently

COOL STORAGE TIER-The Azure hot storage tier is optimized for storing data that is accessed frequently.

Data Redundancy Options

- > Locally Redundant Storage (LRS)- Makes multiple synchronous copies of your data within a single datacentre.
- > Zone Redundant Storage (ZRS)- Stores three copies of data across multiple data centers within or across regions. For block blobs only.

Data Redundancy Options contd...

- > Geographically Redundant Storage (GRS)- Same as LRS, plus multiple asynchronous copies to a second data centre hundreds of miles away.
- > Read-Access Geographically Redundant Storage (RA-GRS) Same as GRS, plus read access to the secondary datacentre.

Storage pricing

Block blob: Blob storage accounts support only block and append blobs

	LRS-COOL	LRS-HOT	GRS-COOL	GRS-HOT	RAGRS-COOL	RAGRS-HOT
First 50 TB / Month	\$0.01	\$0.0184	\$0.02	\$0.0368	\$0.025	\$0.046
Next 450 TB / Month	\$0.01	\$0.0177	\$0.02	\$0.0354	\$0.025	\$0.0442
Over 500 TB / Month	\$0.01	\$0.017	\$0.02	\$0.0339	\$0.025	\$0.0424

> Blob storage accounts expose the Access Tier attribute, which allows to specify the storage tier as Hot or Cool depending on the data stored in the account.

> Blob storage accounts support only block and append

> Changing the storage tier result in additional charges.

NOTES

blobs, and not page blobs.

	LRS-COOL	LRS-HOT	GRS-COOL	GRS-HOT	RAGRS-COOL	RAGRS-HOT
sth.	\$0.01	\$0.0184	\$0.02	\$0.0368	\$0.025	\$0.046
onth	\$0.01	\$0.0177	\$0.02	\$0.0354	\$0.025	\$0.0442
onth	\$0.01	\$0.017	\$0.02	\$0.0339	\$0.025	\$0.0424

ACCES	S PRIC	ING				
	LRS-COOL	LRS-HOT	GRS-COOL	GRS-HOT	RAGRS-COOL	RAGRS-HO
t Blob/Block, List, Create ntainer Operations ar 10,000)	\$0.10	\$0.05	\$0.20	\$0.10	\$0.20	\$0.10
l other operations except Delete, vich is from er 10,000)	\$0.01	\$0.004	\$0.01	\$0.004	\$0.01	\$0.004
ita Retrieval (per GB)	\$0.01	Free	\$0.01	Free	\$0.01	Free
ta Write (per GB)	\$0.0025	Free	\$0.005	Free	\$0.005	Free
o-Replication Data Transfer (per 0	N/A	N/A	\$0.02	\$0.02	\$0.02	\$0.02
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FILE : STORAGE		
LRS		GRS
\$0.08 per GB		\$0.10 per GB
> ACCESS DATA		
	LRS	GRS
Put, Create Container Operations (per 10,000)	\$0.015	\$0.03
List Operations (per 10,000)	\$0.015	\$0.015
All other operations except Delete, which is free (per 10,000)	\$0.0015	\$0.0015
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	AGE: MANAGED	AND UNMANAG	ED
MANAGED D	DATA STORAGE		
> PREMIU	M MANAGED DISK		
	P10	P20	P30
Disk Size	128 GB	512 GB	1,024 GB
Price per month	\$19.71	\$73.22	\$135.17
IOPs per disk	500	2,300	5,000
Throughput per disk	100 M8 / second	150 MB / second	200 MB / second
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STANDAF	RD MANAG	ied disk			
	54	56	510	S20	\$30
Disk Size	32 GB	64 GB	128 GB	512 GB	1,024 G8
Price per month (promotional)	\$0.77	\$1.51	\$2.95	\$10.88	\$20.48
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UNMANAGED D	ISK- PREMIUM		
DISK TYPES	P10	P20	P30
Disk Size	128 GB	512 GB	1,024 GB
Price per month	\$19.71	\$73.22	\$135.17
IOPs per disk	500	2,300	5,000
Throughput per disk	100 MB / second	150 MB / second	200 MB / second
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STANDARD			
STORAGE CAPACITY	LRS	GR5	RA-GRS
First 1 TB / Month	\$0.05 per GB	\$0.095 per GB	\$0.12 per GB
Next 49 TB (1 to 50 TB) / Month	\$0.05 per G8	\$0.08 per G8	\$0.10 per GB
Next 450 TB (50 to 500 TB) / Month	\$0.05 per GB	\$0.07 per GB	\$0.09 per GB
Nest 500 TB (500 to 1,000 TB) / Month	\$0.05 per GB	\$0.065 per GB	\$0.08 per GB
Next 4,000 TB (1,000 to 5,000 TB) / Month	\$0.045 per GB	\$0.06 per GB	\$0.075 per GB
Over 5,000 TB / Month	Contact us	Contact us	Contact us
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TABLE STORA	GE -		
STORAGE CAPACITY	URS	GRS	RA-GRS
First 1 TB / Month	\$0.07 per GB	\$0.095 per GB	\$0.12 per GB
Next 49 TB (1 to 50 TB) / Month	\$0.065 per GB	\$0.08 per GB	\$0.10 per GB
Next 450 TB (50 to 500 TB) / Month	\$0.06 per GB	\$0.07 per GB	\$0.09 per GB
Next 500 TB (500 to 1,000 TB) / Month	\$0.055 per GB	\$0.065 per GB	\$0.08 per GB
Next 4,000 TB (1,000 to 5,000 TB) / Month	\$0.045 per GB	\$0.06 per GB	\$0.075 per GE
Over 5,000 TB / Month	Contact us	Contact us	Contact us
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QUEUE STORAGE-LRS \$0.07 per GB GRS RA-GR \$0.095 per GB \$0.12 p \$0.065 per GB \$0.08 per GB t 49 TB (1 to 50 TB) / Month \$0.10 pe \$0.06 per GB t 450 TB (50 to 500 TB) / Month \$0.07 per G8 \$0.09 m t 500 TB (500 to 1.000 TB) / Month \$0.055 per GB \$0.065 per GB t 4.000 TB (1.000 to 5.000 TB) / Mo \$0.045 per GB \$0.06 per GB r 5.000 TB / Month Contact us





Conclusion

- > Microsoft azure is closely integrated with other Microsoft tools
- > You only need to pay for what you use.
- > It offers high availability and redundancy.
- \succ It has strong consistency, multiple page blobs (append, page and block blob) .



Use the Azure portal to manage a file share - The Azure portal provides a user interface for customers to manage file shares. From the portal, you can: - Create your file share - Upload and download files to and from your file share - Monitor the actual usage of each file share - UNIVERSITY of WASHINGTON







New file share File service (asureportaldense)	^		
* Name			
demoshare	~		
Quota 0			
5120	~		
	GB		

<u> </u>						
hoose one file share your already created						
choose one me sha	e your uncuc	iy created				
File service						
•						
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Essentials 1		Ċ				
Storage account	file service encpoint					
Status Primarie Available Secondarie Available	and the second se					
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File shares						
File shares	MODIFILD	QUOTA				



Uploading and downloading files to Azure Blob Storage with PowerShell alternatively

- > Upload blobs from local folder
- > One of the files in my folder is called "SnowyCabin.jpg". I'm going to set a variable for \$BlobName – the actual name of the blob – and then append it with the \$localFileDirectory to create the path to the local file. Then we'll use the Set-AzureStorageBlobContent cmdlet to upload the file. To use that, you specify the path to the local file, the name of the container, the name of the blob, and the storage context.

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Download blobs to local disk

- > First, we need to set a variable for the target directory on the local machine.
- > \$localTargetDirectory "D:_Temp_AzureFilesDownloaded"
 > To download a blob, use the cmdlet
- GetAzureStorageBlobContent. I'm going to download 3 of the files I uploaded.
- > \$BlobName = "BluebellsAndBeechTrees.jpg" Get-AzureStorageBlobContent -Blob \$BlobName -Container \$ContainerName
- -Destination \$localTargetDirectory -Context \$ctx > Now if I look in that local directory, I see those files.

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