

Cloud Computing Administration (ACCA6025_LON)

assessment 1

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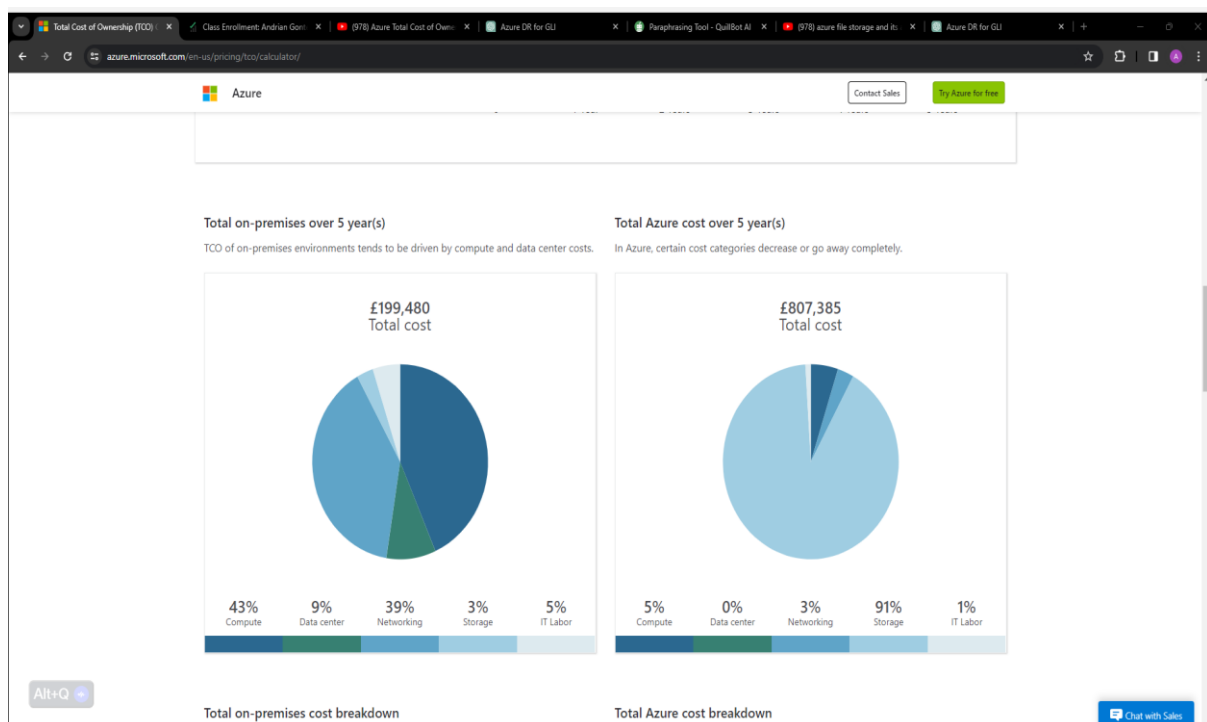
Introduction

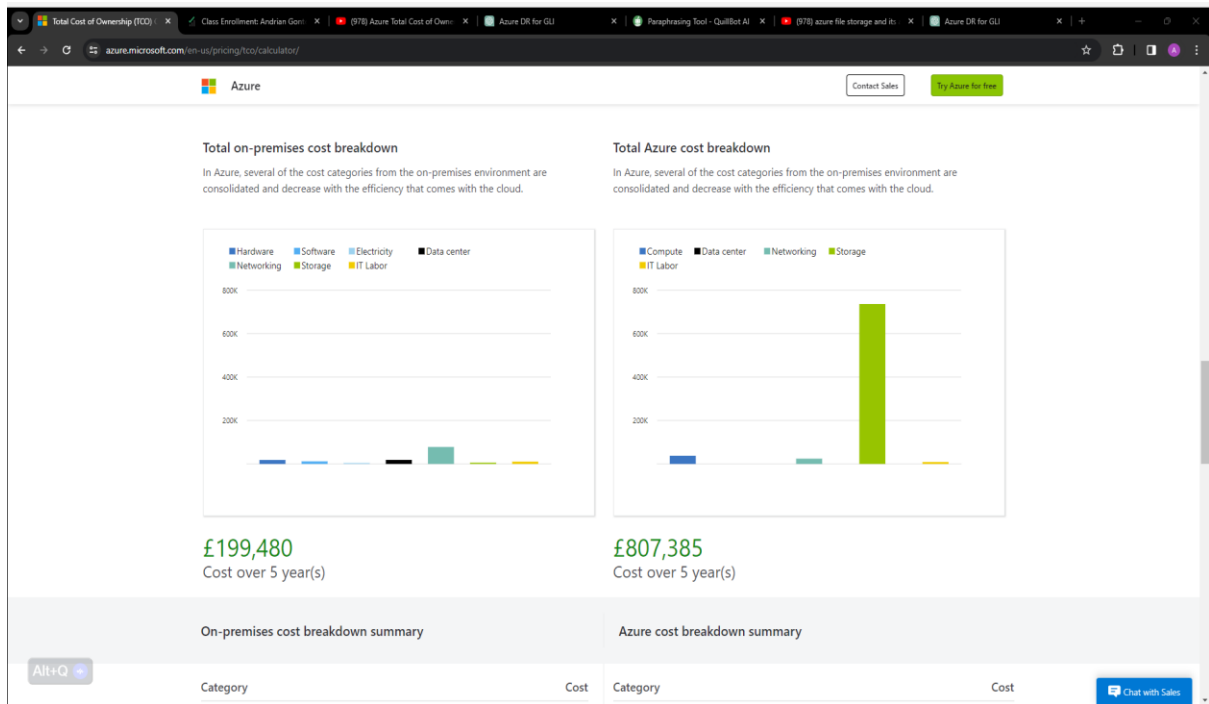
In this proposal, a calculated transition plan for GLI's file storage and database systems is outlined. The goal of this approach is to transfer these systems to the cloud platform that Azure provides. Through the utilisation of Azure's wide variety of complementing services, the major purpose of the migration process is to illustrate the viability of shifting to Azure File storage and Azure Databases as well as the benefits that would result from doing so.

In addition to providing a comprehensive analysis of the difficulties that GLI is now encountering in the administration of its data infrastructure, this article also presents Azure as a solution that is both practical and effective. It is possible for GLI to initiate a gradual transfer process by utilising the free services offered by Azure. This procedure will begin with the transfer of file storage and databases. In the proposal, the most important characteristics and advantages of Azure File storage and Azure Databases are highlighted, with a special emphasis placed on the scalability, stability, and security of these services.

1.Azure Total Cost of Ownership

There are several other elements that might have an effect on the total cost of ownership for Azure. There are direct expenses associated with infrastructure and computing, as well as indirect costs such as training and maintenance. These costs should be considered. Another aspect to consider is the possible advantages, such as the capacity to scale. When organisations have a thorough awareness of these characteristics, they are able to make educated decisions regarding the adoption of Azure, which may assist them in optimising their expenditure and maximising their return on investment.





Azure

Contact Sales Try Azure for free

£199,480
Cost over 5 year(s)

£807,385
Cost over 5 year(s)

On-premises cost breakdown summary

Category	Cost
Compute	£86,201.82
Hardware	£18,416.29
Software	£11,876.80
Electricity	£4,297.90
Virtualization	£7,369.05
Database	£44,241.80
Data Center	£18,664.40
Networking	£78,203.34
Storage	£5,757.71
IT Labor	£10,652.10
Total	£199,479.75

Azure cost breakdown summary

Category	Cost
Compute	£37,734.46
Data Center	£0.00
Networking	£24,314.05
Storage	£736,459.58
IT Labor	£8,876.75
Total	£807,384.88

Estimated on-premises cost (5 year(s))

Compute cost

Data center cost

Estimated Azure cost (5 year(s))

Azure compute cost

Azure data center cost

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2. Azure File Storage and its associated features, security measure

Microsoft Azure provides a cloud-based storage solution that is referred to as the Azure File Storage service. Additionally, Microsoft Azure is the provider of this service. It is able to create file shares that are not just widely accessible but also scalable since it makes use of well-established protocols such as Server Message Block and Representational State Transfer. Access to these file sharing is possible from any place in the world. When it comes to storing and sharing files across a broad variety of applications and platforms, Azure File Storage is becoming an increasingly important component. This is because businesses are continuing to migrate more and more towards cloud-based solutions. Cloud-based solutions are becoming increasingly popular among organisations. Within the scope of our investigation, we will concentrate on its capabilities, advantages, and the precautions that have been taken to ensure the safety of the data that is kept within Azure File Storage during our investigation. It is planned to carry out these actions in order to guarantee the safety of the data.

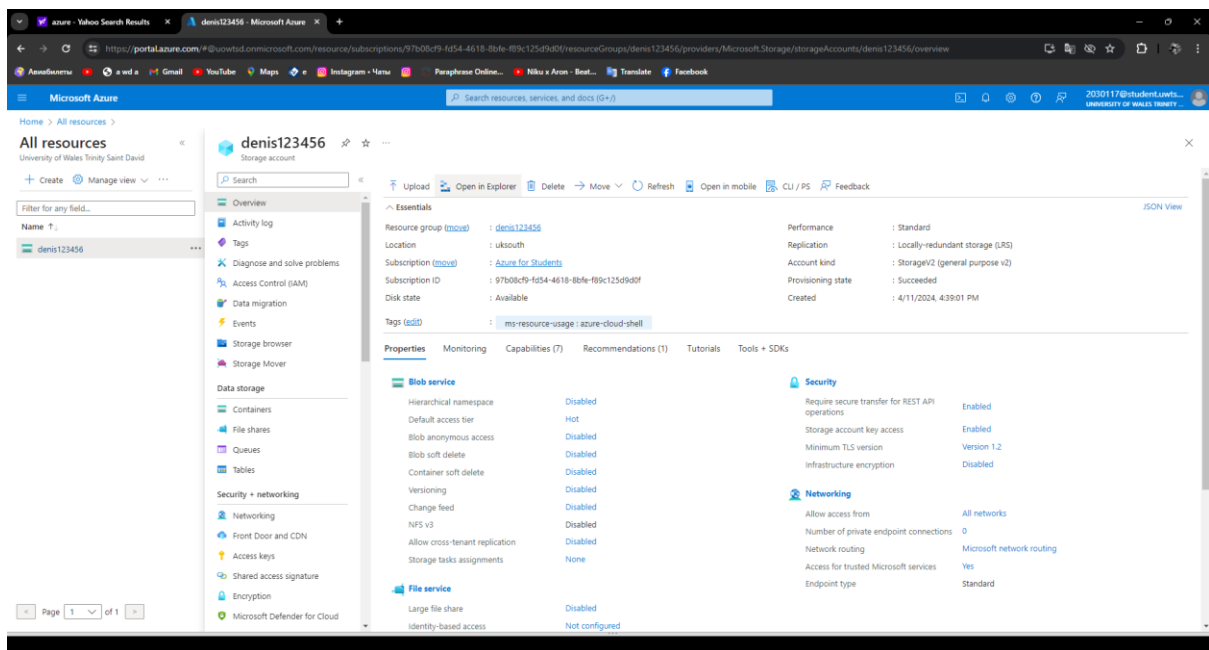
The capabilities and performance of the Azure File Storage Service on Microsoft Azure

Scalable file shares are made available by Microsoft Azure File Storage. These file shares make it possible for businesses to expand their storage capacity in accordance with their requirements without having to worry about the management of their infrastructure. Scalability is a capability that is now available through the Microsoft Azure File Storage platform.

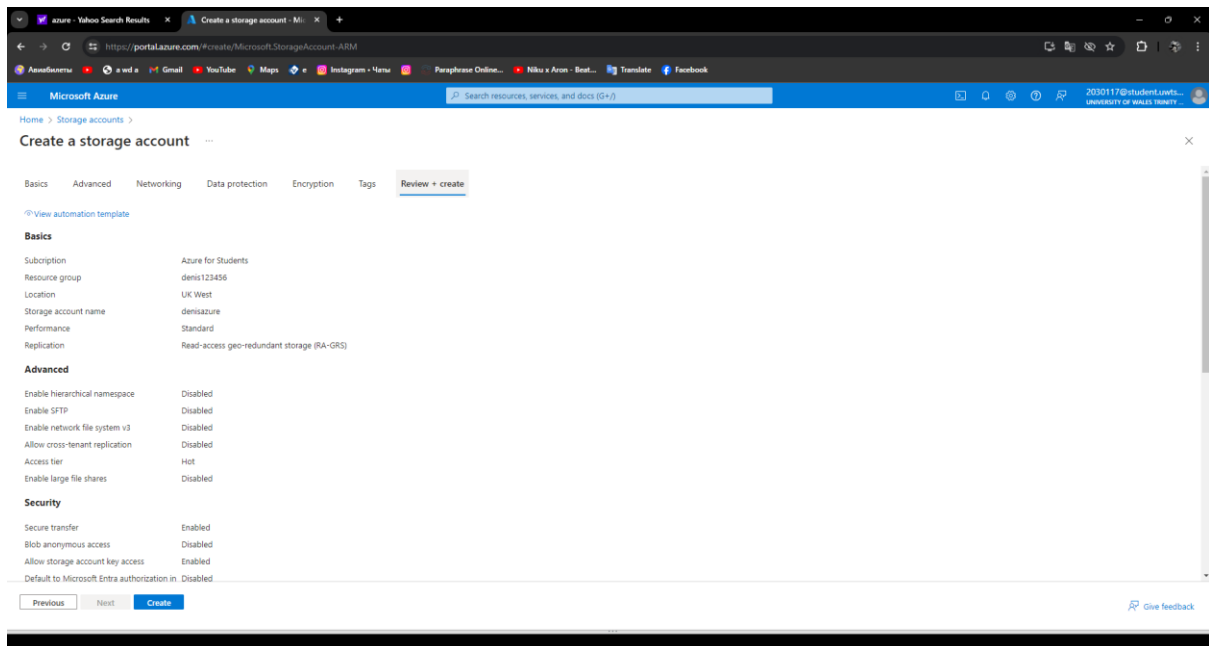
Users of a broad variety of operating systems, like as Windows, Linux, macOS, and others, are able to access files that have been saved in Azure File Storage by employing the standard Smb protocols. This allows users to access files from those operating systems. Individuals that possess this specific capacity are referred to as having universal access.

Azure File Storage is able to connect seamlessly with other Azure services, such as Virtual Machines, App Services, and Azure Linux Service, without generating any problems. This seamless integration is made possible by Azure File Storage's advanced integration capabilities. The fact that this is the case makes it feasible for the numerous Azure resources to readily work with one another and share files with one another.

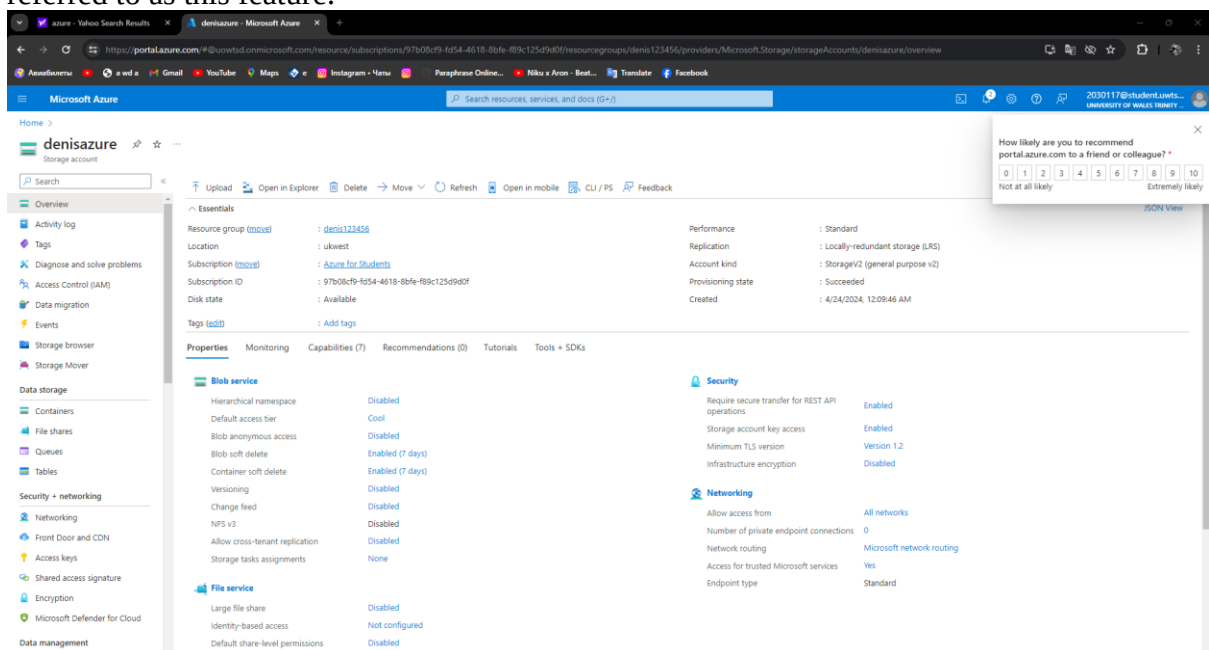
Azure File Storage replicates data across many data centres that are located within a region. This guarantees that the data is both highly available and redundant. It is because of this that the data is constantly available for access. This decreases the likelihood that data will be lost as a result of hardware that is not operating properly or any other natural disasters that may take place.



Data Encryption: In order to safeguard data that is kept in file shares, Azure File Storage offers encryption for the data while it is in a state of rest. In the case that this takes place, it ensures that the data will continue to be encrypted and inaccessible, even in the event that unauthorised access is obtained.



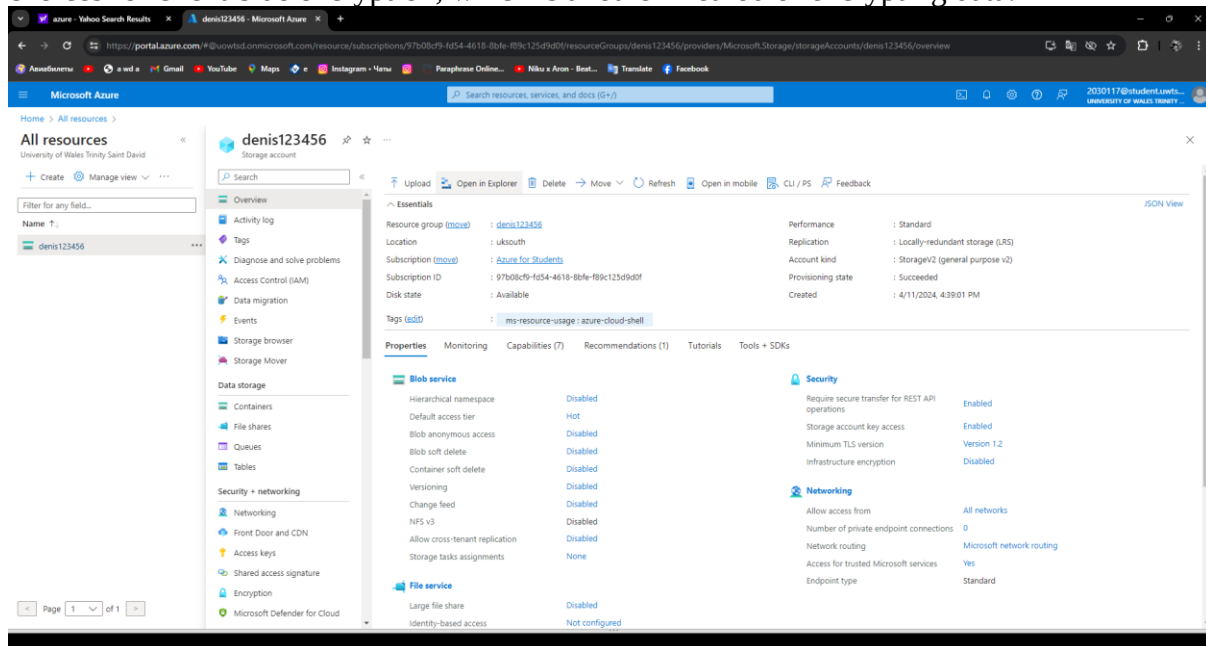
Using the built-in backup and restoration features that Azure File Storage provides, organisations are able to generate snapshots of file shares and, if required, restore them to a prior state. This is made possible by the fact that the snapshots may be created and restored. The functionality of backing up and restoring data that is offered by Azure File Storage is referred to as this feature.



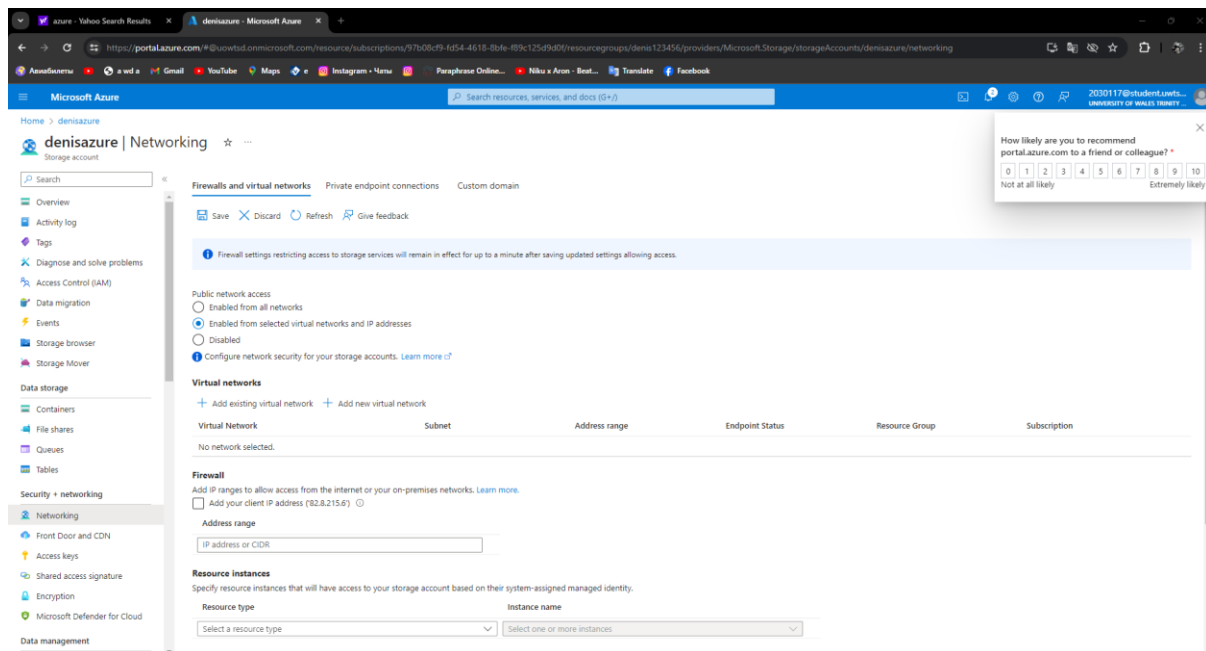
Performance Tiering: Because Azure File Storage supports a variety of various performance tiers, including Standard and Premium tiers, it gives businesses the freedom to pick the right tier based on the performance and availability requirements that they have. This flexibility allows businesses to better meet their needs.

The precautions and measures that have been implemented to guarantee the security of the Azure File Storage

Server-side encryption is utilised by Microsoft Azure File Storage in order to encrypt data while it is being stored in the Azure File Storage service. This ensures that the data that is stored on file shares will continue to be safeguarded even in the event that the physical storage medium is found to be hacked. One method of encrypting data before it is uploaded to a storage account is known as client-side encryption. Microsoft Azure also provides choices for client-side encryption, which is another method of encrypting data.



One of the features that Azure File Storage provides is the ability to set granular access restrictions. This is made possible through the integration of Azure Active Directory. Using these controls, organisations are able to select who is permitted to access file shares and what activities they are permitted to take out. This allows the organisations to effectively manage their data. It is possible to limit access based on user identities, groups, or roles, which guarantees that only authorised users will be able to access sensitive data. Because it is possible to restrict access, this is made possible by the fact that it is practical.



Security for Networks: Azure File Storage gives businesses the opportunity to define network security settings, such as network access control lists and virtual networks, in order to restrict access to file shares from certain IP addresses or virtual networks. This is done in order to ensure that only authorised users can access the files. Because of this, companies are able to improve the security of their networks. Through the implementation of this step, the prevention of unauthorised access from threats that originate from the internet or from networks that are external to the system is made easier.

Auditing and Monitoring: Azure File Storage provides auditing and monitoring capabilities through platforms such as Azure Monitor and Azure Security Centre. These capabilities are available to clients. These features make it possible for businesses to monitor and keep track of actions such as accessing files, making adjustments, and other activities. This is done for the purpose of ensuring compliance and security. It is possible to obtain information from the audit logs on who accessed files, when those files were accessed, and what activities were taken out as a result of viewing those files. Consequently, this makes it possible for businesses to identify security incidents and react to them in a manner that is not only effective but also efficient.

Protection of Data: Azure File Storage makes use of data protection mechanisms like as replication and redundancy to guarantee that the data that has been gathered is not only

available but will also continue to be accessible for a considerable amount of time. Through the process of duplicating data across a number of data centres that are situated within a region, Azure File Storage is able to reduce the risk of data loss that may occur as a result of hardware failures or natural disasters. This is accomplished by distributing the data copy over many data centres.

Certifications for Compliance: Azure File Storage is compliant with a broad variety of compliance certifications and standards, including ISO, SOC, and GDPR Certifications, amongst others. The fact that this is the case ensures that the data that is saved in file sharing fulfils the legislative criteria for the protection of data, the privacy of users, and the security of the data.

Concluding remarks:

There are a number of capabilities that are incorporated in Azure File Storage, which provides a solution that is both reliable and secure for storing and sharing files in the cloud. Scalability, access across several platforms, integration with Azure services, and built-in security measures are some of the qualities that are included in this category. When it comes to the process of securing their data from unauthorised access, data breaches, and compliance violations on their end, organisations may receive support from Microsoft Azure File Storage. This purpose can be realised by the use of encryption, access restrictions, network security, audits, and compliance certifications as additional ways of assurance. Companies are needed to apply additional security best practices, such as robust authentication, data categorization, and periodic security assessments, in order to improve the overall security posture of their Azure File Storage installations. This is the case despite the fact that this is the case. This action is taken in order to guarantee that their applications are safeguarded from any potential dangers that may arise. In general, Azure File Storage provides a platform that is both reliable and secure for the purpose of storing and managing files in the cloud. Through the use of this platform, organisations are able to reap the benefits of cloud computing while simultaneously preserving the security, integrity, and availability of their data.

3. Azure database options and recommend the most suitable one for storing user profiles

There is a large variety of database services that can be accessed through Azure, and these services may be adapted to meet the requirements of a wide range of different use cases. These offers include solutions for relational databases, NoSQL databases, and data centres. In addition, these solutions are available. When it comes to the preservation of user profiles, there are a number of specific considerations that need to be taken into account in the appropriate manner. Some of the characteristics that are included in this area include the data structure, the scalability, the performance, and the cost-effectiveness. Within the scope of our investigation, we will first do an examination of the several Azure database possibilities, and then we will provide a recommendation regarding which of these alternatives is the most appropriate for the storage of user profiles.

The most widely used alternative is the Azure SQL Database.

Home > SQL databases > Create SQL Database

Microsoft

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Project details

Select the subscription to manage deployed resources and costs. Use resource groups like folders to organize and manage all your resources.

Subscription *

Resource group * [Create new](#)

Database details

Enter required settings for this database, including picking a logical server and configuring the compute and storage resources.

Database name *

Server * [Create new](#)

☒ The value must not be empty.

Want to use SQL elastic pool? ☐ Yes ☒ No

Workload environment ☐ Development ☒ Production

[Review & create](#) [Next: Networking >](#)

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Not at all likely Extremely likely

Home > SQL databases > Create SQL Database > Create SQL Database Server

Microsoft

Server details

Enter required settings for this server, including providing a name and location. This server will be created in the same subscription and resource group as your database.

Server name *

Location *

Authentication

☒ Azure Active Directory (Azure AD) is now Microsoft Entra ID. [Learn more](#)

Select your preferred authentication method for accessing this server. Create a server admin login and password to access your server with SQL authentication, select only Microsoft Entra authentication [Learn more](#) or using an existing Microsoft Entra user, group, or application as Microsoft Entra admin [Learn more](#) or, or select both SQL and Microsoft Entra authentication.

Authentication method ☐ Use Microsoft Entra-only authentication ☐ Use both SQL and Microsoft Entra authentication ☒ Use SQL authentication

Server admin login *

Password *

Confirm password *

[OK](#)

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Not at all likely Extremely likely

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Note that if you create tags and then change resource settings on other tabs, your tags will be automatically updated.

Name	Value	Resource
denis	sql	2 selected
	sql	2 selected

Cost summary
Hyperscale (DS_Gen5_2) - Primary replica
Cost per vCore (in USD) 166.68
vCores selected x 2
Hyperscale (DS_Gen5_2) - HA replica
Cost per vCore (in USD) 166.68
vCores selected x 2
HA replica x 0
ESTIMATED COMPUTE COST / MONTH 333.35 USD
STORAGE COST / GB / MONTH 0.29 USD
STORAGE NOTES
1. In the hyperscale tier, storage costs are calculated based on actual allocation. Allocated space increases automatically as needed, up to 100 TB.

Review + create

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azure - Yahoo Search Results

Microsoft.SQLDatabase.newDatabaseNewServer_50c8735aac07443abe379

https://portal.azure.com/#view/HubsExtension/DeploymentDetailsBlade/~/overview?id%2Fsubscriptions%2F97b05cf9-4d54-4618-b8fe-49c125d3d0%2FresourceGroups%2Fdenis123456%2Fproviders%2FMicrosoft.Resources%2Fdeployments%2F...

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Deployment

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Inputs

Outputs

Template

Deployment is in progress

Deployment name : Microsoft.SQLDatabase.newDatabaseNewServer_50c8735aac07443abe379

Subscription : Azure for Students

Resource group : denis123456

Start time : 24/04/2024, 00:45:30

Correlation ID : 71d3cfe4-07f9-4eea-9de2-3c82232e04d5

Deployment details

Resource	Type	Status	Operation details
denisdataserver	SQL server	Accepted	Operation details

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Not at all likely

Extremely likely

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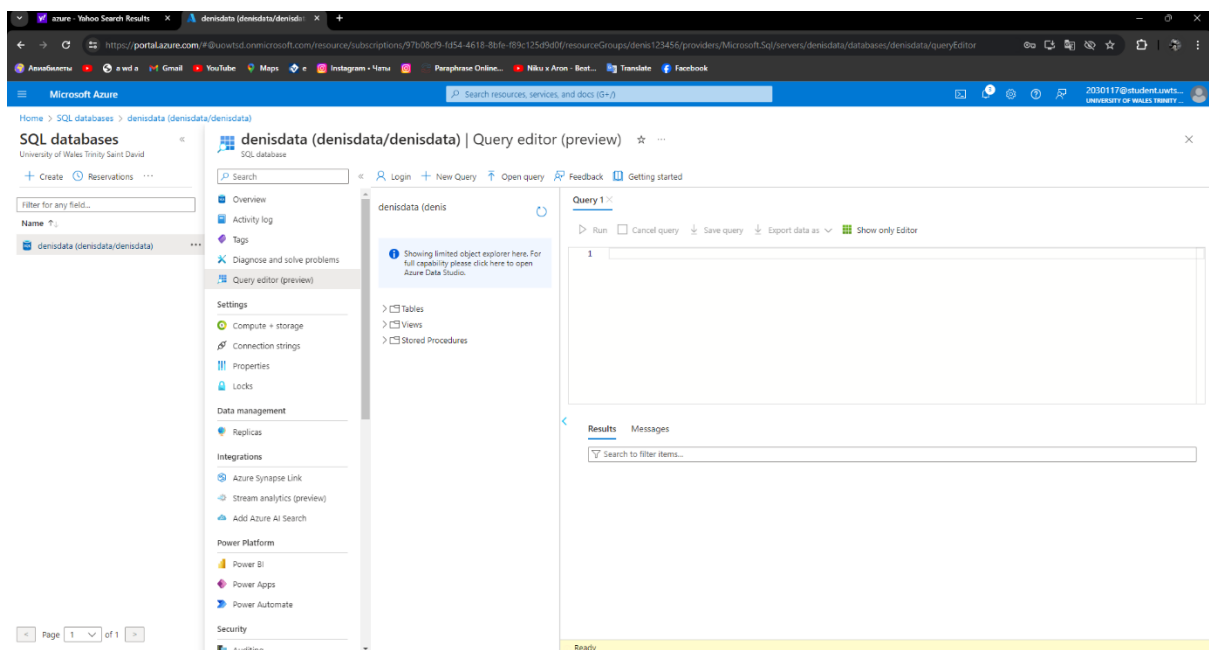
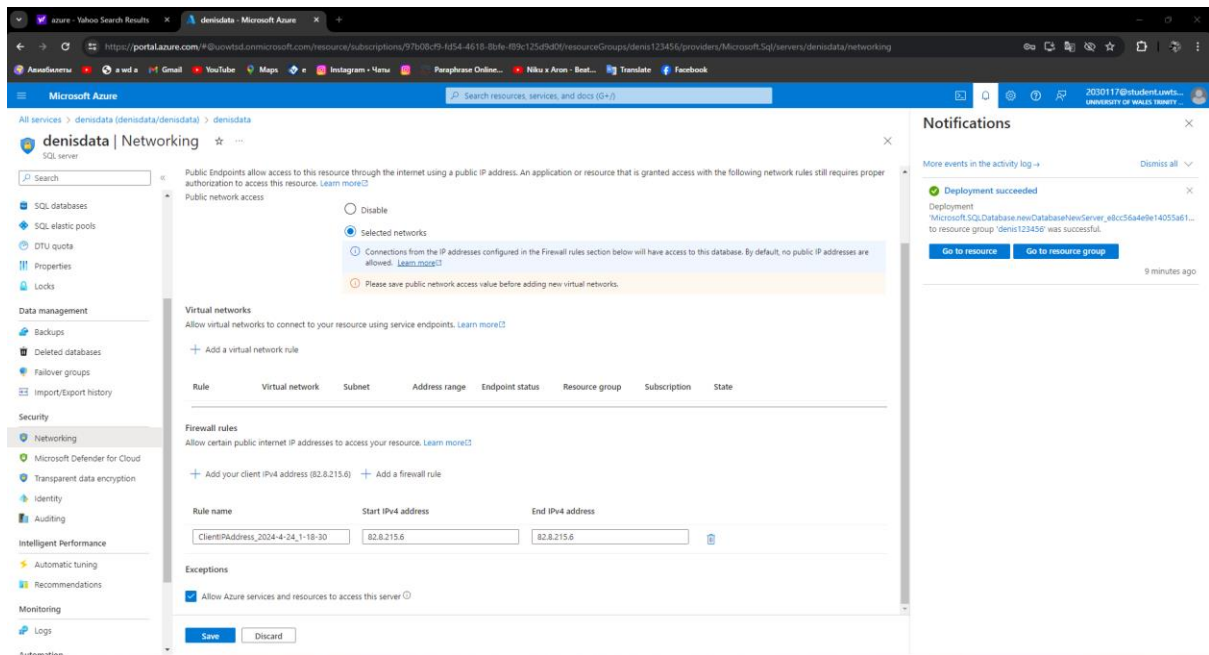
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11



An totally managed relational database service known as Azure SQL Database is constructed on top of the Microsoft SQL Server engine, which is the service's foundation. This service is known as Azure SQL Database. Furthermore, it provides a variety of features, such as high availability, automated backups, and built-in intelligence that is particularly intended to optimise performance. These are just some of the qualities that it provides. In the case of applications and structured data that are required to conform to the ACID (Atomicity, Consistency, Isolation, and Durability) criteria, the Azure SQL Database is an excellent solution that should be taken into consideration.

A benefit is that:

The adherence to the ACID standard guarantees the safety of the information that is being recorded.

Through the use of a service that is entirely controlled, it is feasible to decrease the overhead expenses that are involved with operations.

When utilising this programme, in addition to the well-known SQL Server functionalities, T-SQL is supported as well.

Encryption and the detection of possible dangers are two of the built-in security measures that are incorporated into the system.

Two of the possible choices are point-in-time recovery and automatic backups. Both of these alternatives are accessible.

Potential drawbacks:

There is a significant difference between the scalability of relational databases and that of NoSQL databases.

The cost of a large dataset is significantly higher than the cost of a smaller dataset.

For the purpose of properly completing administrative and optimising activities, having a solid grasp of SQL is not only necessary but also crucial.

Amazon Web Services' Cosmos is the second option.

One of the NoSQL database services offered by Microsoft Azure is called Cosmos DB, and it is dispersed over the whole planet. In order to facilitate the creation of apps that are not only highly responsive but also highly scalable, it was built with the purpose of enabling the development of such applications. Because it supports a broad variety of data models, it is suitable for a wide range of use cases. Some of the data models that it supports are document, key-value, graph, and column-family data models, amongst others. In addition to providing guaranteed low latency and high availability, Azure Cosmos DB also makes it possible to replicate data across many regions on multiple servers. These characteristics constitute an extra advantage.

A benefit is that:

Users are able to access data from any point in the world with significantly less latency as a result of the fact that it is disseminated throughout the geographical regions of the world.

There are a great number of alternative data models that are supported, which makes it possible to have flexibility in the environment of the data schema (data schema).

The feature for automatic sharding is also included, in addition to the horizontal scalability that is available.

a service level agreement (SLA) that warrants both high availability and throughput in addition to its capacity.

Microsoft Azure Active Directory has been integrated with the system with the purpose of restricting access to the system and providing security.

Potential drawbacks:

Additionally, in comparison to the costs of other database systems that are made available through Azure, this price is significantly greater.

Due to the fact that its design is comprised of a large number of different models, the learning curve is more steep than most other designs.

When it comes to use cases that are less sophisticated and involve data that is organised, it is conceivable that this is an expenditure that is not essential.

Specifically, the Table Storage service that Azure provides.

Azure Table Storage is a NoSQL key-value store that is able to provide schemaless storage for semi-structured data. Its capabilities to provide this storage are described below. To be more specific, it is a database management system of some type. Considering that it offers a high degree of scalability and a low level of latency for read and write operations, it is an ideal solution for storing massive amounts of data that have distinct access patterns.

A benefit is that:

In any way that is practically relevant, the storage capacity is not restricted in any way, and the system is incredibly scalable.

The prices of this Azure database option are really rather reasonable when compared to the prices of other Azure database choices.

A clear data model that is supported by key-value pairs, which makes the process of development easier to understand and implement.

capable of storing a substantial quantity of information relevant to user profiles and equipped with access to this information.

Using the cloud storage service, it is now much simpler to back up and archive data thanks to the interface with Azure Blob Storage.

Potential drawbacks:

Relational databases, which are comparable to relational databases, provide limited querying capabilities in the same way as relational databases do.

The failure to deliver functionality that has previously been created specifically for transactions that are extremely sophisticated.

Additionally, the native availability of support for ACID compliance is not available for access.

Inquire about it or provide a suggestion.

When storing user profiles, it is advised that the Azure Cosmos DB model be utilised as the Azure database choice. This is because it is the most suitable alternative. In order to be more specific:

Furthermore, in addition to offering automated splitting, Azure Cosmos DB also provides easy horizontal scalability, which guarantees that scalability will be preserved. This ensures that the database will be able to manage rising amounts of user profile data without experiencing a slowdown in its processing performance.

Azure Cosmos DB is able to accept a wide variety of user profile data formats and access patterns because of its extremely customisable nature. This allows it to accommodate a wide range of information. Graph data models, document data models, and key-value data models are only some of the data models that may be accessed through its support.

Global Distribution: The properties of Azure Cosmos DB's worldwide distribution make it feasible to browse user profiles from any location in the globe with a minimal level of delay. This is made possible by the global distribution of the database. Due to the fact that this functionality is available, customers who are situated in various geographical regions are supplied with a seamless experience.

A high degree of availability is provided by Azure Cosmos DB, which is maintained by

service level agreements and replication across many regions. The availability of this functionality is what is meant by the term. As a consequence of this, it ensures that user profiles are always accessible and protected against any breakdowns or interruptions that may take place.

In order to carry out authentication and access control, Azure Cosmos DB interfaces with Azure Active Directory. This is done in order to ensure the safety of the data. Therefore, companies now have the ability to establish fine-grained security limits for the data that is connected with user profiles.

When it comes to storing user profiles in a modern setting that is centred on cloud computing, Azure Cosmos DB provides the most favourable mix of scalability, flexibility, and international availability. This is because it addresses all three of these factors simultaneously. Microsoft Azure SQL Database and Microsoft Azure Table Storage are two more options that might be explored based on the requirements that are being satisfied; nevertheless, Microsoft Azure Cosmos DB offers the most optimum mix of these three crucial qualities.

Concluding remarks:

Azure gives users access to a large range of database solutions, each of which is suitable for a certain category of operating circumstances. In conclusion, Azure provides a number of different database systems to choose from. Azure Cosmos DB appears to be the most appropriate solution for storing user profiles, according to the available information. This may be attributed to the fact that it is scalable, adaptable, spread throughout the globe, possesses high availability, and possesses several security measures. This is because both of these characteristics are present in the same place. Businesses have the ability to successfully manage and restore user profile data by utilising Azure Cosmos DB. This is accomplished while simultaneously ensuring that their applications are operating at the highest possible speed and that they are dependable. The fact that the data associated with the user profile may be obtained and preserved opens the door to this possibility.

4. Azure Backup options for file shares and databases

Microsoft Azure offers a cloud-based service known as Azure Backup, which makes it simple to generate backups of files, folders, programmes, and databases. This service is supplied by Microsoft Azure. With regard to this particular service, Microsoft Azure is the provider. The use of this solution provides businesses with the capability to safeguard their data while it is being stored on the cloud. When developing plans for the protection of data, it is imperative that these plans always include the execution of backup schedules and retention laws as an essential component. These rules and schedules ensure that backups are conducted on a regular basis and that they are retained for the proper amount of time in order to achieve the objectives of both business and compliance. This is done in order to satisfy the objectives of both. The next part will cover backup schedules and storage policies for both file shares and databases that utilise the Azure Backup options. These policies and schedules will be discussed in this section. This conversation is going to take place in the parts that are the ones that come after this one.

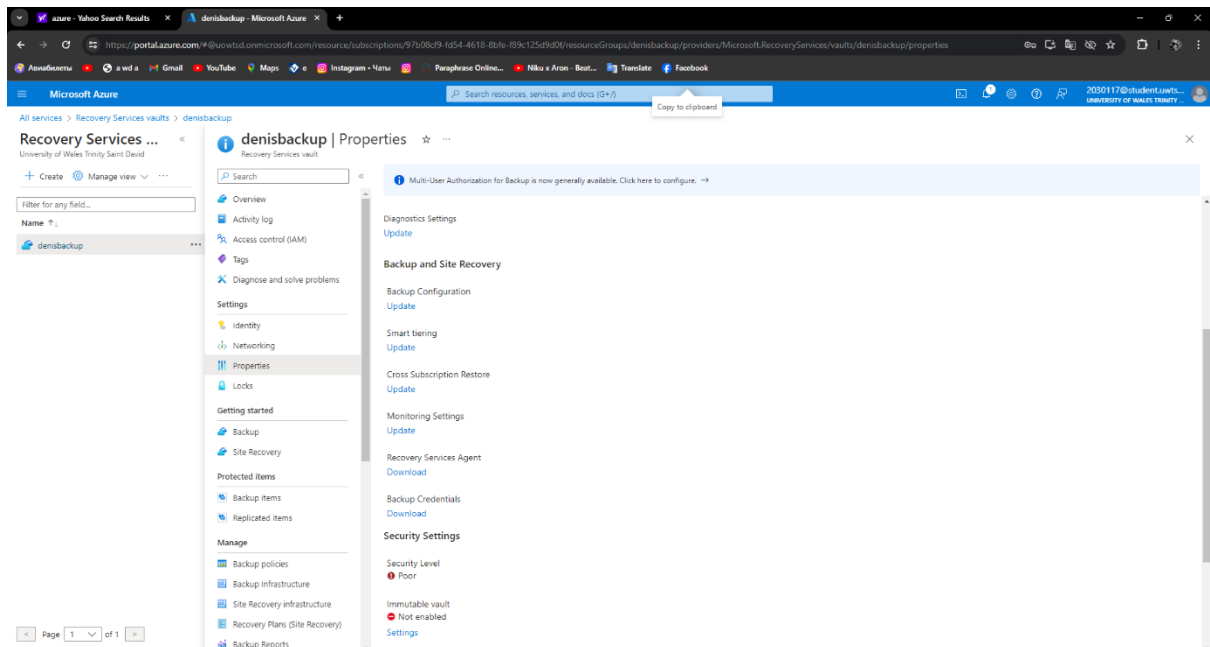
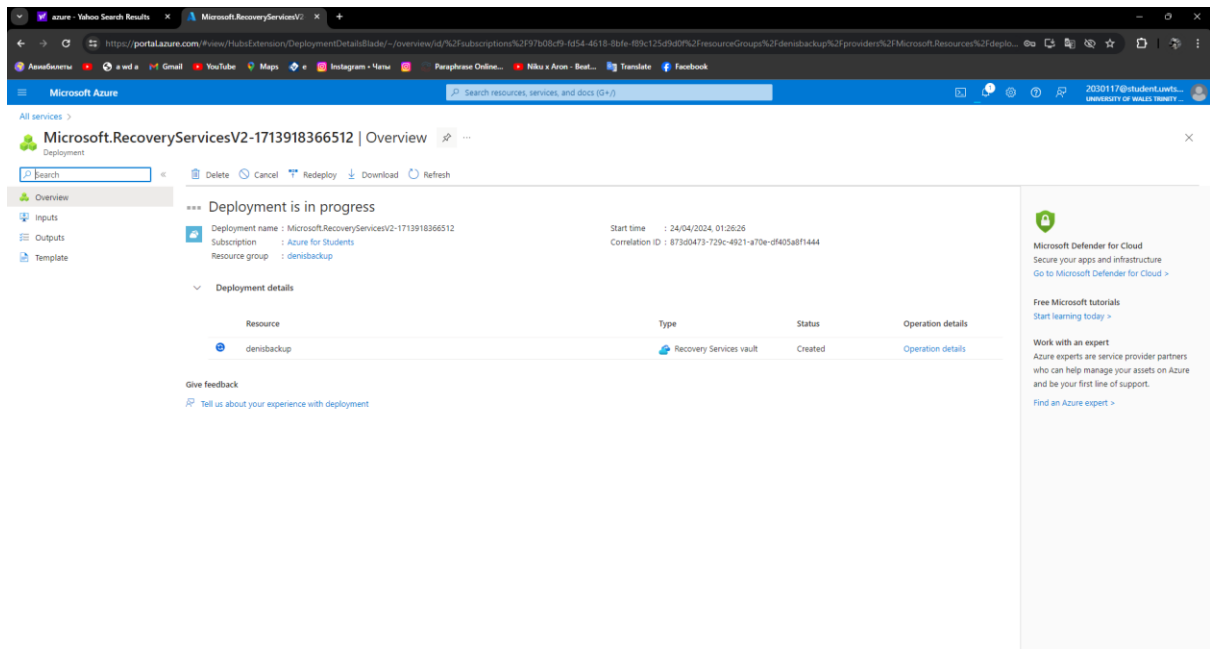
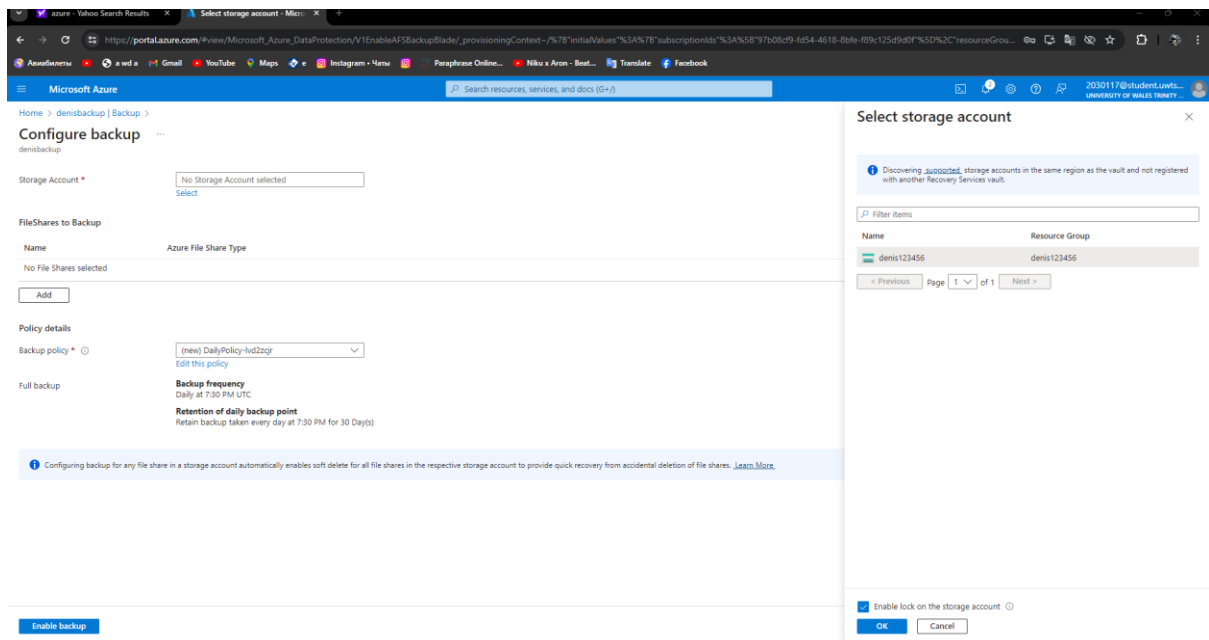
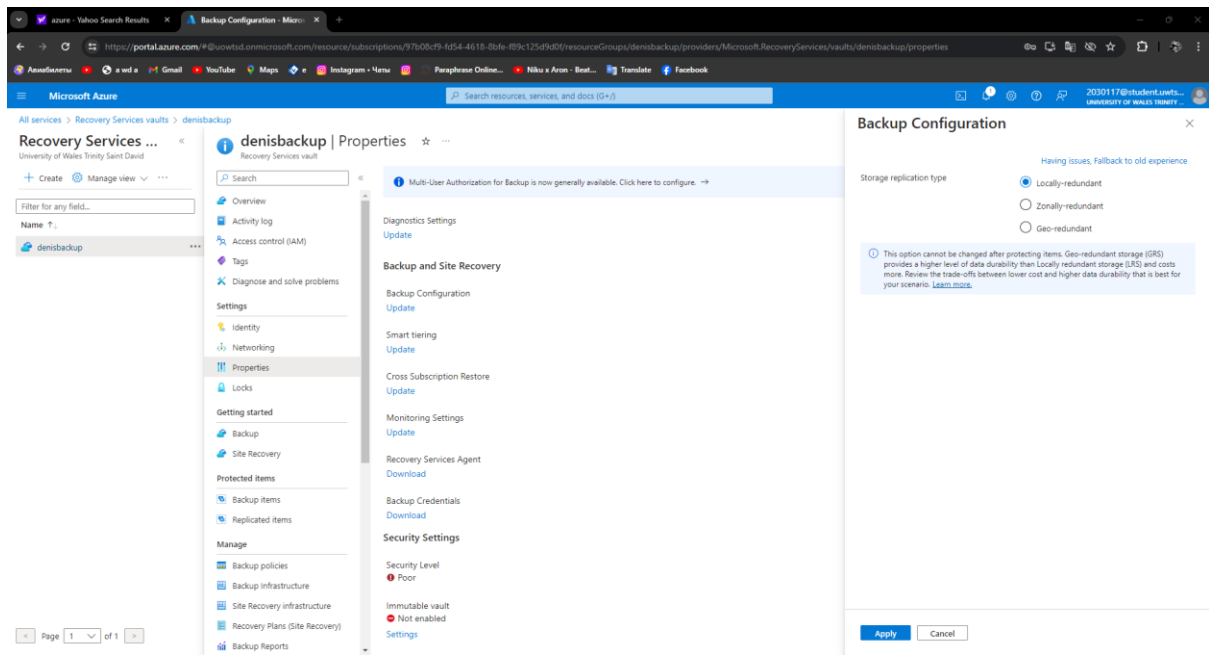


Figure.19



1. schedules and schedules for when files are transferred and when they are backed up

When it comes to backing up file sharing, the Azure Backup service provides two major alternatives. Through the usage of the service, consumers are provided with several possibilities. Among these options are Azure Backup for Azure Files and Azure Backup for file servers that are housed on-premises. Both of these backup capabilities are available.

The Backup Service Provided by Azure for Files That Are Stored in Azure Service:

In addition to providing access to files through the use of SMB and NFS, Microsoft Azure Files is a cloud-based solution that offers fully managed file sharing. Additional features include the ability to exchange files. Businesses are able to generate backups of file shares that are stored in Azure with the aid of Azure Backup for Azure Files. This function is available to businesses. Businesses will be able to safeguard their data as a result of this.

Available options for the backup schedule are as follows:

On a daily basis, the backups should be set to execute at a time that has been determined upon in advance. This time should be regularly planned. By doing this, you will guarantee that the data that is kept in file shares is backed up on a regular basis, which will guard against the loss of data. This will protect against the risks associated with losing data.

Consistently create backups: The practice of doing backups on a weekly basis is recommended because it allows for the creation of extra backup copies and the establishment of several recovery points for data that is stored in a file that is shared by multiple users. There is the possibility of configuring individualised backup plans in accordance with the particular requirements of the company. For instance, it is possible to back up important file sharing on a more consistent basis. This may be accomplished by looking at the several configuration options that are available for the backup schedule.

The following is a selection of policies concerning retention:

In order to determine the length of time that backup data should be kept, it is necessary to define the storage range for backups. The term "retention range" is used to refer to this particular concept. With Microsoft Azure Backup, retention periods may range anywhere from a few days to many years, depending on the requirements of the company and the regulations that are in place. This is something that can be customised to meet the needs of the organisation.

Configuring retention rules allows for the maintenance of backup copies for a defined amount of time on a daily, weekly, and monthly basis. This may be performed. It is possible to carry out this activity on a daily, weekly, or monthly basis. As a consequence of taking this step, a complete backup history will be preserved for the purpose of file sharing.

It is important to note that Azure Backup is not applicable to file servers that are situated on the premises.

For on-premises file servers, Azure Backup offers either the Azure Backup Server or the System Centre Data Protection Manager for the purpose of backing up files and folders to Azure. Both of these options are available to users using Azure Backup. In the context of backup solutions, both of these choices are regarded feasible.

Available options for the backup schedule are as follows:

Establishing incremental backups in such a way that they only retrieve the files that have been updated or added since the last backup is an example of a partial backup approach. As a consequence of this, the amount of time that is required for backups as well as the amount of storage space that is required will be decreased.

Backing up the entire system in its entirety: Full backups should be performed on a regular basis in order to ensure that the whole file system is backed up and that comprehensive recovery points are available for file sharing. The reason for this is because complete backups include all of the data that is stored in the system.

When it comes to the frequency of backups, it is essential to tailor them to the needs of the company. This is because the business has certain requirements. The settings for daily, weekly, or individualised programmes might be included in this category.

The following is a selection of policies concerning retention:

It is necessary to establish a duration range for backups, which is a description of the length of time that backup data should be kept in Azure Backup vaults. This range represents the amount of time that backups ought to be kept for by the business.

Within the framework of the Grandfather-Father-Son Retention Policy, it is suggested that backup copies be stored on a daily, weekly, monthly, and yearly basis for varying amounts of time. This recommendation is made possible via the execution of the policy. There is no need to worry about the preservation of a thorough backup history because this method will be utilised.

Second, databases with relation to the backup plans that they have in place

When it comes to backing up databases that are provided by Azure services, there are a variety of different solutions available to choose from. One of these alternatives is the Azure SQL Database, another is the Azure Database for PostgreSQL, and still another is the Azure Database for MySQL. There are a great many additional options available. By utilising Azure Backup, these options are made available to users.

The SQL Database that Azure provides, which includes:

Organisations are able to easily generate backups of databases by utilising PowerShell commands or by utilising the Azure interface. This is made possible by the built-in backup and restoration capabilities that are provided by Azure SQL Database. The fact that Azure SQL Database is the provider of these services is what makes this a feasible option.

Available options for the backup schedule are as follows:

automatic Backup: Enable automatic backups to generate backups of Azure SQL databases on a regular basis in accordance with a schedule that you have previously established. This will ensure that backups are produced correctly. It is because of this that backups will be made in the proper manner. Backups of the entire database, backups of the differential data, and backups of the transaction log will all be performed automatically by Azure SQL

Database. It is planned to use the database recovery concept as the foundation for these backups.

Manual backup: This feature gives you the ability to create backup copies whenever you need them by allowing you to make ad hoc backups anytime you want to. Backups of this kind may be carried out using either the Azure UI or PowerShell commands.

The following is a selection of policies concerning retention:

When it comes to guaranteeing compliance with regulatory requirements and data retention standards, it is necessary to develop long-term retention plans in order to preserve backup copies for lengthy periods of time. This is done in order to ensure that the data is kept for the appropriate amount of time. This conduct is carried out in order to guarantee that the organisation is in compliance with the regulations in question.

restoring data from a point in time: Utilise the capabilities of point-in-time restoration in order to recover databases to certain points in time that happened throughout the retention period. This will allow you to retrieve important information. Having precise recovery choices and alternatives will be feasible as a result of this, which will be beneficial for the purpose of data preservation.

A database that is compatible with both PostgreSQL and MySQL that is hosted on Azure includes the following:

The ability to generate backups of PostgreSQL and MySQL databases that are hosted on Azure is available to enterprises through the use of Azure Backup for Azure Database for PostgreSQL and Azure Database for MySQL. It is because of the availability of various backup programmes that this is in fact doable.

Available options for the backup schedule are as follows:

You are possible to set up periodic backups to execute in accordance with a schedule that you have previously determined by making use of the scheduled backup tool. These backups will be executed at regular intervals. This ensures that PostgreSQL and MySQL databases are backed up on a regular basis, which helps to ensure that they remain secure without any interruptions.

It is possible to build backup copies for individual database instances with greater flexibility thanks to the availability of backups that are produced on demand. This is made possible by the fact that backups are conducted regularly. It is possible to carry out backups whenever they are required to be done, provided that they are conducted on demand.

The following is a selection of policies concerning retention:

In order to determine the length of time that backup data should be stored in Azure Backup vaults, it is necessary to define the retention period for backup copies. The duration of this thing is known as the retention period.

Encryption of Storage Devices: For the purpose of safeguarding backup data while it is being kept securely, it is recommended that encryption be set for backups. This will guarantee that the backups of the database are both secure and secret from a security and confidentiality standpoint.

In conclusion, some remarks

Data backup schedules and data retention rules are two essential components that must be included in any data security strategy. Data backup schedules are also an essential component. The existence of these components ensures that organisations will be able to retrieve data in the event that it is lost, damaged, or destroyed as a result of natural catastrophes. This is achieved by the availability of these components. When companies use Azure Backup, they are able to establish backup schedules that are adaptable and specify retention policies that are customisable to meet the specific needs of their organisations with regard to file sharing and database management. That these organisations are able to better secure their data is made possible by this. In the event that unforeseen calamities occur, businesses have the potential to successfully preserve their data assets, reduce risks, and ensure the continuation of their corporate operations by using the multiple backup alternatives that are made accessible by Azure. This is possible because Azure provides businesses with a wide range of backup options.

To put it another way, the comprehensive backup and recovery options that Azure Backup offers may be beneficial to both file shares and databases. On top of that, it offers a broad variety of scheduling and retention options, all of which may be adapted to fit the particular requirements of commercial organisations. Azure Backup makes it easy for businesses to establish robust data protection policies and keep their most important data assets in the cloud. This is true regardless of whether the data being protected is Azure Files, on-premises file servers, Azure SQL databases, or any other Azure service. It makes no difference what kind of Azure service is being secured; this is always the case.

5.Evaluation of how azure site recovery would assist GLI

When it comes to the digital world of today, data security is of the biggest significance for every firm, but it is especially important for GLI because it works with significant quantities of storage and essential databases. All types of disasters, whether they are natural or man-made, have the potential to wreak havoc on organisations, resulting in the loss of data, downtime, and financial repercussions. Azure Site Recovery stands out as a powerful disaster recovery solution due to the extensive range of features it possesses, which are geared to protect databases and storage. This essay will focus on how ASR might potentially assist GLI in strengthening its disaster recovery strategy.

Microsoft's Azure Site Recovery is a service that aims to ease the automation and orchestration of the replication and failure of virtual machines, regardless of where the virtual machines are located—whether they are in the cloud or on-premises. Through the facilitation of the quick restoration of workloads in the event of a catastrophe, it ensures that business activities will continue uninterrupted. Virtual machines are not the only things that ASR is capable of managing; storage and databases are also included in its portfolio of capabilities.

The Global Logistics Institute (GLI), like many other businesses, is dependent on storage to retain essential data that is required for day-to-day operations. Azure Site Recovery can help secure storage. When it comes to safeguarding this irreplaceable asset, the replication and failover methods of ASR are absolutely essential.

Data redundancy is ensured by the replication features of ASR, which enable the transfer of data from on-premises storage to Azure. This allows for the transfer of data. GLI may make adjustments to the replication settings in order to synchronise data between on-premises infrastructure and Azure at predetermined intervals in order to accomplish certain Recovery Point Objectives. Due to the versatility of GLI, it is able to strike a balance between the operational overhead and the data currency that may be considered satisfactory.

Using ASR, you will be able to simply transition from your local storage to Azure in the event of a disaster. This feature is known as failover. It is possible for GLI to trigger failover either manually or automatically, depending on the parameters that have been set, such as performance restrictions or recognised outages respectively. Because of the speed with which backups are created, GLI is able to resume operations as quickly as possible with minimal disruption.

GLI is able to develop recovery plans that are tailored particularly for its storage system because to the sophisticated orchestration tools offered by ASR. With the assistance of these plans, which provide a comprehensive outline of the actions that must be carried out during the failover, the recovery process may be made more efficient and well-organized. GLI has the flexibility to change recovery procedures in order to accommodate complicated storage configurations, hence ensuring reliability and consistency in every circumstance.

A large number of business applications are dependent on databases, which are used to hold mission-critical information that is essential for the operation of the firm. Azure Site Recovery is used to ensure the security of databases. Through the incorporation of database disaster recovery capabilities into ASR, businesses such as GLI are able to enhance the protection of their database assets.

Measures to Reduce the Risk of Data Corruption and Inconsistency: ASR ensures that applications remain consistent both when databases are duplicated and when failures occur. This is accomplished through the use of application consistency. Integration with Azure Backup, which provides recovery and backup solutions that are application-aware and intended for common database systems such as Oracle and SQL Server, makes this a possibility. Azure Backup offers data recovery and backup options. With the help of these characteristics, GLI is able to guarantee that the data will be protected during the entirety of the disaster recovery procedure.

Through the use of GLI's point-in-time recovery function, which is made possible by ASR, which helps to reduce the amount of data that is lost, databases may be restored to a specific instant in time. This granular recovery capability is essential for GLI to be able to safely and accurately roll back to a known good state in the event that data corruption or human error occurs.

ASR, which supports variable database settings, makes it possible for GLI to protect databases that are operating on different platforms and technologies. This is made possible by the fact that GLI is compatible with several systems. You are able to handle different database environments with the unified disaster recovery solution offered by ASR. These environments include SQL Server on Windows and Oracle on Linux. GLI's disaster recovery administration is simplified as a result of its versatility, which facilitates the optimisation of operational procedures and eliminates the requirement for separate solutions.

The use of Azure Site Recovery may provide sufficient protection for essential components of GLI's information technology infrastructure, including storage and databases. In the case of a disaster, GLI will be able to reinforce its disaster recovery strategy with the assistance of ASR's replication, failover, and orchestration capabilities. This will ensure that data is resilient and that business operations continue uninterrupted. With all of the features and capabilities that you require, ASR has you covered when it comes to the protection of essential data, the prevention of storage asset hardware failures, and the prevention of database data corruption. As GLI continues its path towards operational excellence and resilience within the ever-changing digital ecosystem, Azure Site Recovery is a reliable partner that will accompany them on their trip.

Link

<https://youtu.be/nNIHp7vQPGU>