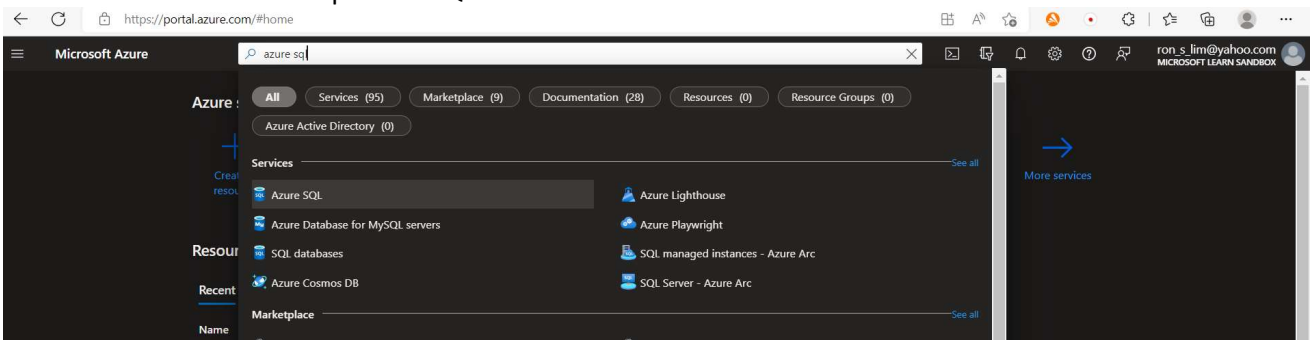
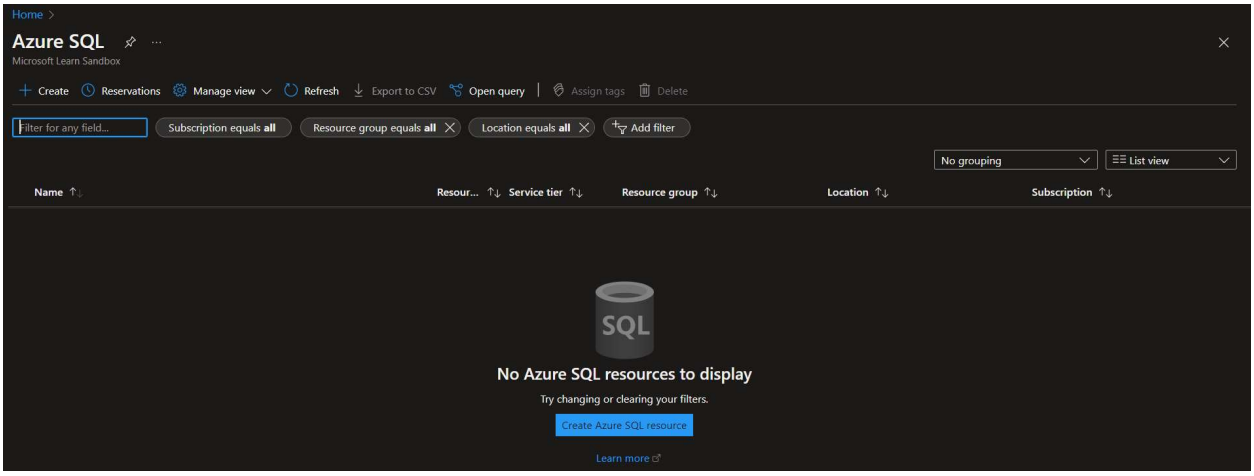
Creating SQL Database and Server

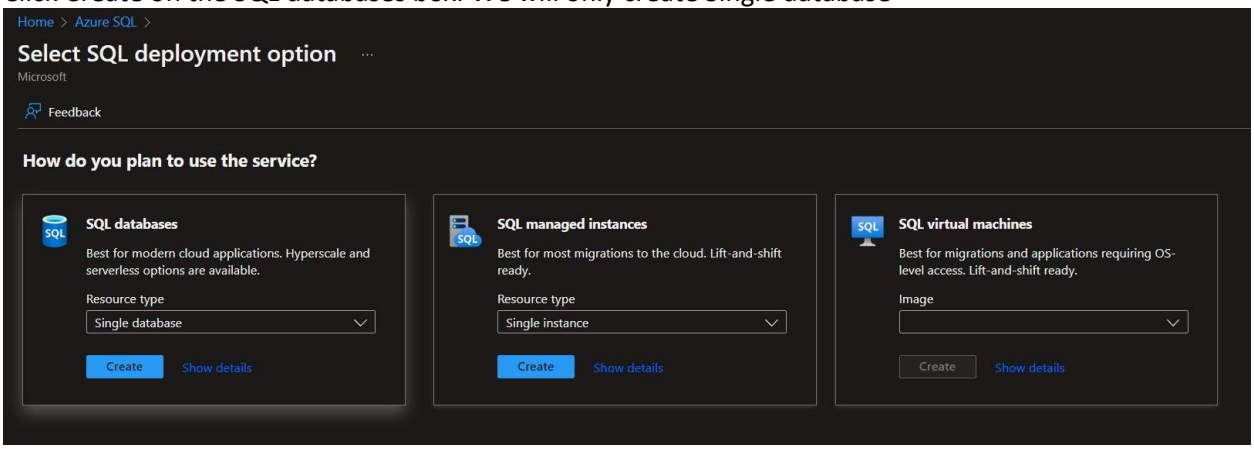
1. Go to Azure Portal and setup Azure SQL



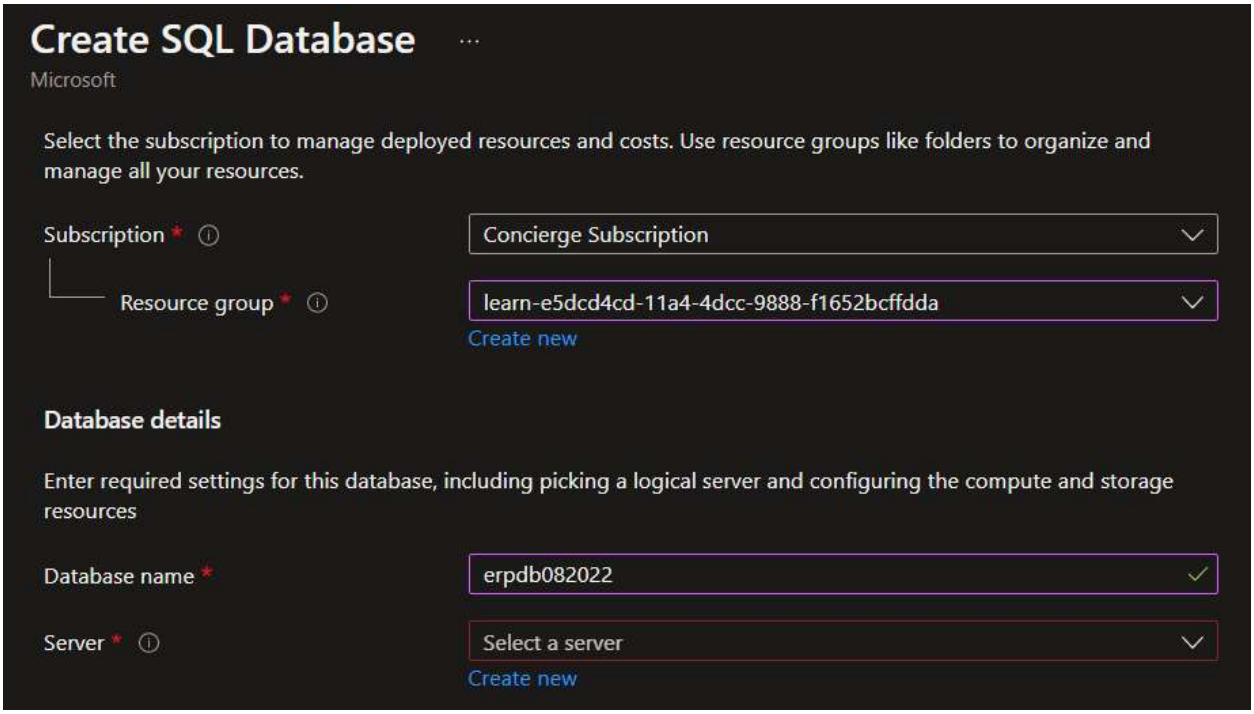
2. Click Create Azure SQL Resource button



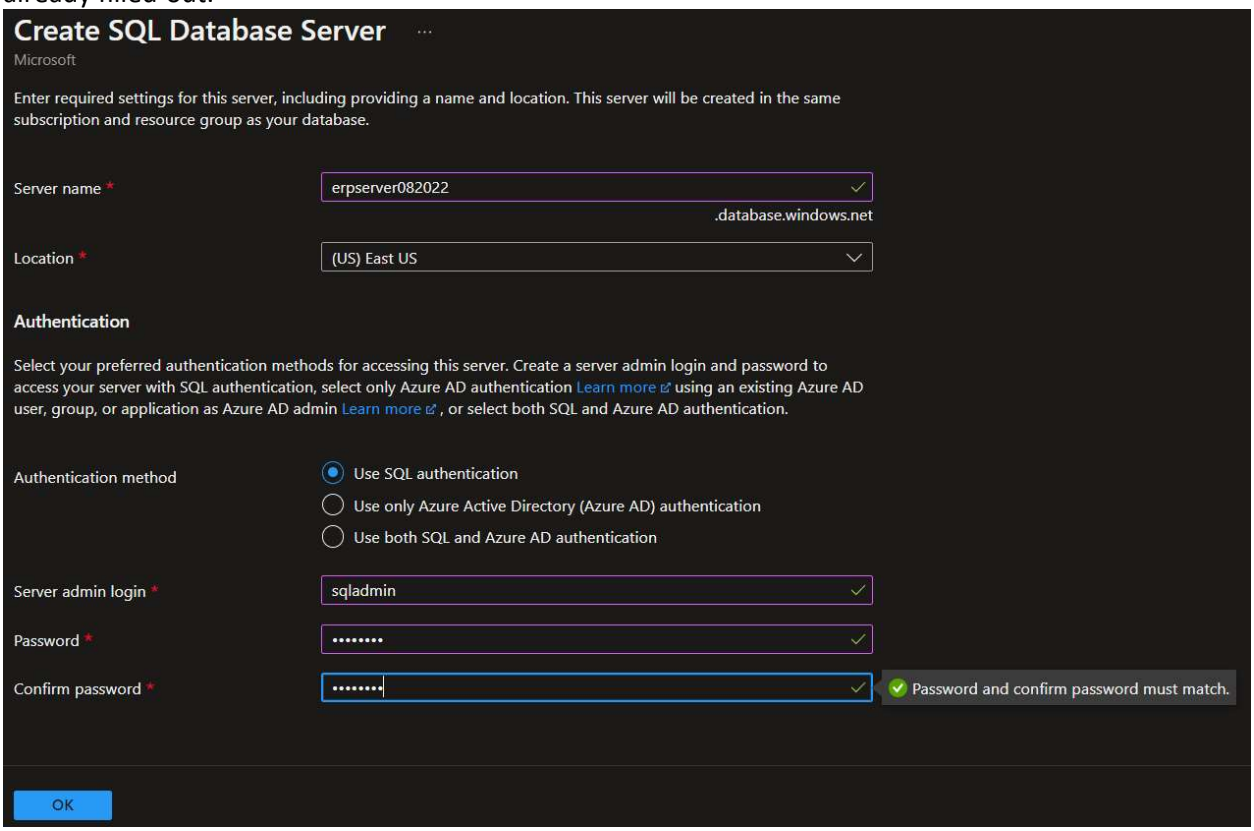
3. Click Create on the SQL databases box. We will only create Single database



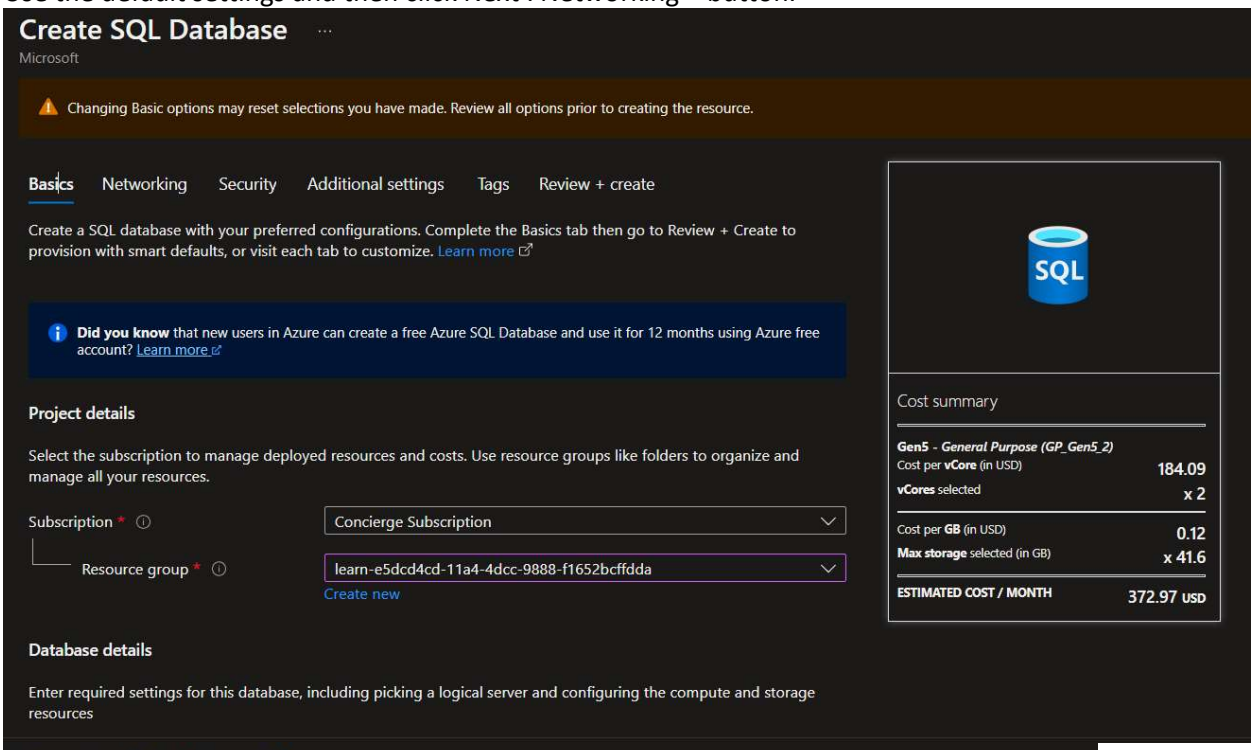
4. Then you will go to Create SQL Database page. Fill-out the Resource Group and Database name and then click Create new below the Select a server field

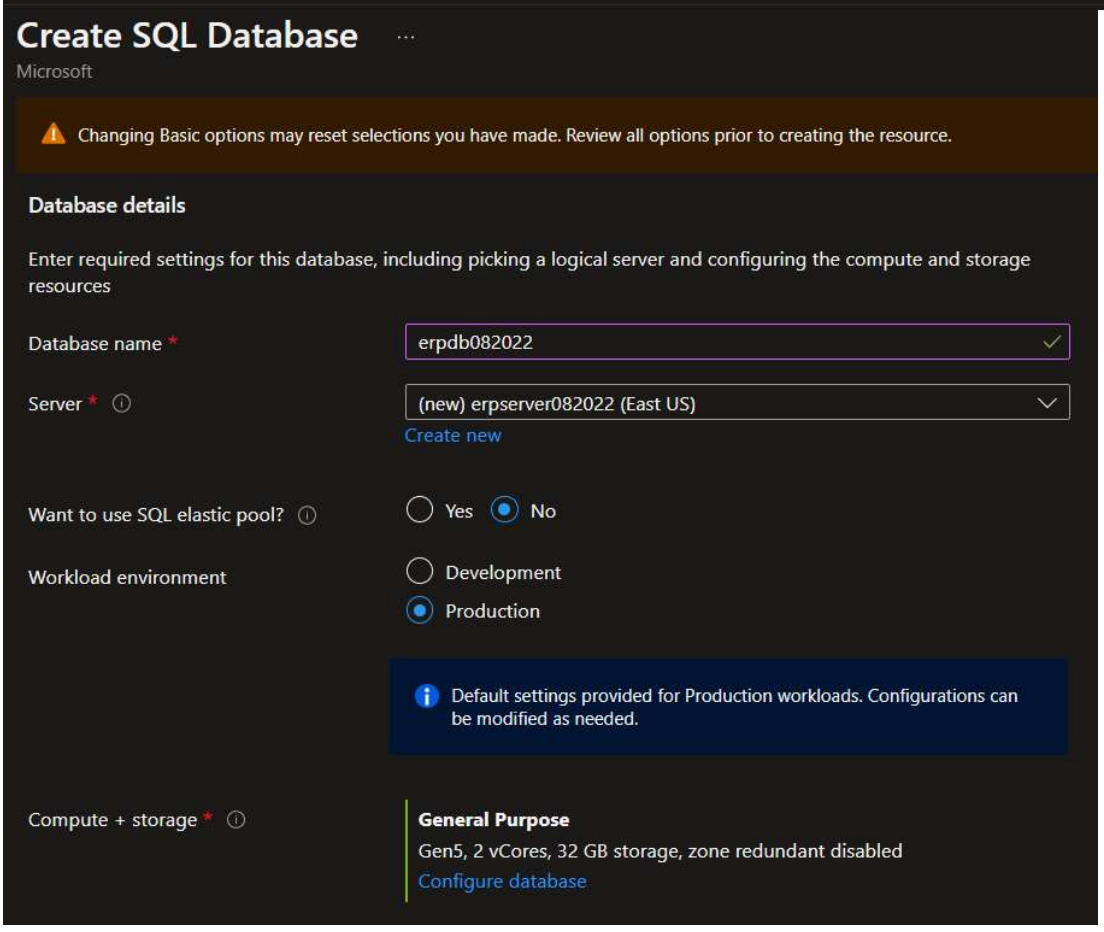


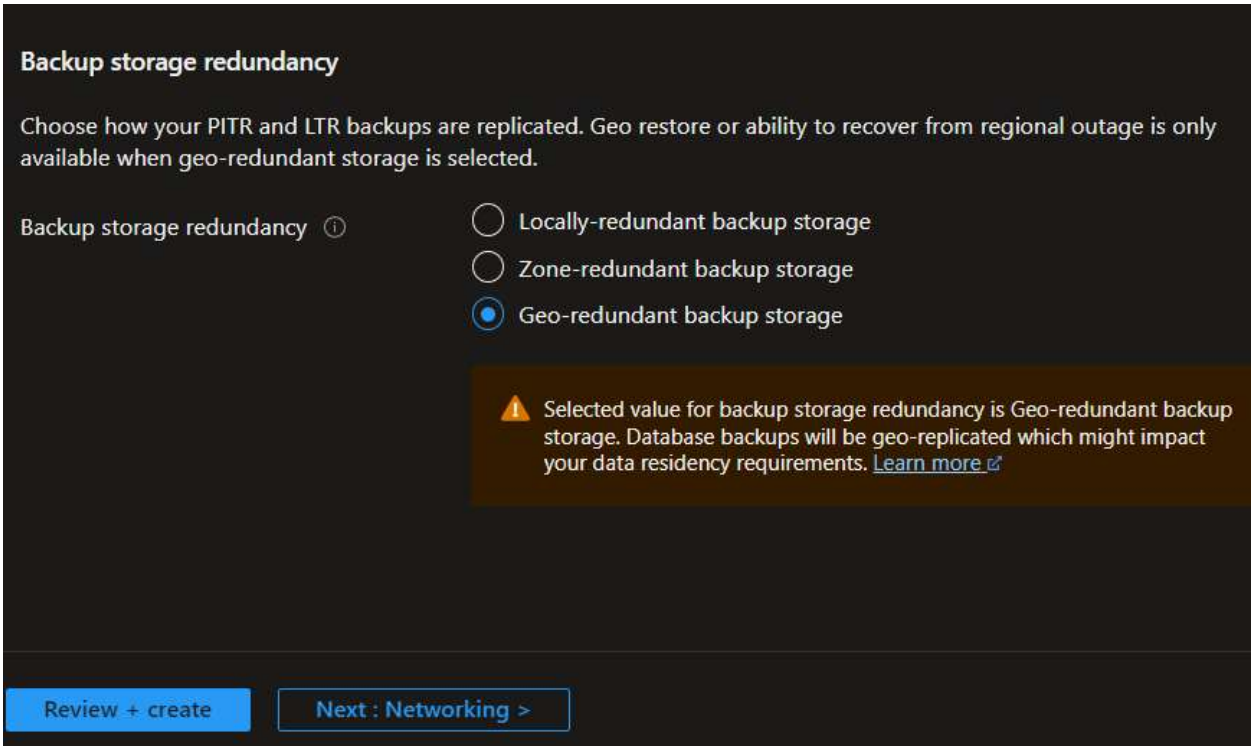
5. On the Create SQL Database Server page, fill-out the necessary fields and choose SQL authentication for now to simplify the step. Please also take note of the credentials you set here and then click OK button when done. You will go back to Create SQL Database page Server field already filled-out.



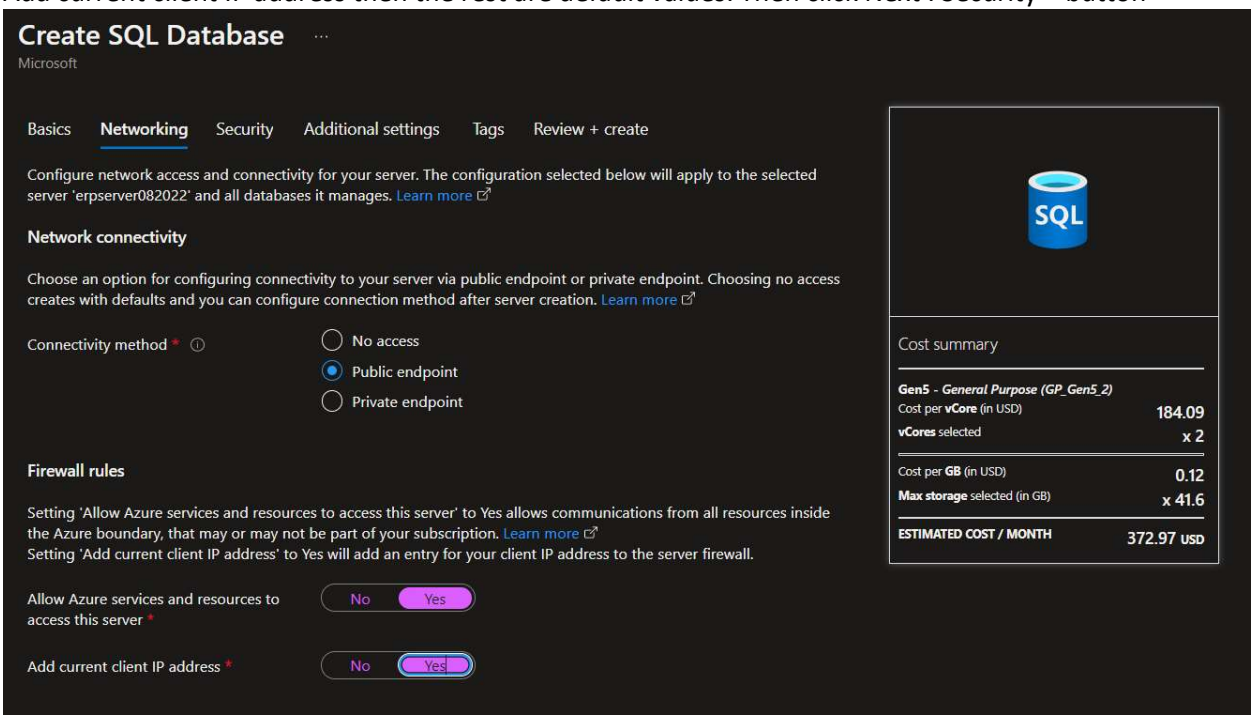
6. Use the default settings and then click Next : Networking > button.

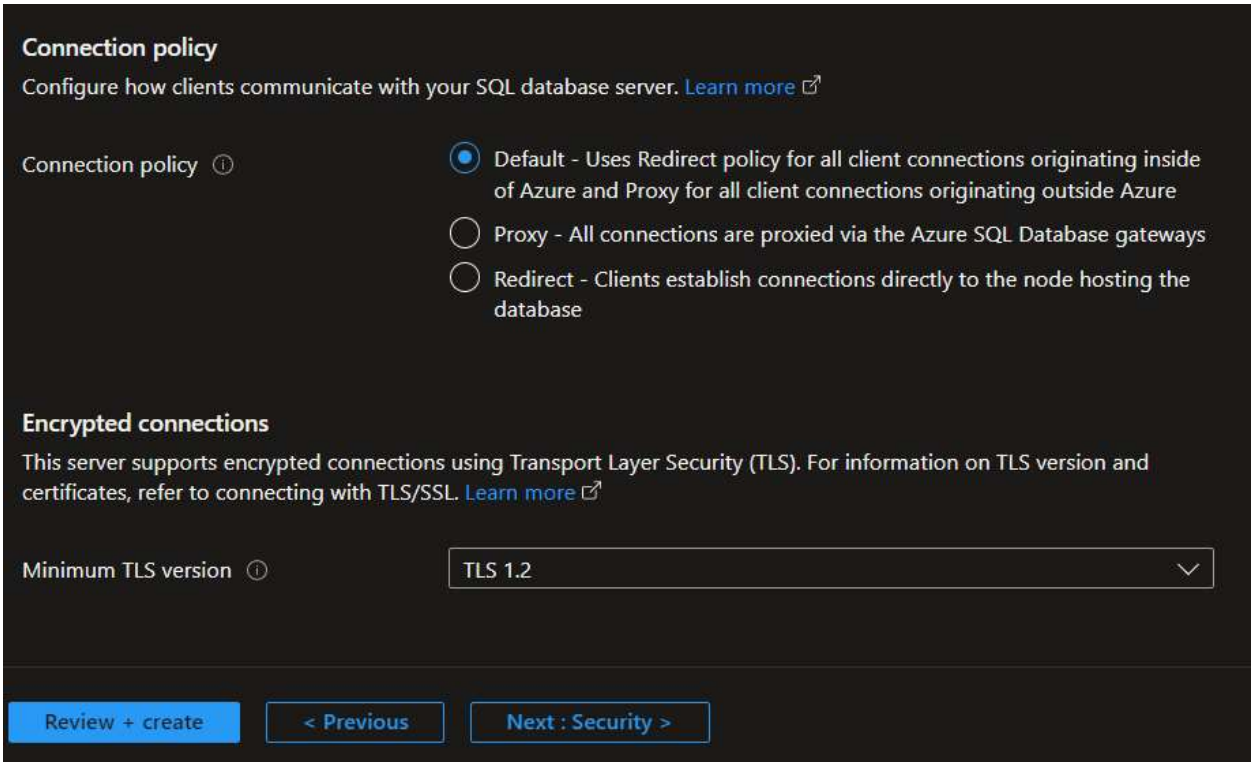




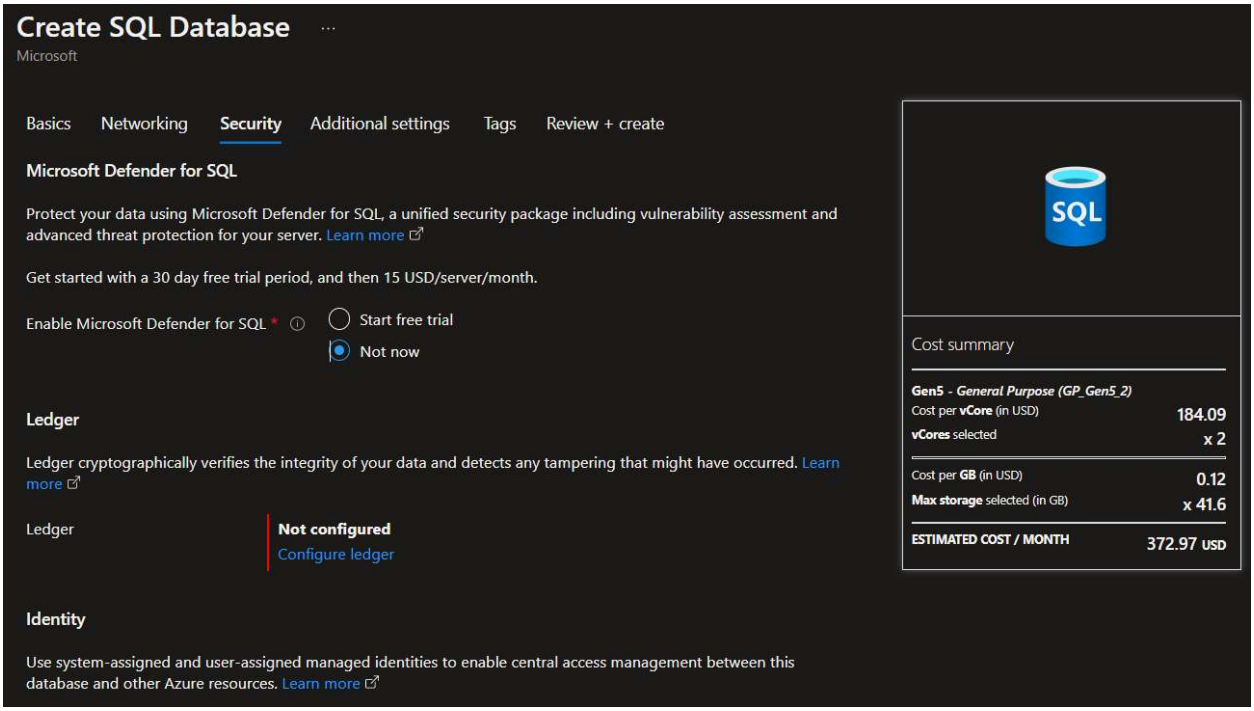


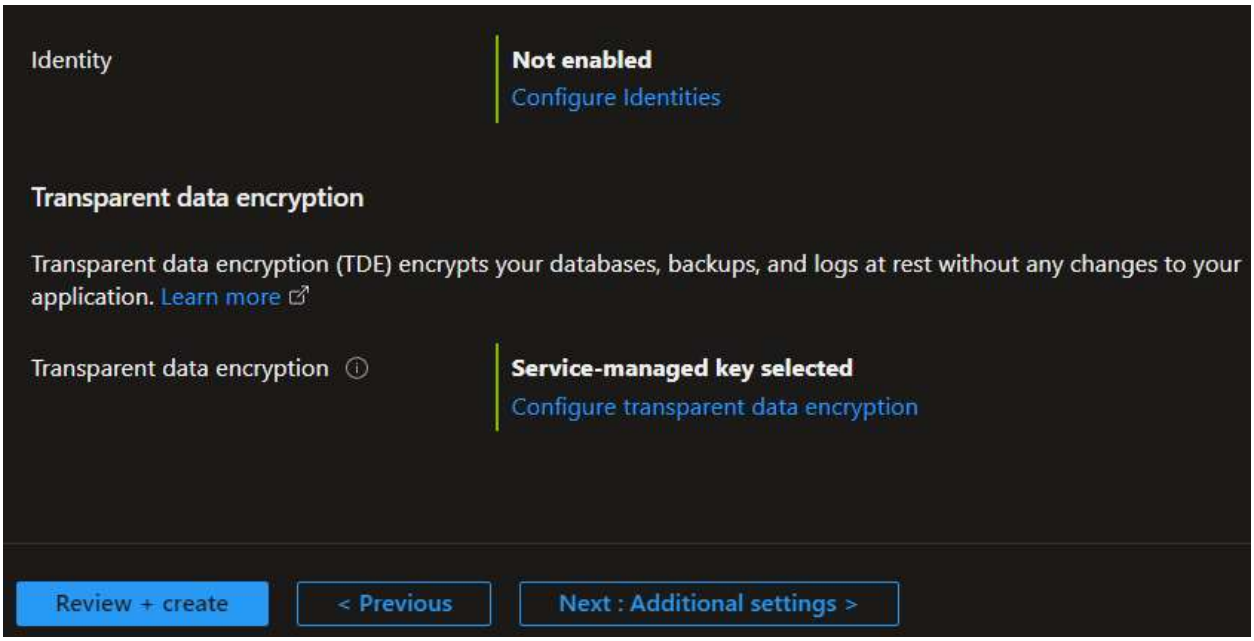
7. In the Networking tab, you can set the Connectivity method to Public endpoint for easier access and step. Then choose Yes to both Allow Azure services and resources to access this server and Add current client IP address then the rest are default values. Then click Next : Security > button



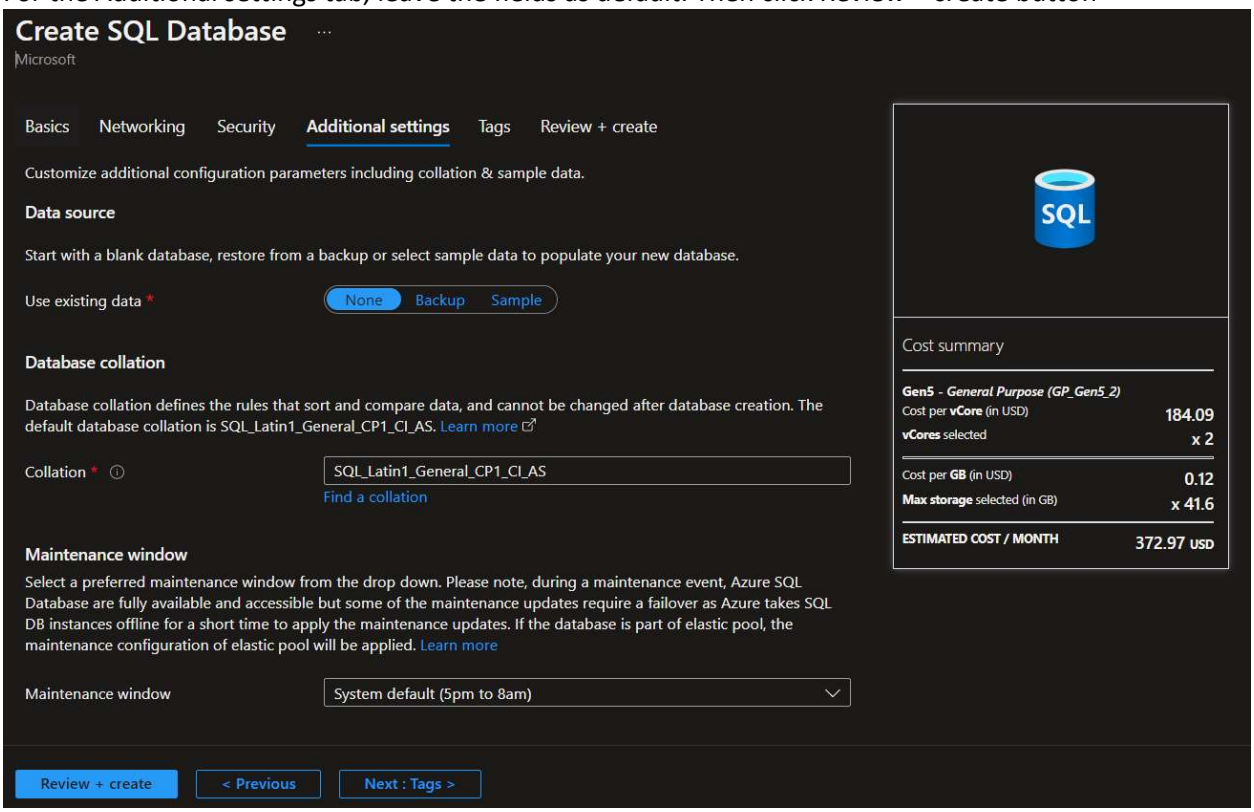


8. In the Security tab, we choose Not Now on Enable Microsoft Defender for SQL as we don't need it. Then the leave the rest of the fields as default and then click Next : Additional settings > button.

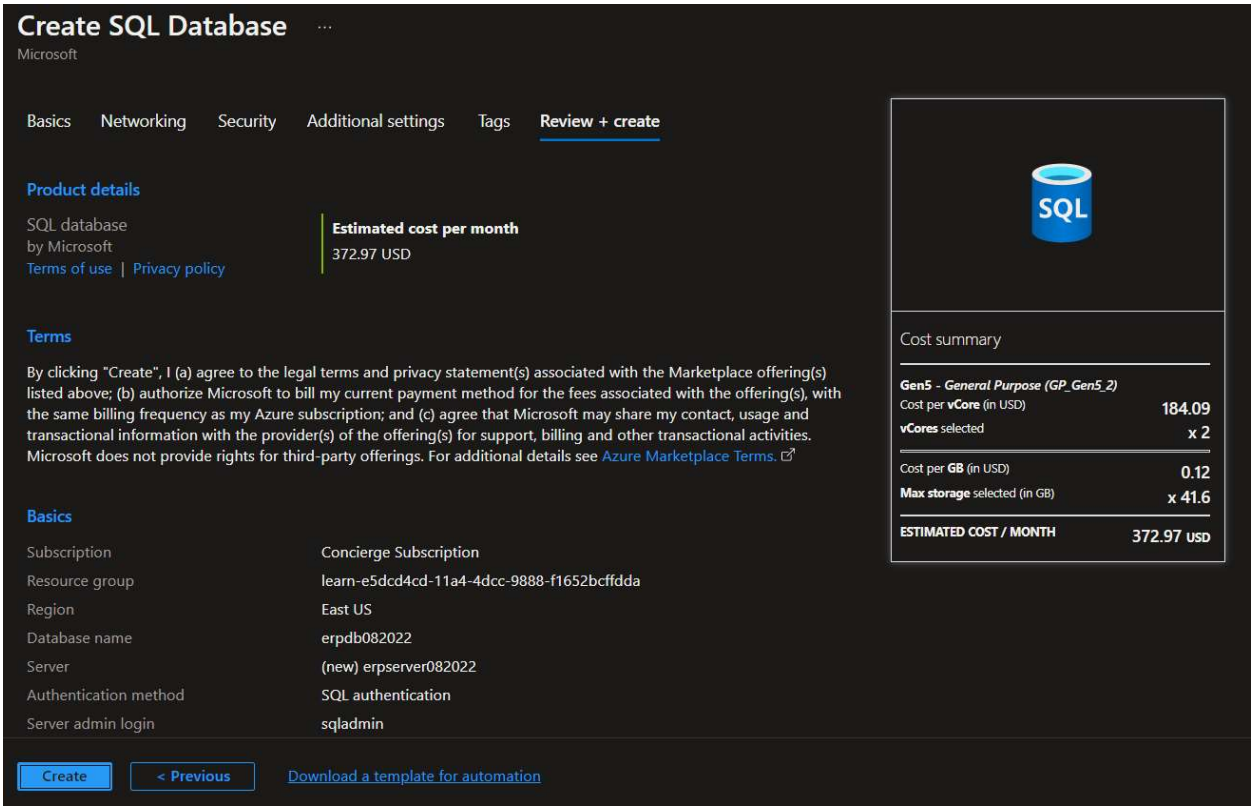




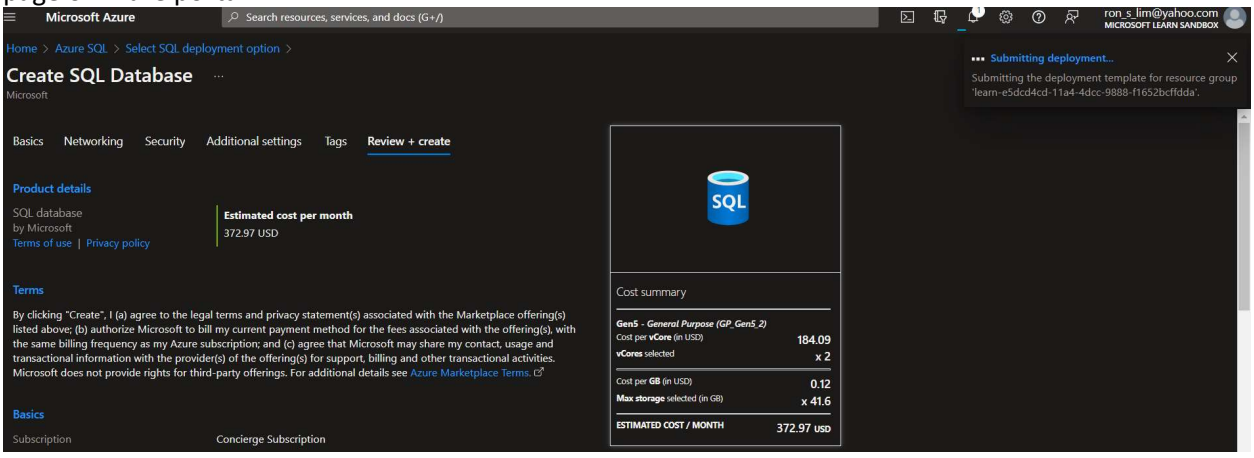
9. For the Additional settings tab, leave the fields as default. Then click Review + create button

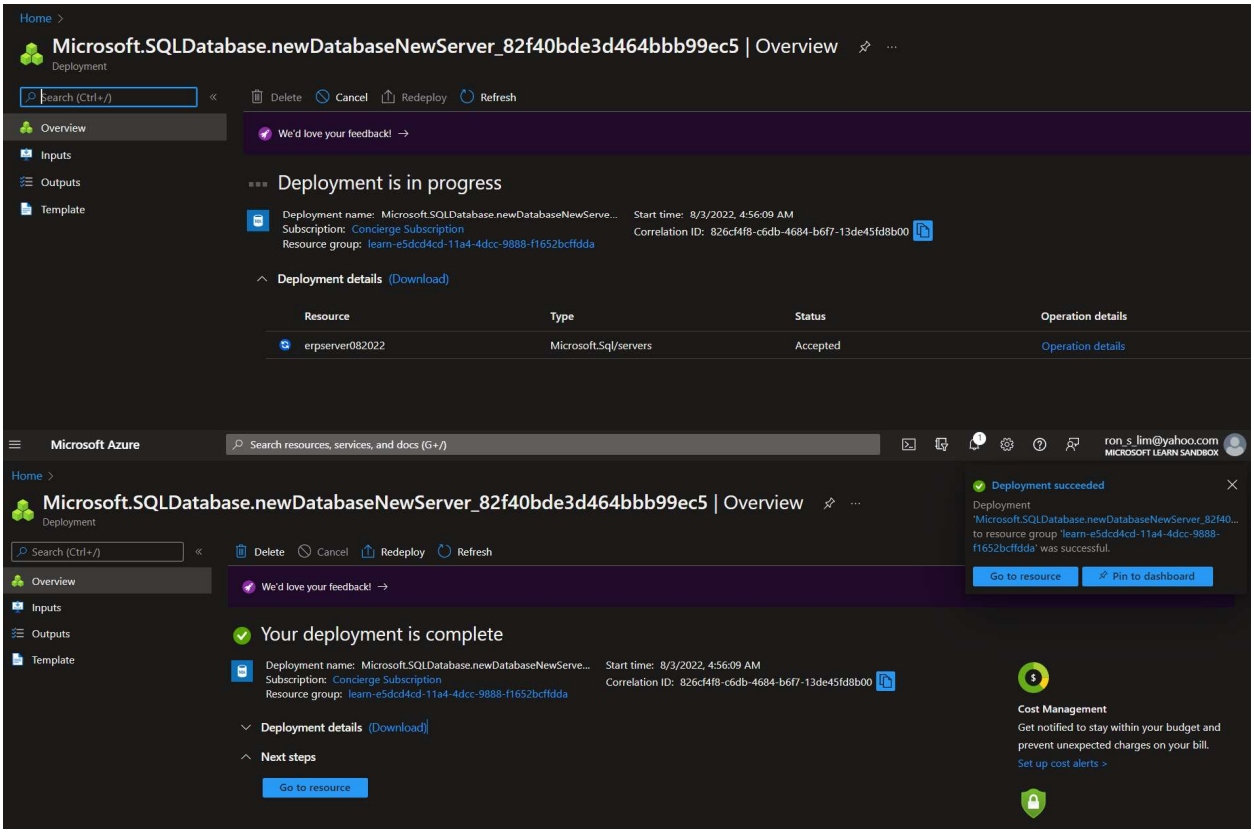


10. Check the values and then click Create when the values are already good to go.



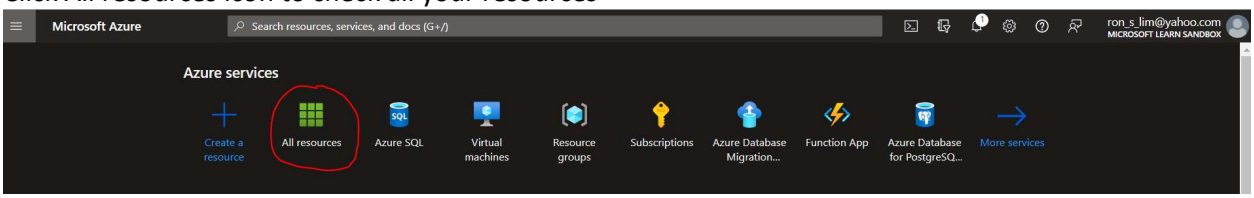
11. Wait for the deployment to complete. After the deployment , click Home to go back to Home page of Azure portal



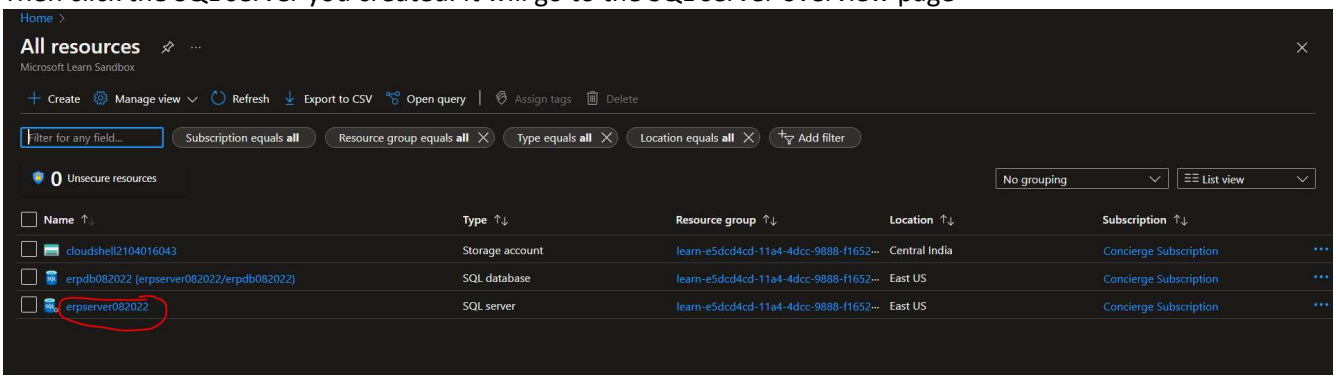


Configure the database retention policy

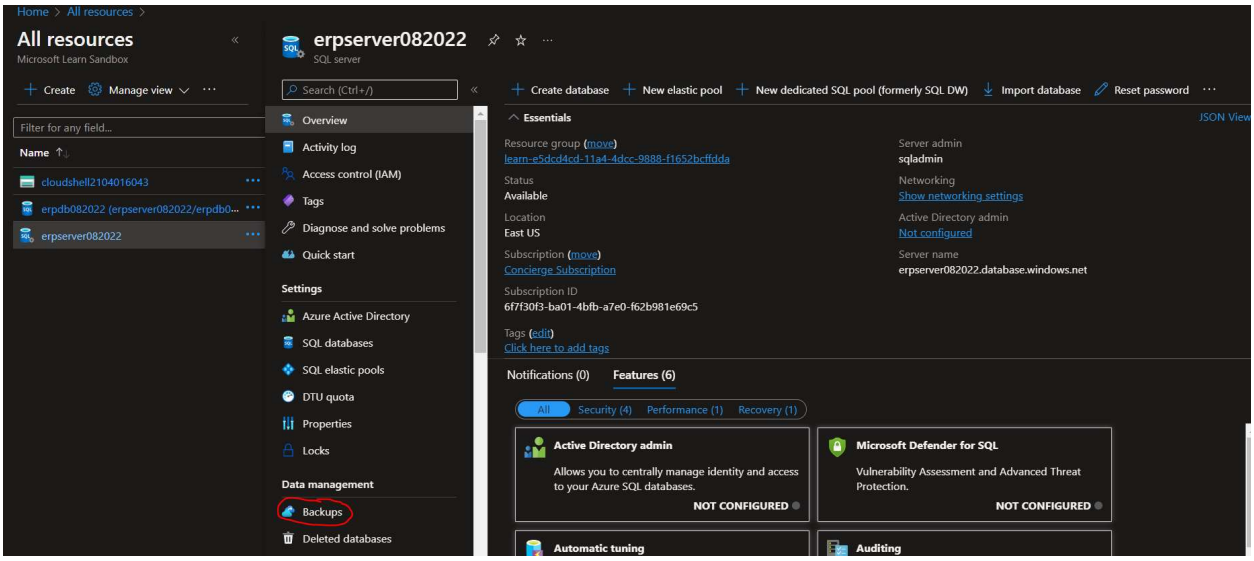
12. Click All resources icon to check all your resources



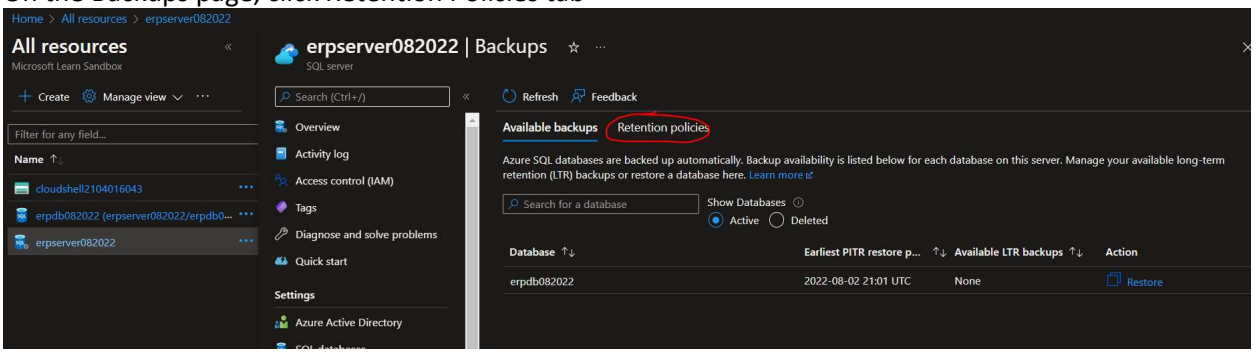
13. Then click the SQL server you created. It will go to the SQL server overview page



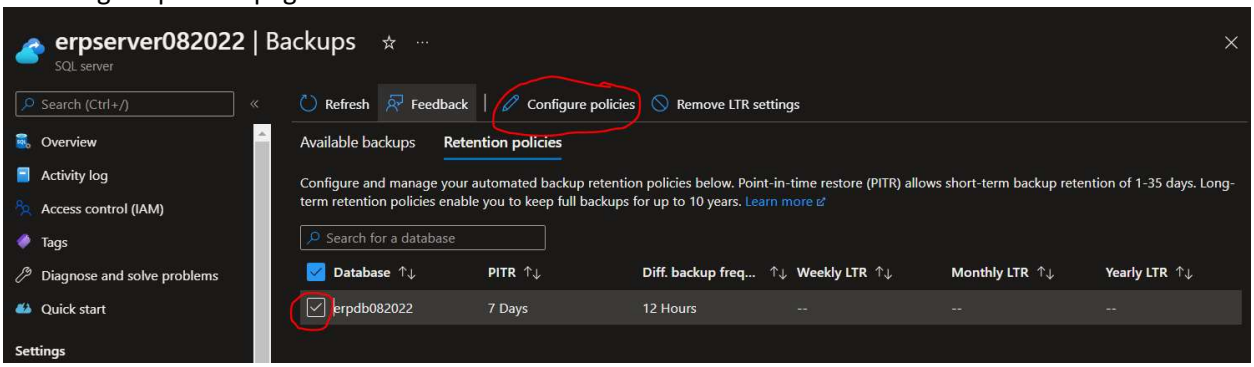
14. In the left menu pane of the SQL server overview page, click Backups under Data Management section to go to Backups page



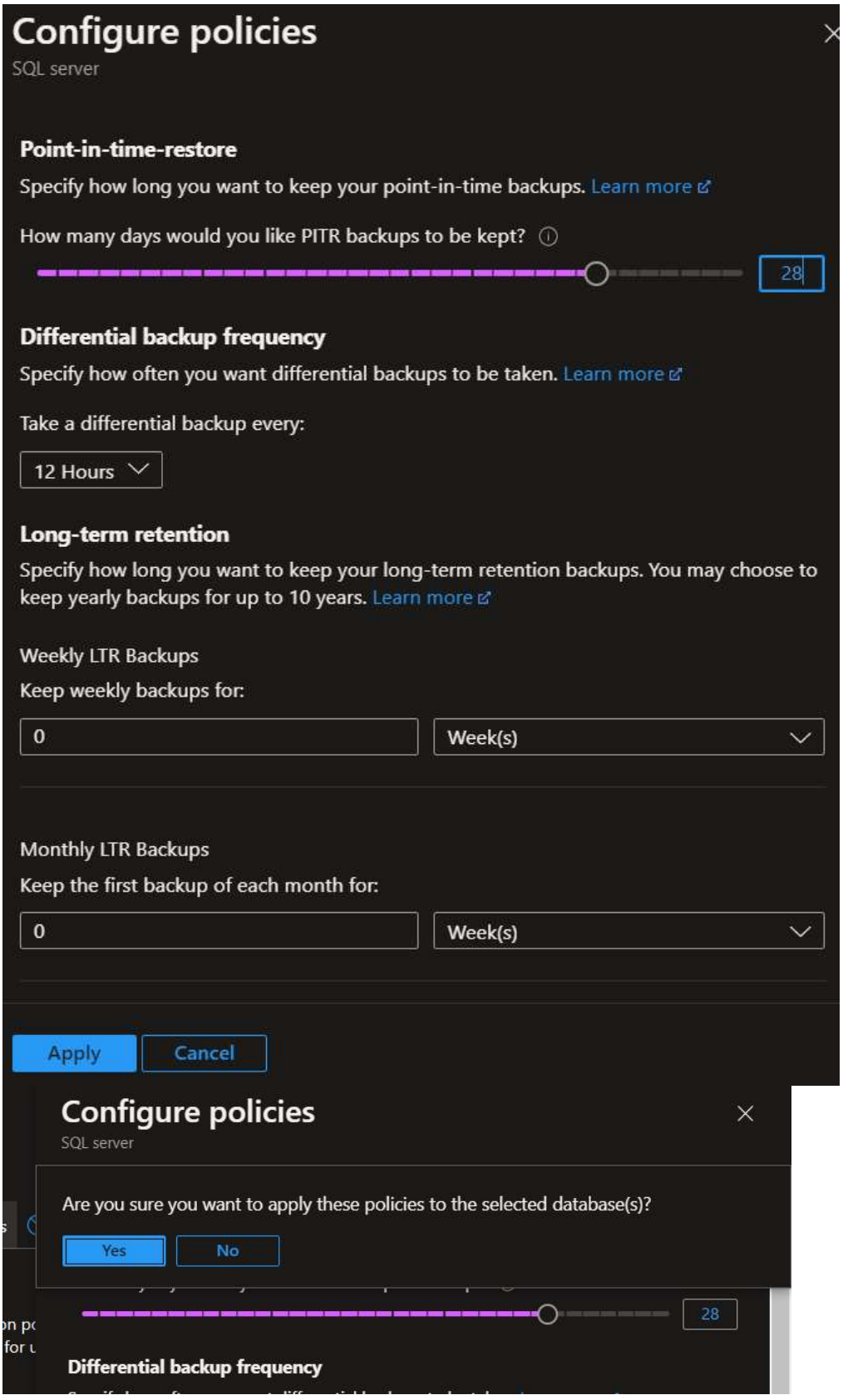
15. On the Backups page, click Retention Policies tab



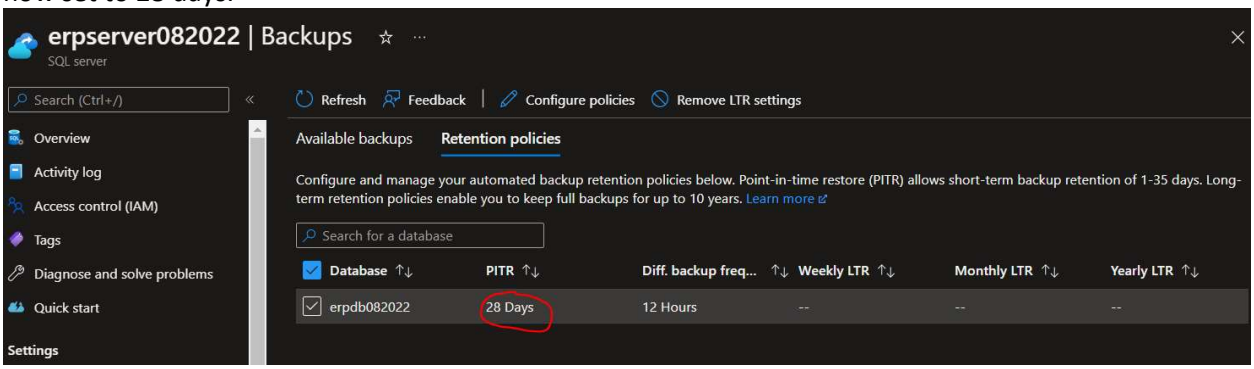
16. On the Retention policies tab, check the database and then click Configure policies. You will go to Configure policies page



17. In the Configure policies tab, set Point-in-time-restore to 28 days. Then click Apply button and then click Yes button to confirm.

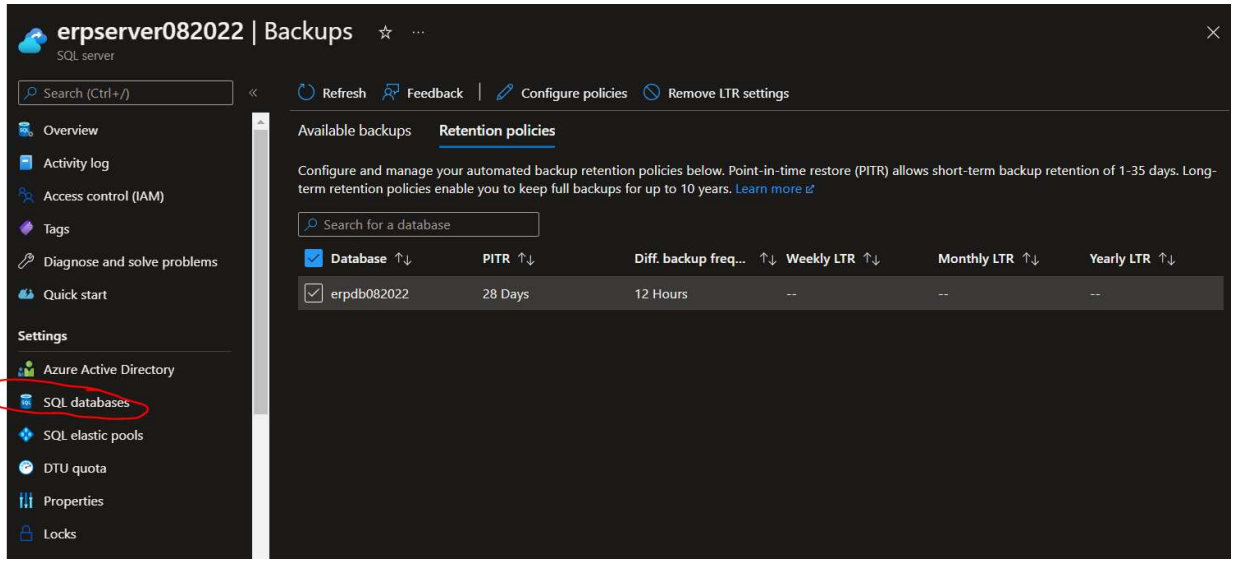

Configure policies
SQL server
Point-in-time-restore
Specify how long you want to keep your point-in-time backups. Learn more
How many days would you like PITR backups to be kept?
28
Differential backup frequency
Specify how often you want differential backups to be taken. Learn more
Take a differential backup every:
12 Hours
Long-term retention
Specify how long you want to keep your long-term retention backups. You may choose to keep yearly backups for up to 10 years. Learn more
Weekly LTR Backups
Keep weekly backups for:
0
Week(s)
Monthly LTR Backups
Keep the first backup of each month for:
0
Week(s)
Apply
Cancel
Configure policies
SQL server
Are you sure you want to apply these policies to the selected database(s)?
Yes
No
28
Differential backup frequency

18. Wait for few minutes. When setup is completed. Notice that the PITR (Point-in-time-restore) is now set to 28 days.

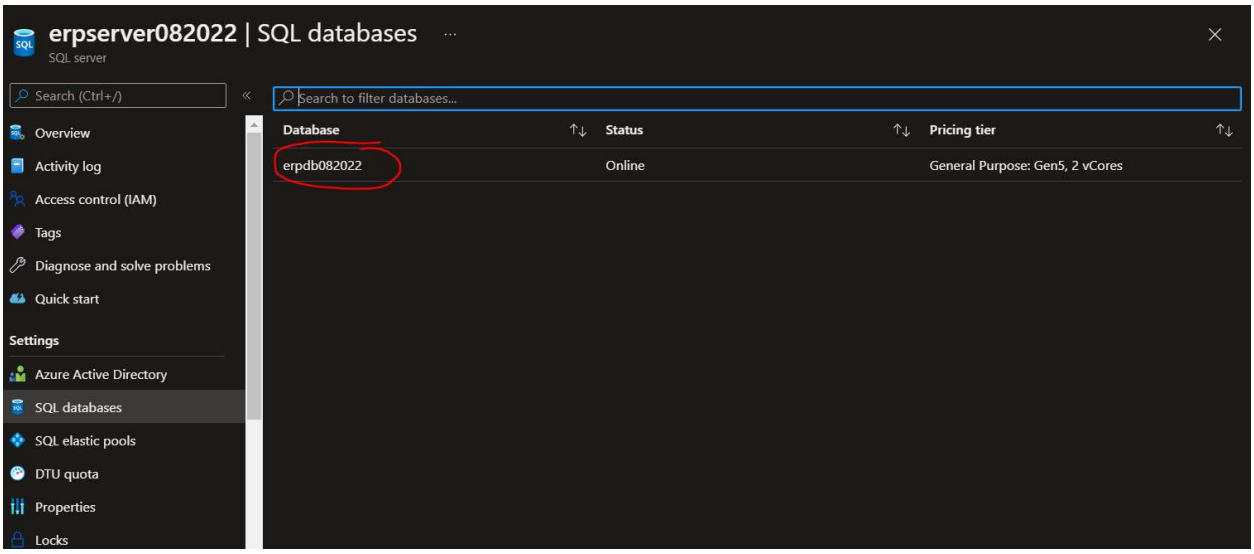


Add data to the database

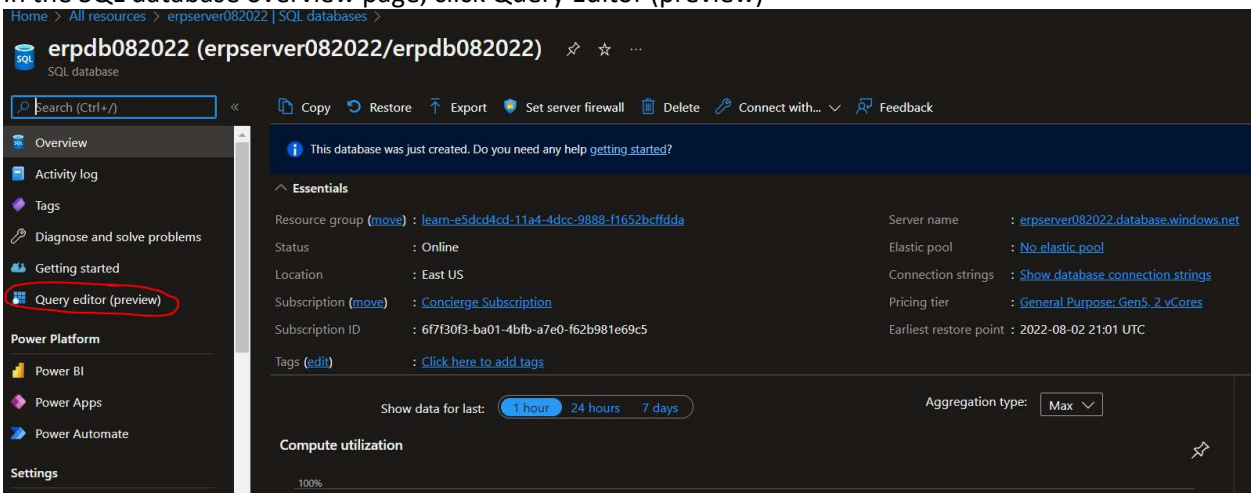
19. In the Backups page, go to SQL databases under Settings section. You will go to the SQL Database Window



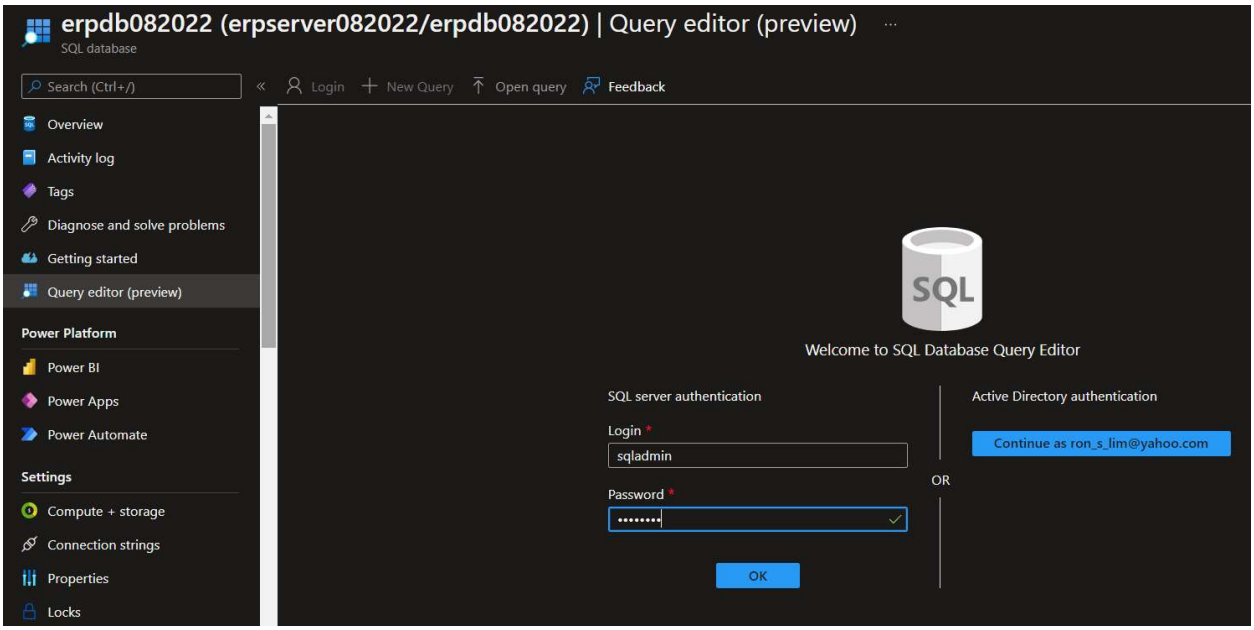
20. Click the database, you will go to SQL Database overview page



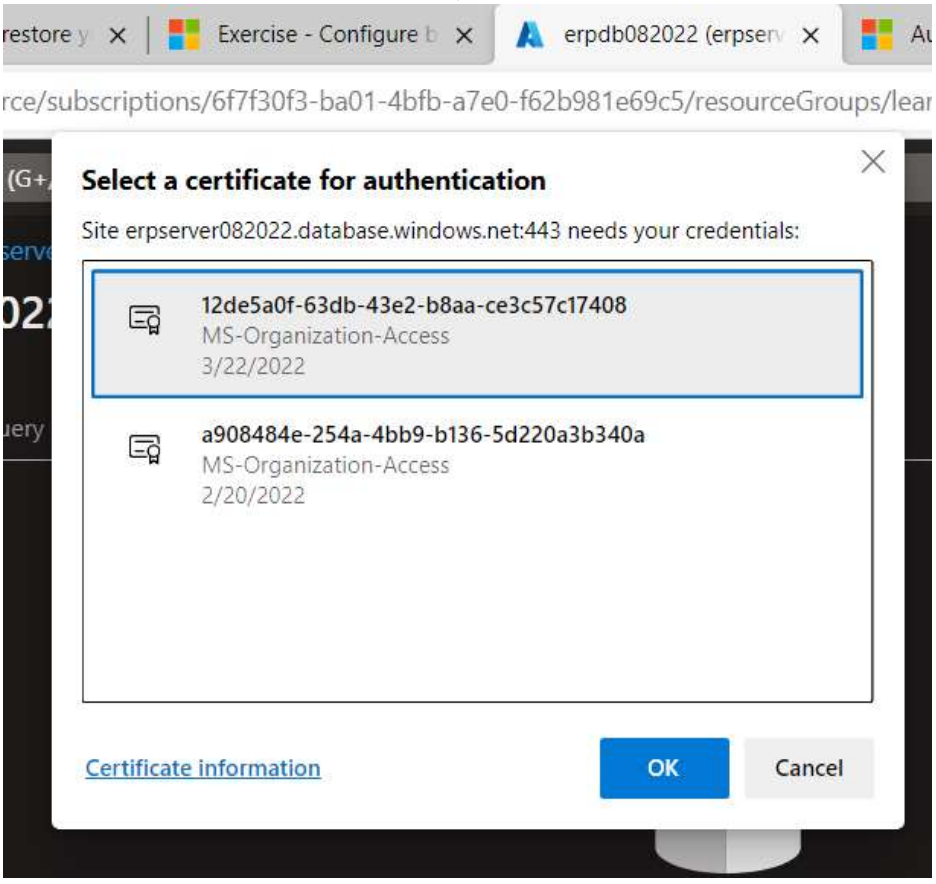
21. In the SQL database overview page, click Query Editor (preview)



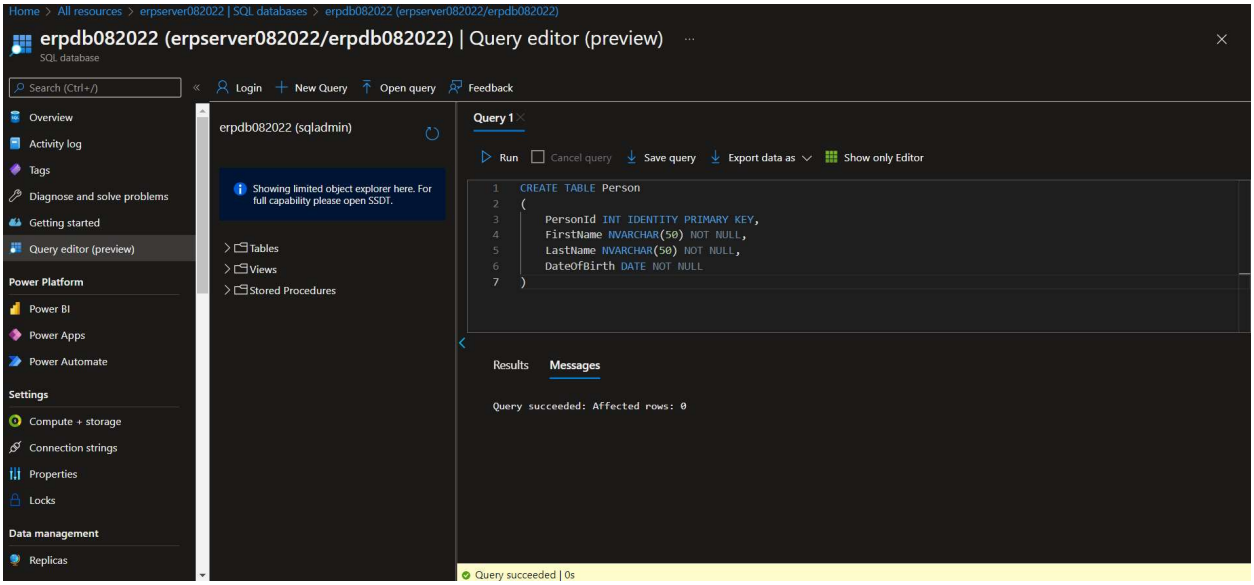
22. Login as sqladmin on SQL server authentication and fill-out the password and then click OK button. You will go to Query Editor page



23. Just in case there is a select certificate, choose one of them and then click OK button



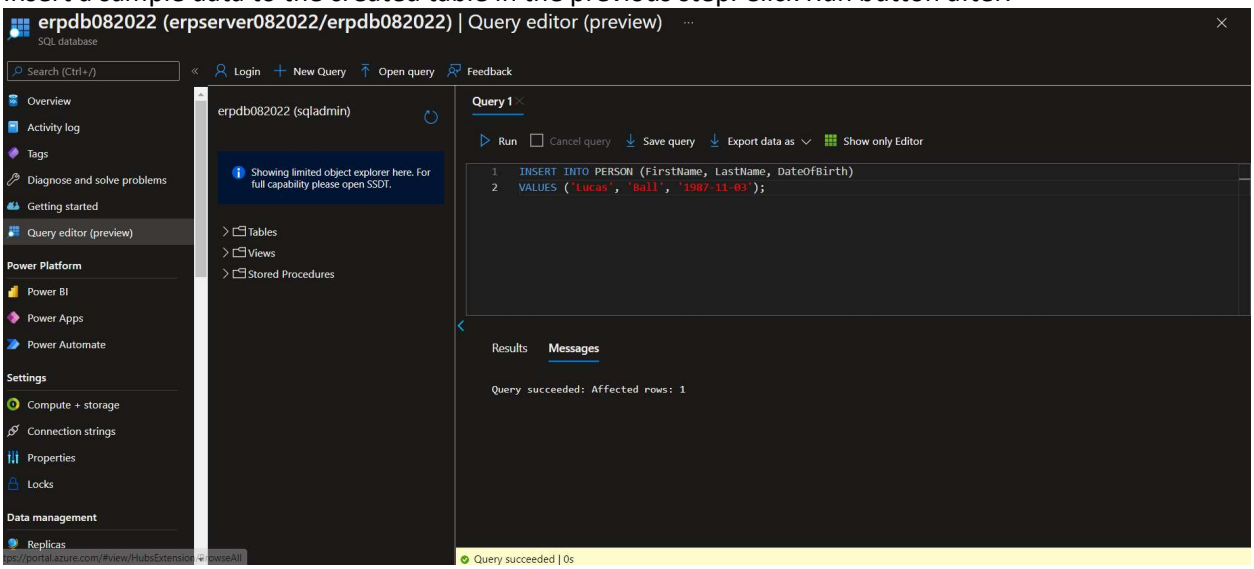
24. In the Query Editor page, create a sample table just for testing of the restore and then click Run button



Create table script sample:

CREATE TABLE Person
(
PersonId INT IDENTITY PRIMARY KEY,
FirstName NVARCHAR(50) NOT NULL,
LastName NVARCHAR(50) NOT NULL,
DateOfBirth DATE NOT NULL
)

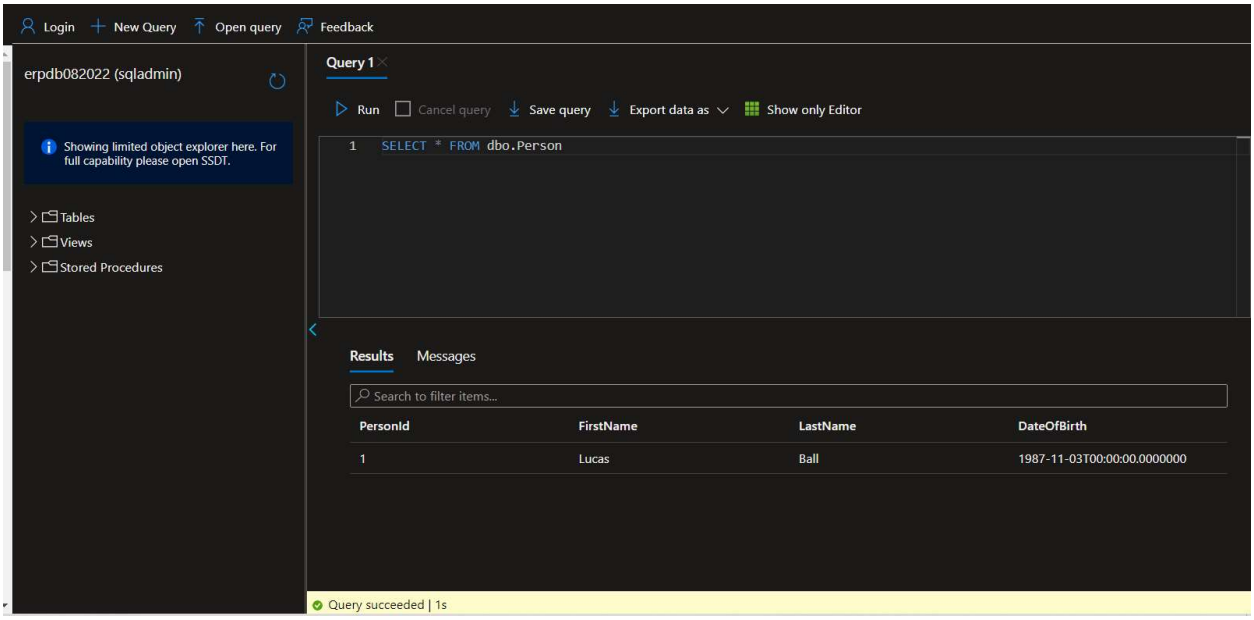
25. Insert a sample data to the created table in the previous step. Click Run button after.



Insert script sample:

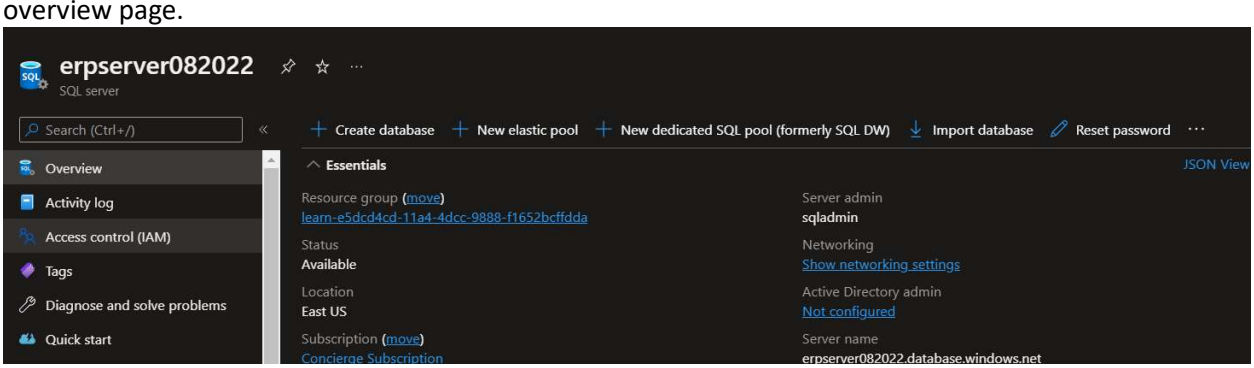
INSERT INTO PERSON (FirstName, LastName, DateOfBirth)
VALUES ('Lucas', 'Ball', '1987-11-03');

26. Check or verify that there is a record to the table by select script and click Run button. Notice that there is a record on the table

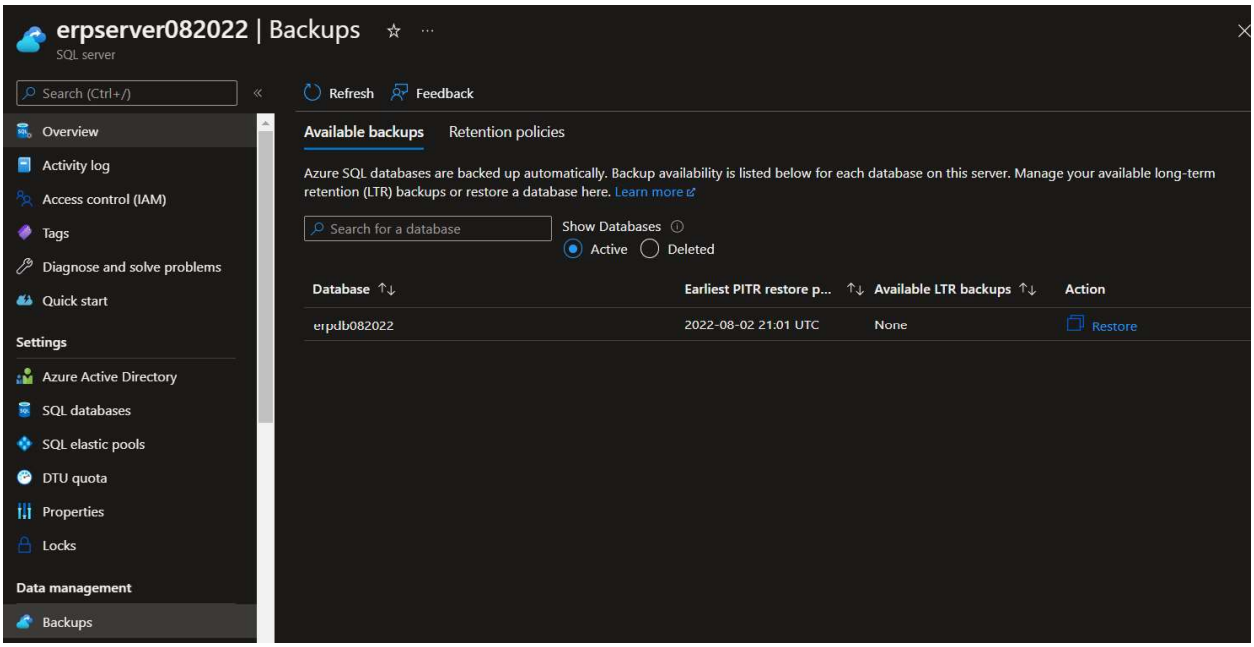


Configure Long Term Retention Policy via Azure Portal

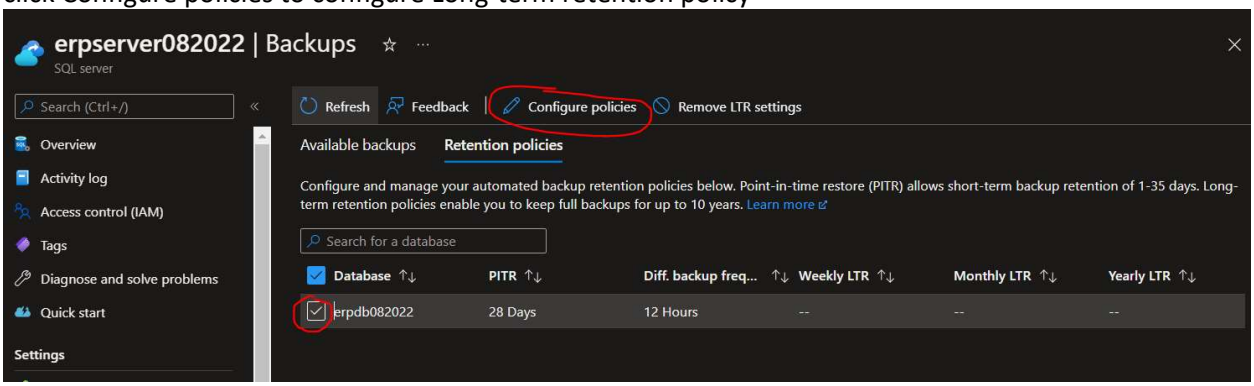
27. Go back to Home page. Your unsave edits will be discarded popup window will appear. Just click OK button and then click All resources then click the SQL Server, you will go to SQL Server overview page.



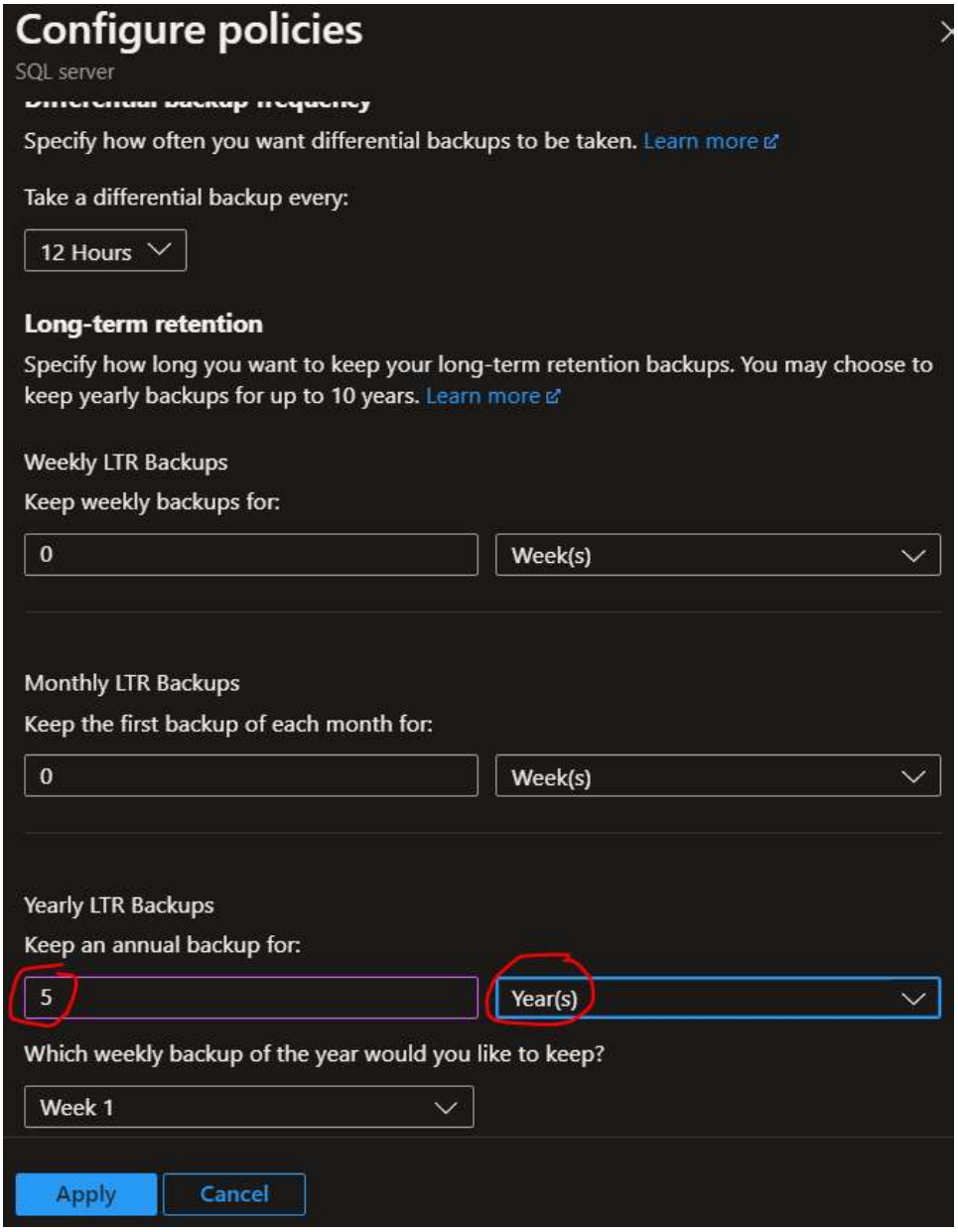
28. Go to Backups under Data management section, you will go to Backups page



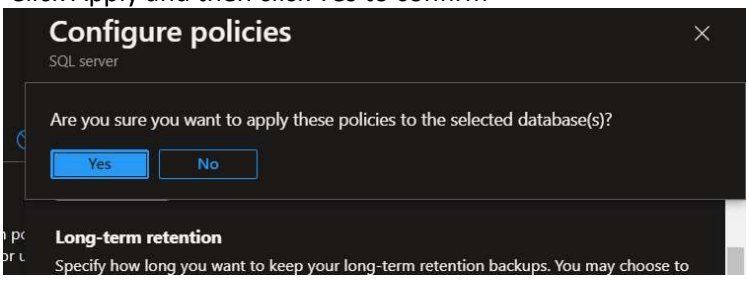
29. Click Retention policies to go to Retention policies tab and then check the database and then click Configure policies to configure Long-term retention policy



30. In the Yearly LTR Backups section of Configure policies window, set the Keep Annual backup for: to 5 and unit to Year(s). Keep the Which weekly backup… to default Week 1



31. Click Apply and then click Yes to confirm



Configure Long Term Retention Policy via Powershell

32. Get the Resource Group

```
PS /home/ron_s_lim> $ResourceGroup=Get-AzResourceGroup
PS /home/ron_s_lim>
```

Command: **$ResourceGroup=Get-AzResourceGroup**

33. Take note of the SQL Server Name and SQL Database Name from Azure Portal. View the Long-Term Retention policy. Notice the YearlyRetention is P5Y which is 5 years. We earlier set the 5 years Long-term Retention Policy via Azure Portal

```
PS /home/ron_s_lim> Get-AzSqlDatabaseBackupLongTermRetentionPolicy `
>>      -ServerName erpserver082022 `
>>      -DatabaseName erpdb082022 `
>>      -ResourceGroupName $ResourceGroup.ResourceGroupName

ResourceGroupName : learn-e5dcd4cd-11a4-4dcc-9888-f1652bcffdda
ServerName        : erpserver082022
DatabaseName      : erpdb082022
WeeklyRetention   : PT0S
MonthlyRetention  : PT0S
YearlyRetention   : P5Y
WeekOfYear        : 1
Location          :
```

Sample Command:

Get-AzSqlDatabaseBackupLongTermRetentionPolicy `
-ServerName erpserver082022 `
-DatabaseName erpdb082022 `
-ResourceGroupName $ResourceGroup.ResourceGroupName

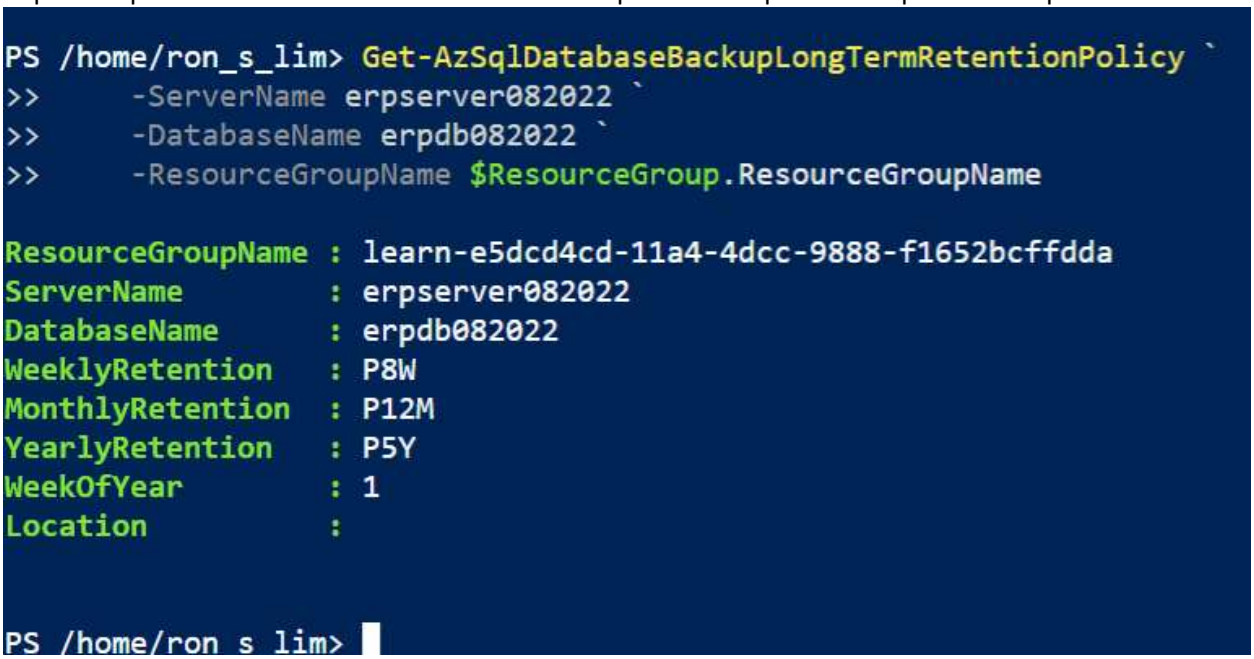
34. Set the remaining retention policies

```
PS /home/ron_s_lim> Set-AzSqlDatabaseBackupLongTermRetentionPolicy `
>>      -ServerName erpserver082022 `
>>      -DatabaseName erpdb082022 `
>>      -ResourceGroupName $ResourceGroup.ResourceGroupName `
>>      -WeeklyRetention P8W `
>>      -MonthlyRetention P12M `
>>      -YearlyRetention P5Y `
>>      -WeekOfYear 1

ResourceGroupName : learn-e5dcd4cd-11a4-4dcc-9888-f1652bcffdda
ServerName        : erpserver082022
DatabaseName      : erpdb082022
WeeklyRetention   : P8W
MonthlyRetention  : P12M
YearlyRetention   : P5Y
WeekOfYear        : 1
Location          :


PS /home/ron_s_lim>
```

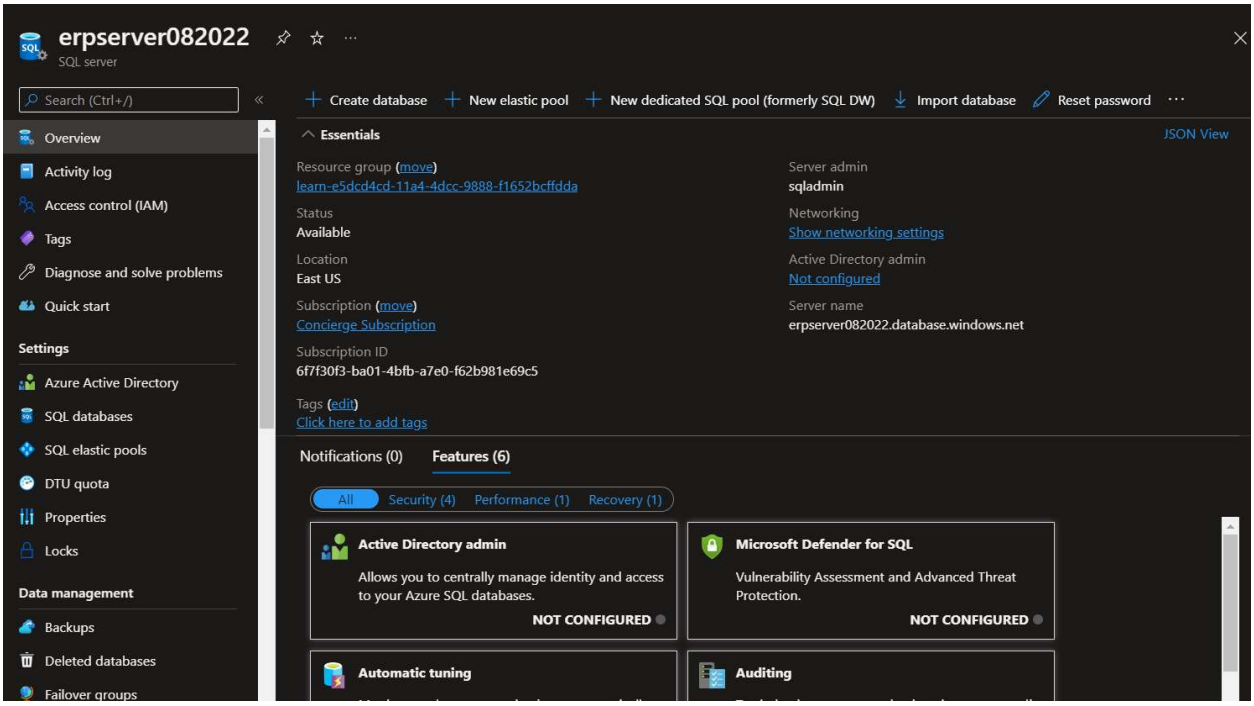
Sample command:

```
Set-AzSqlDatabaseBackupLongTermRetentionPolicy `
   -ServerName erpserver082022 `
   -DatabaseName erpdb082022 `
   -ResourceGroupName $ResourceGroup.ResourceGroupName `
   -WeeklyRetention P8W `
   -MonthlyRetention P12M `
   -YearlyRetention P5Y `
   -WeekOfYear 1
```

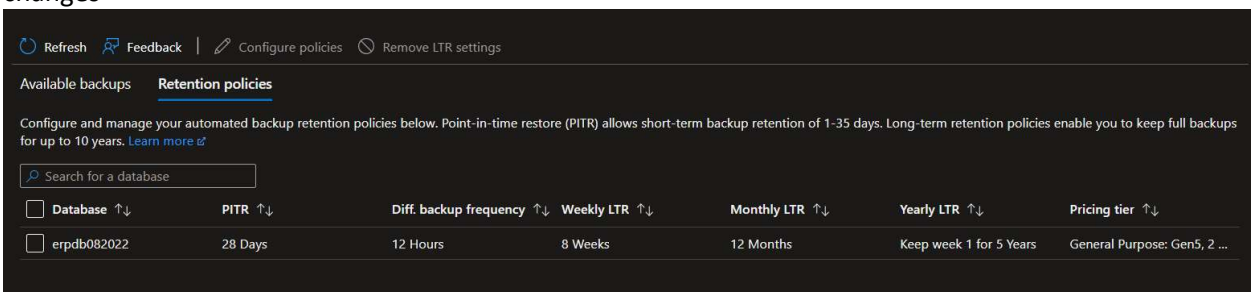
35. Repeat step 33. This time there are more retention policies setup based on previous step



36. In Azure Portal, go to Home then All Resources and then choose SQL Server to go to SQL Server overview page.

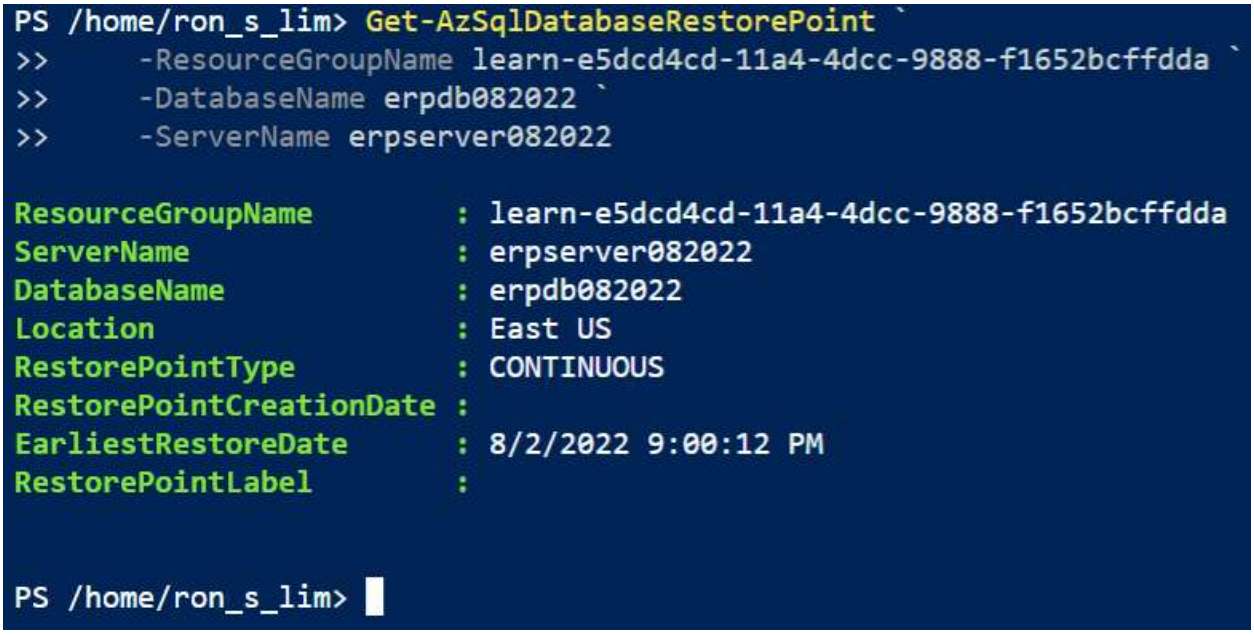


37. Then click Backups under Data management to go to Backups page. Then click Retention policies to go to the Retention policies tab. The retention policies are now updated. Note: Just in case retention policies still the same and changes did not reflect, please refresh the page to see the changes



Check that the backups are active

38. Validate that the backups are continuously running

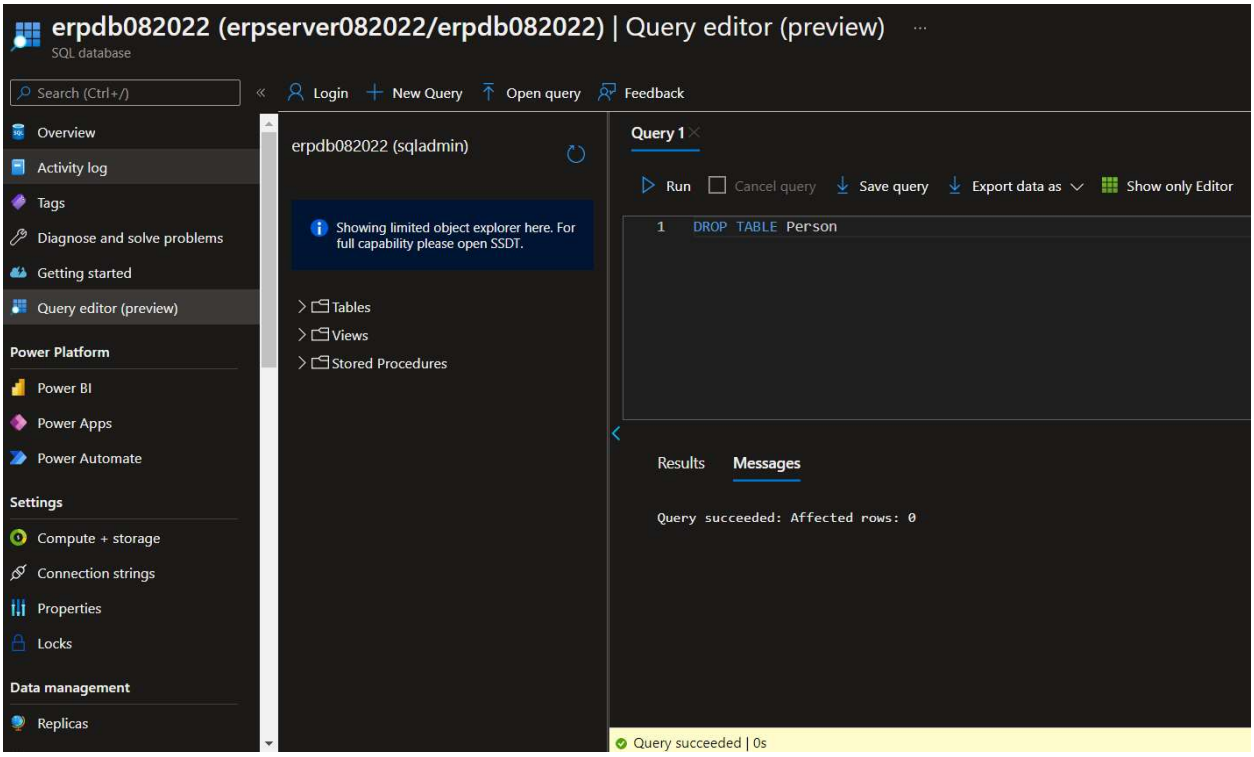


Sample command:

Get-AzSqlDatabaseRestorePoint `
-ResourceGroupName learn-e5dcd4cd-11a4-4dcc-9888-f1652bcffdda `
-DatabaseName erpdb082022 `
-ServerName erpserver082022

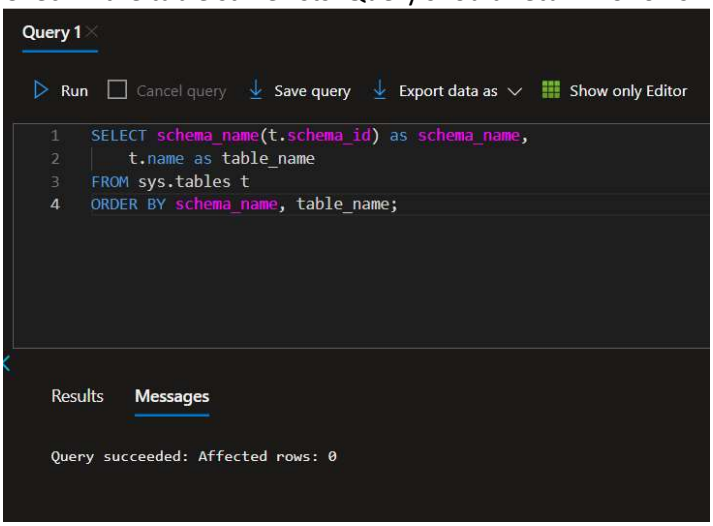
Drop a table from the database

39. Go to the SQL Database overview page and the click Query Editor (preview) and login as sqladmin and then Drop the table.



Command: **DROP TABLE Person**

40. Check if the table still exists. Query should return no rows.

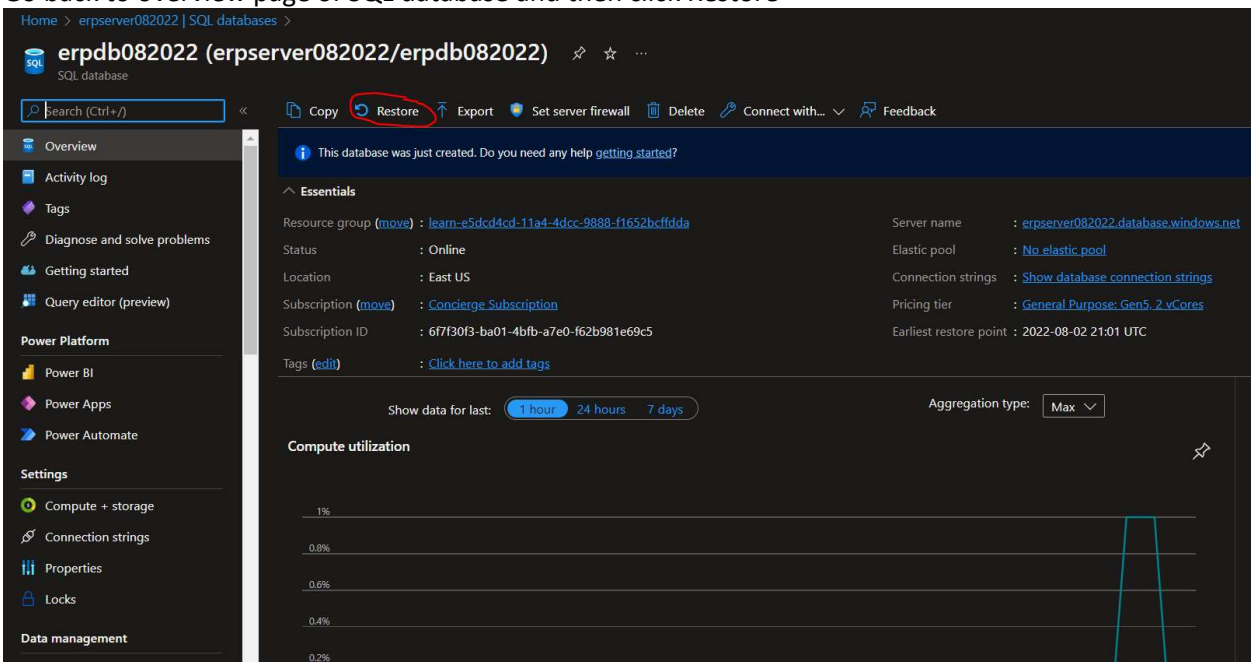


Command:

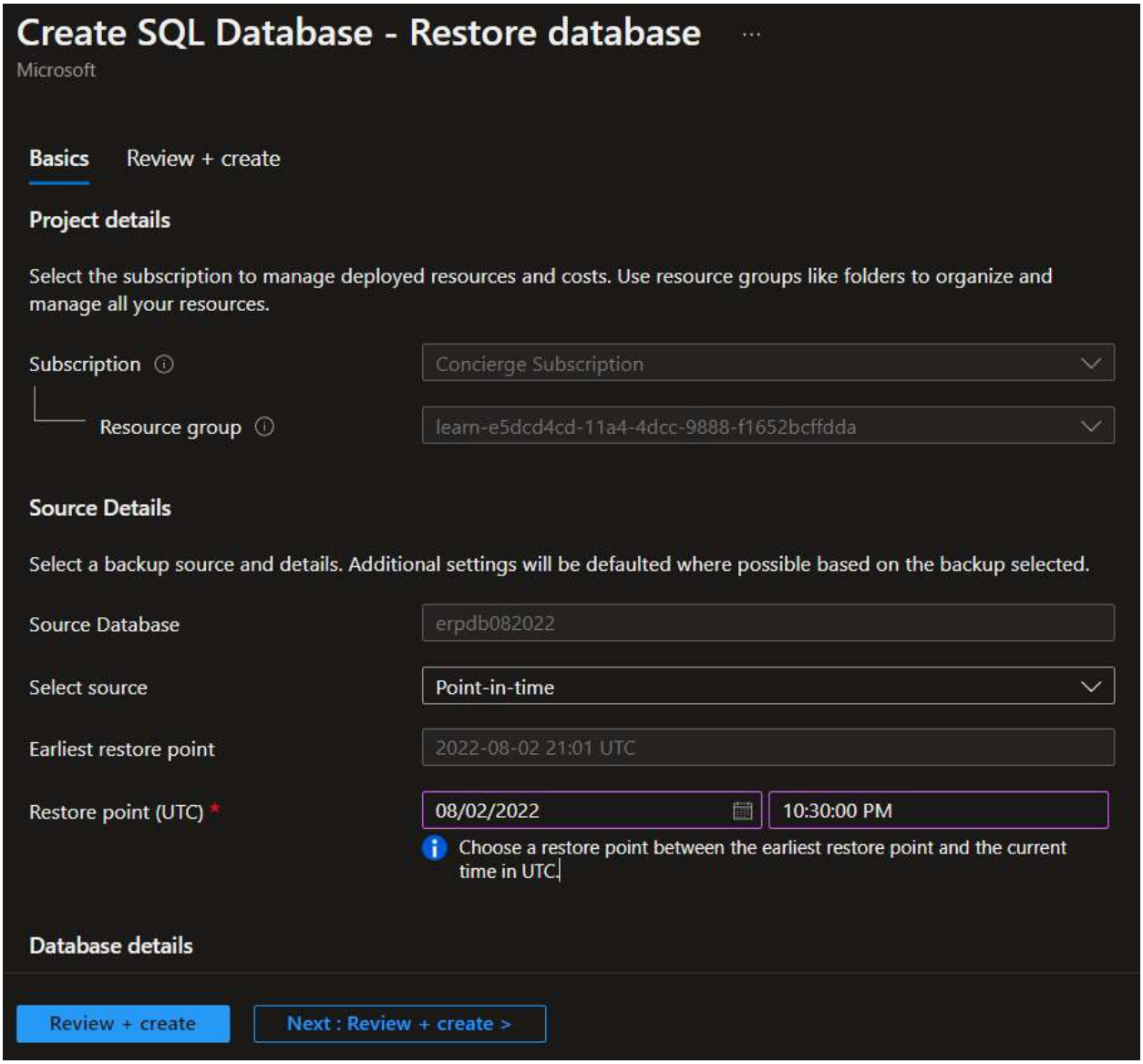
SELECT schema_name(t.schema_id) as schema_name,
t.name as table_name
FROM sys.tables t
ORDER BY schema_name, table_name;

Run a point in time restore

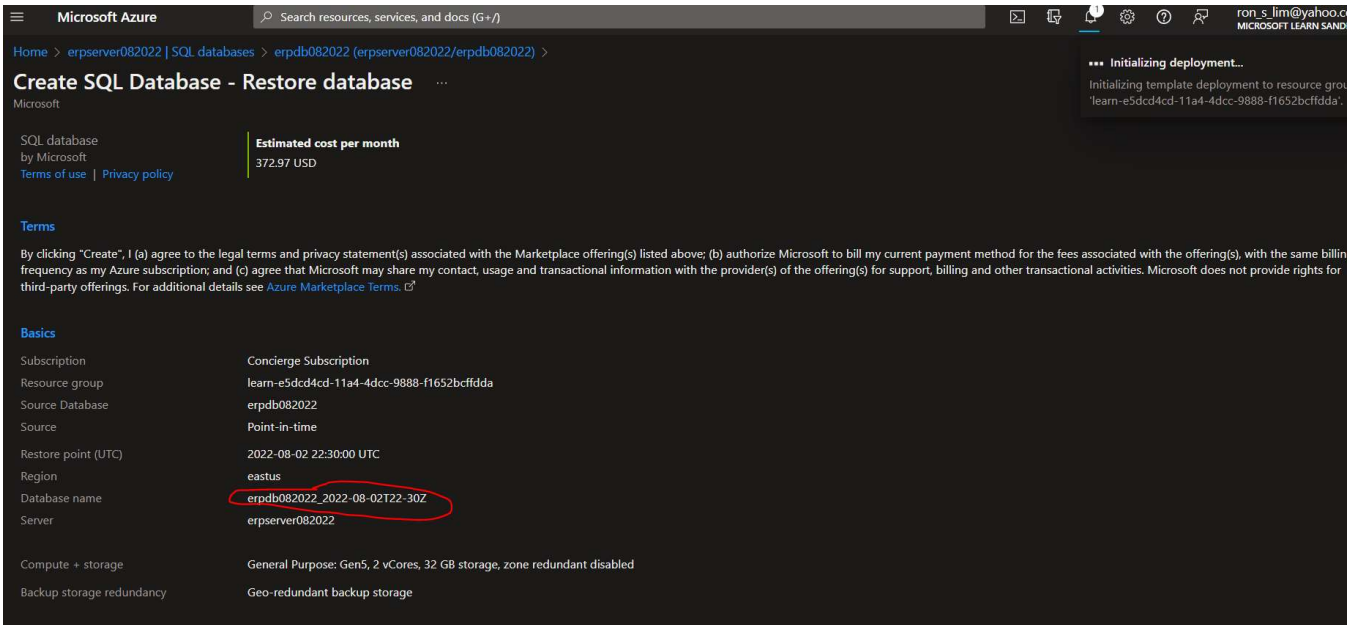
41. Go back to overview page of SQL database and then click Restore



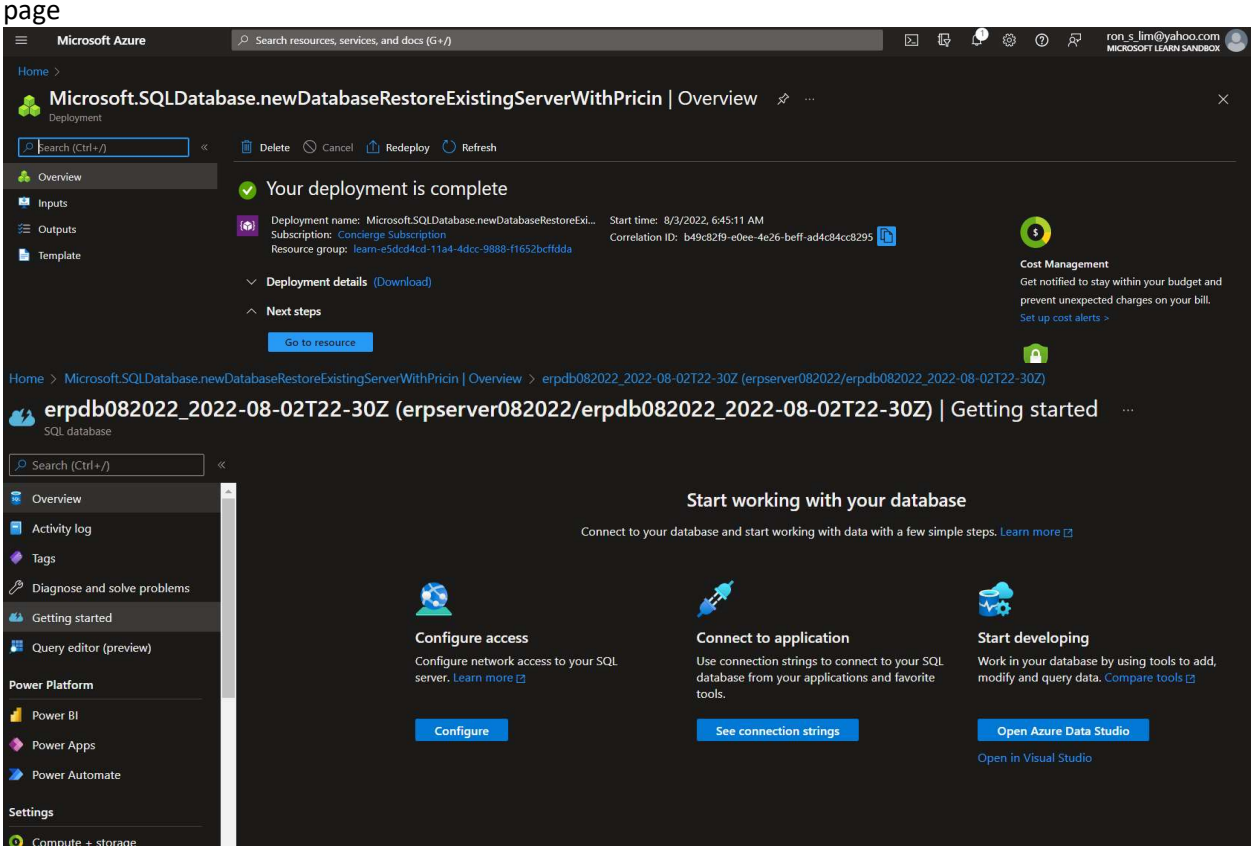
42. Select a time let's say 10 minutes or before then click Review + create button



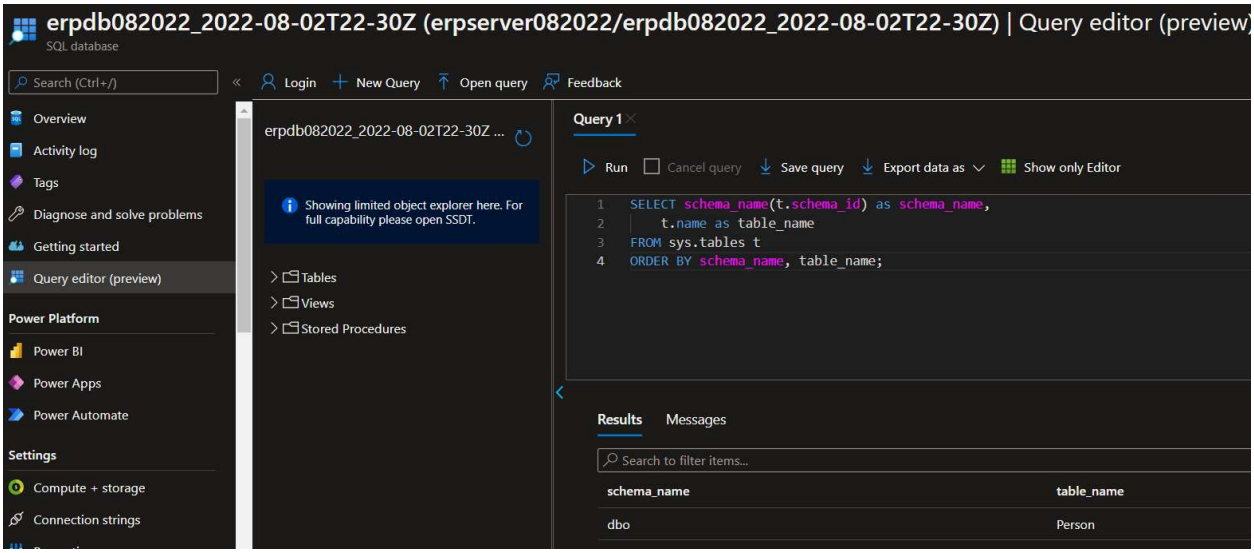
43. Click Create button to start with the restore to a new database. Notice that the new database contains the original name + timestamp



44. After deployment completed, click Go to resource button to go to SQL Database Getting started page



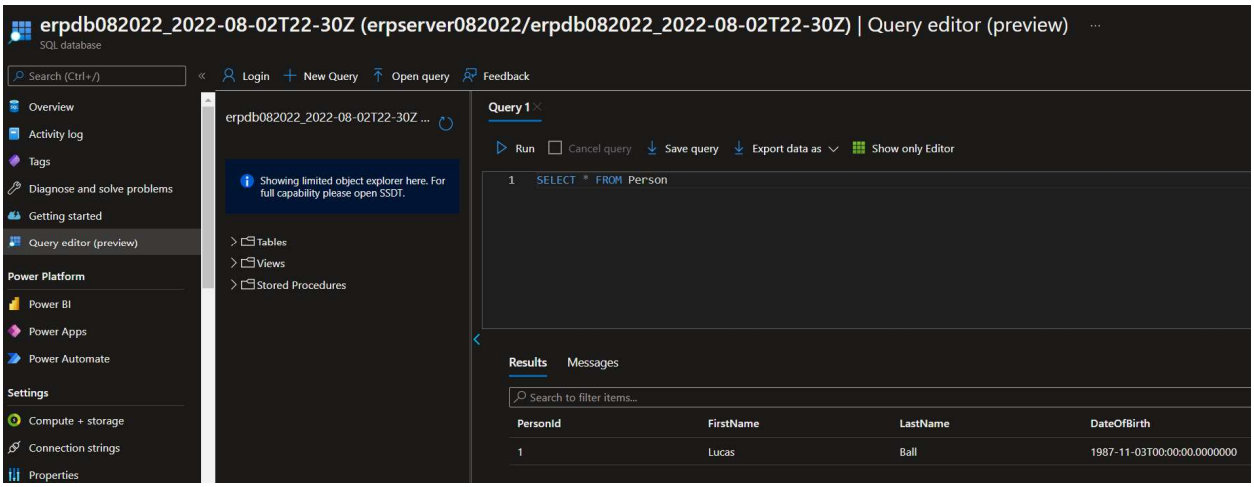
45. Click Query Editor (preview) and login as sqladmin and then check if table exists. Table should already exist



Query:

SELECT schema_name(t.schema_id) as schema_name,
t.name as table_name
FROM sys.tables t
ORDER BY schema_name, table_name;

46. Check if the data is also restored in the database



Query:

SELECT * FROM Person