LAB15: Enable and run SQL Server best practices assessment

Best practices assessment provides a mechanism to evaluate the configuration of your SQL Server. After you enable best practices assessment, an assessment scans your SQL Server instance and databases to provide recommendations for things like:

- SQL Server and database configurations
- Index management
- Deprecated features
- Enabled or missing trace flags
- Statistics
- & more

Student Lab Manual

Table of Contents

===

Exercise 1 - Carry out SQL Server Best Practices Assessment

Objective

In this exercise you will set up and execute SQL Server Best Practices Assessment for your Arc-enabled SQl Server.

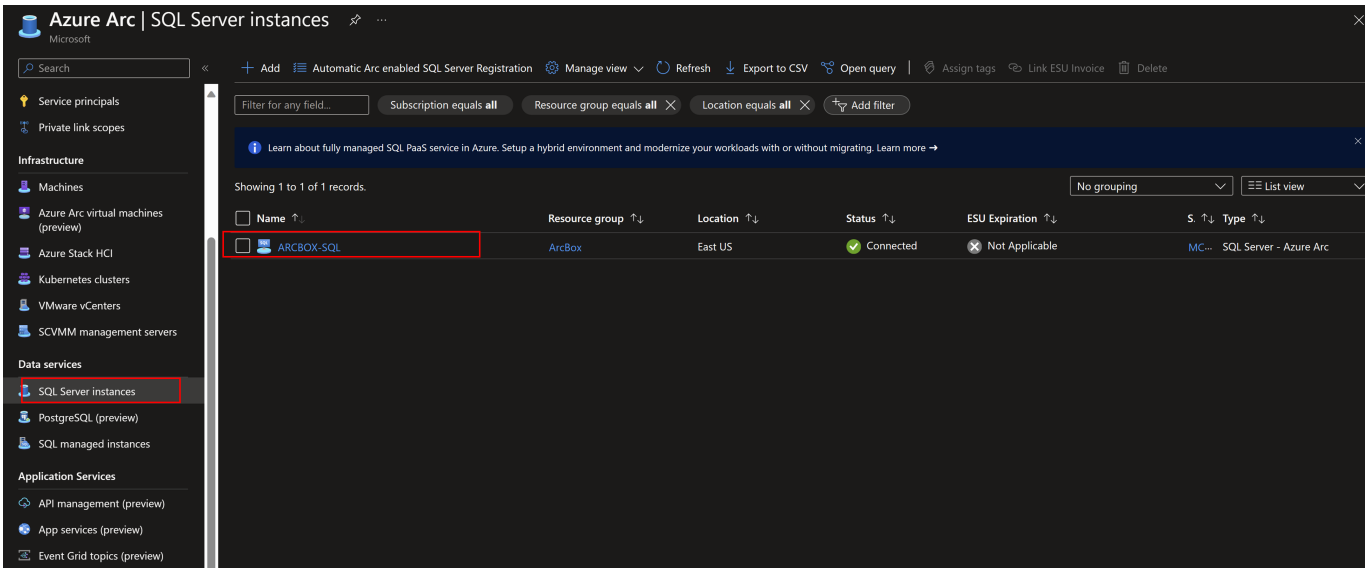
Estimated Time to Complete This Exercise

30 minutes

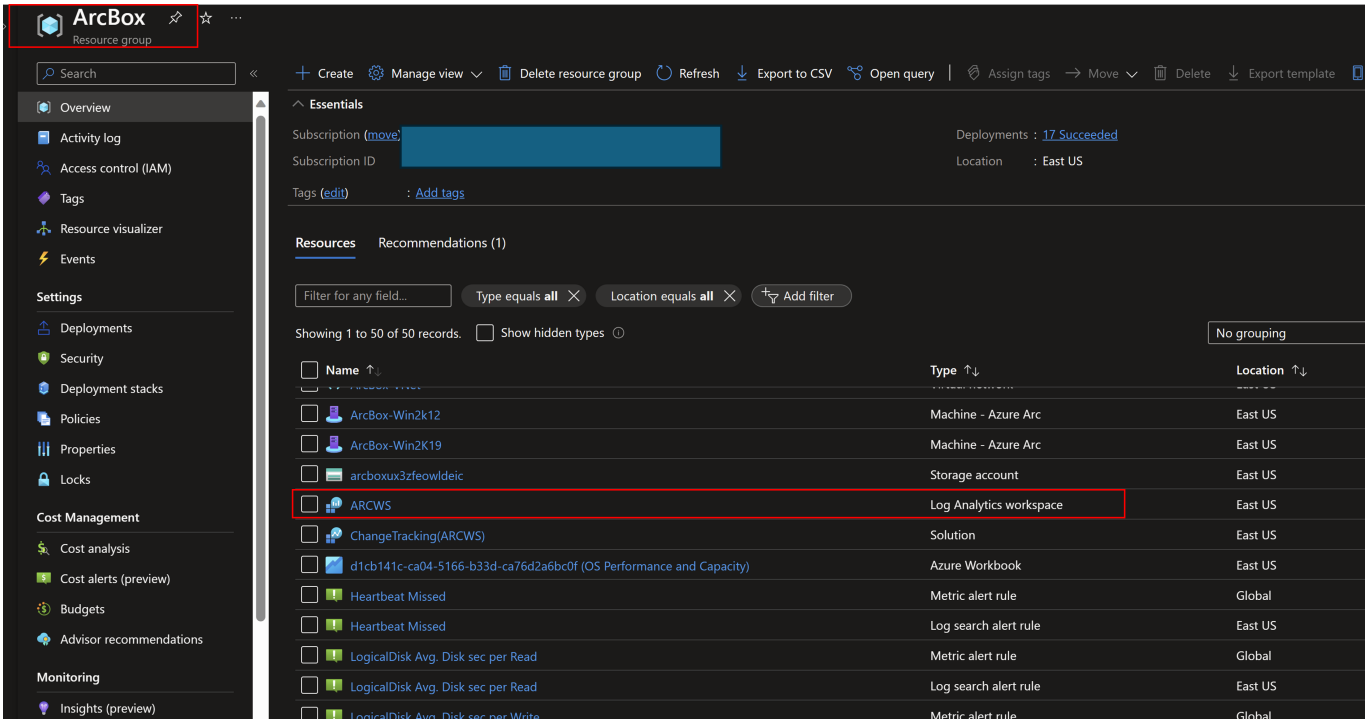
===

Task 1: SQL Server Best Practice Assessment Prerequisites

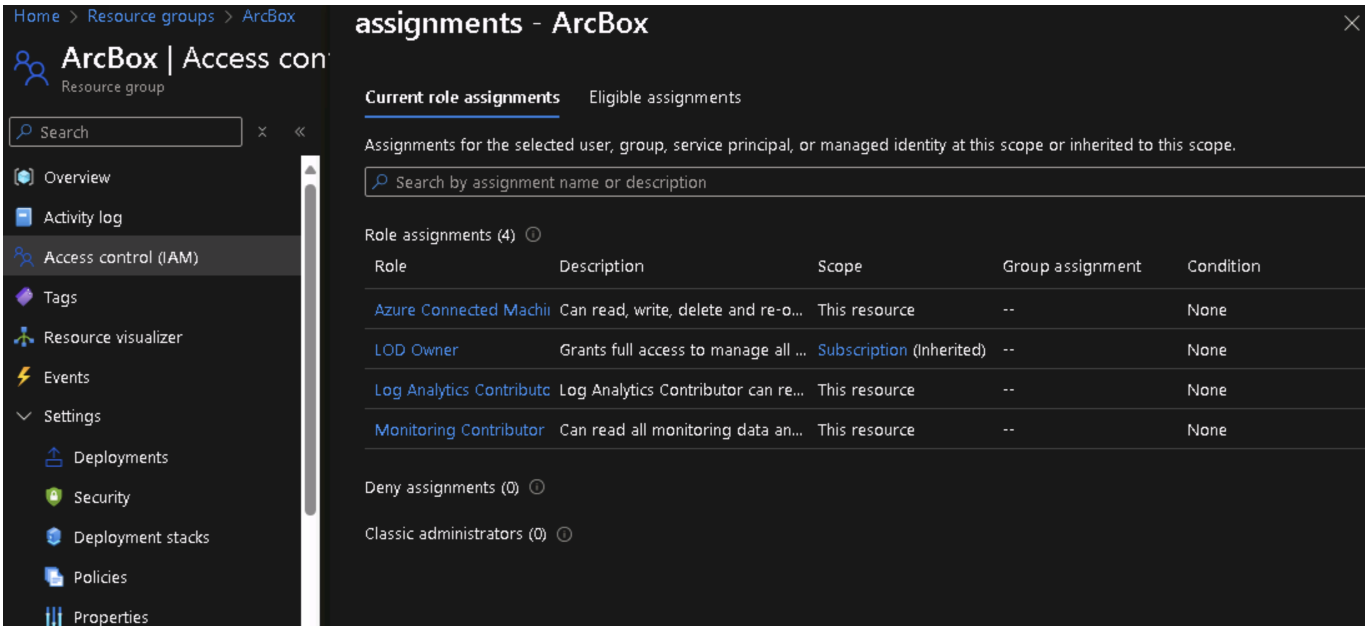
1. [] Make Sure that your SQL Server instance is connected to Azure Arc. From Azure portal go the *Azure Arc* page and select *SQL Server instances*. You should see the *ArcBox-SQL* SQL server connected.



2. [] Make sure that you have a Log Analytics workspace deployed in your resource group so that you can upload assessment results to it. The set-up scripts for this workshop should have set up one for you already in your lab resource group.



3. [] Make sure that you, as a lab user (the Azure username listed in the Resources section of the lab environment), have the following roles enabled and active **on the Resource Group Level** : *Monitoring Contributor*, *Log Analytics Contributor* and *Azure Connected Machine Resource Administrator*. If these roles are not enabled then go to the _Access Control (IAM) tab on the Resource Group page and enable them **making sure to set the Assignment Type to Active**.



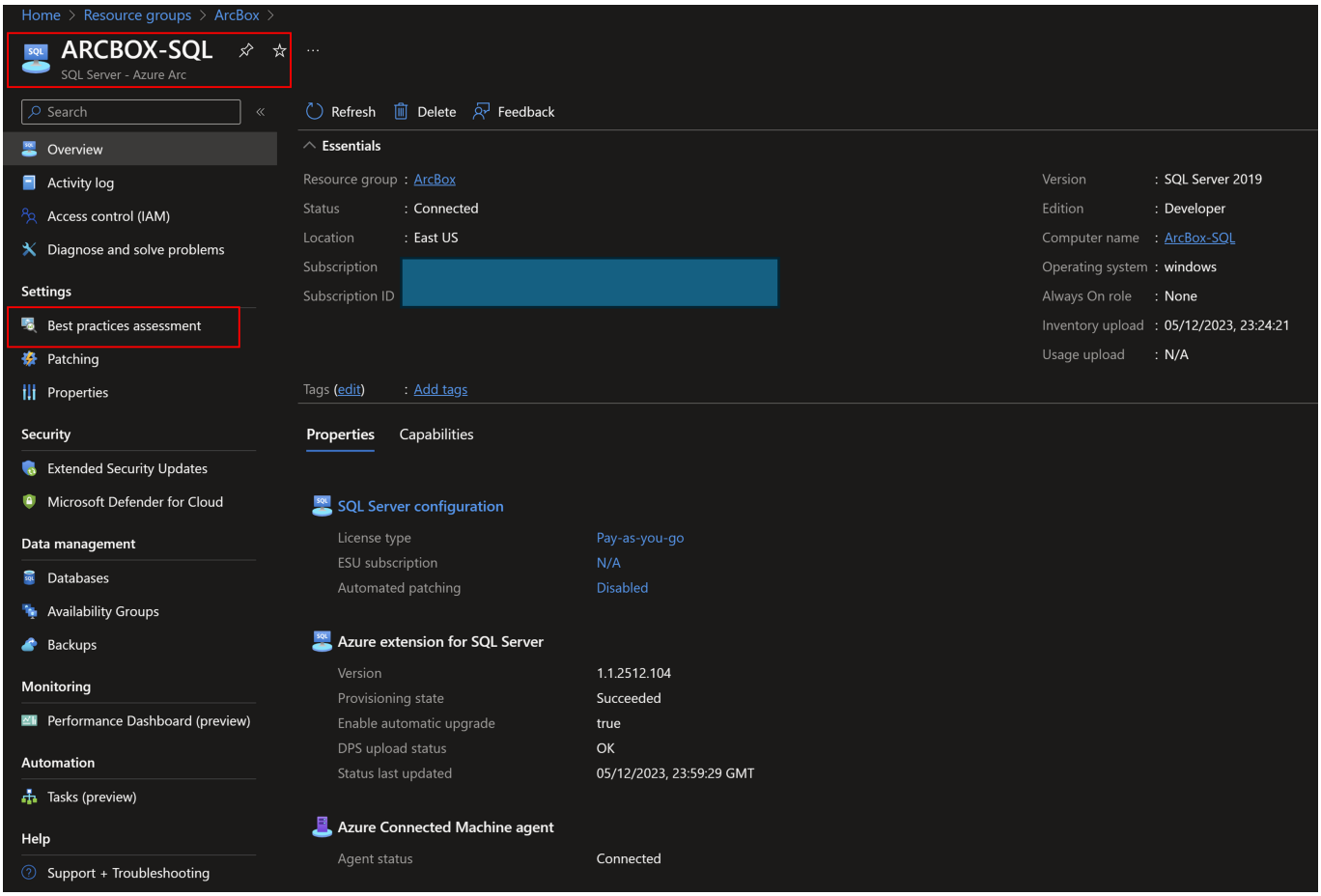
Task 1 has been completed

Click **Next** for the next exercise or **Go back to the main table of content**

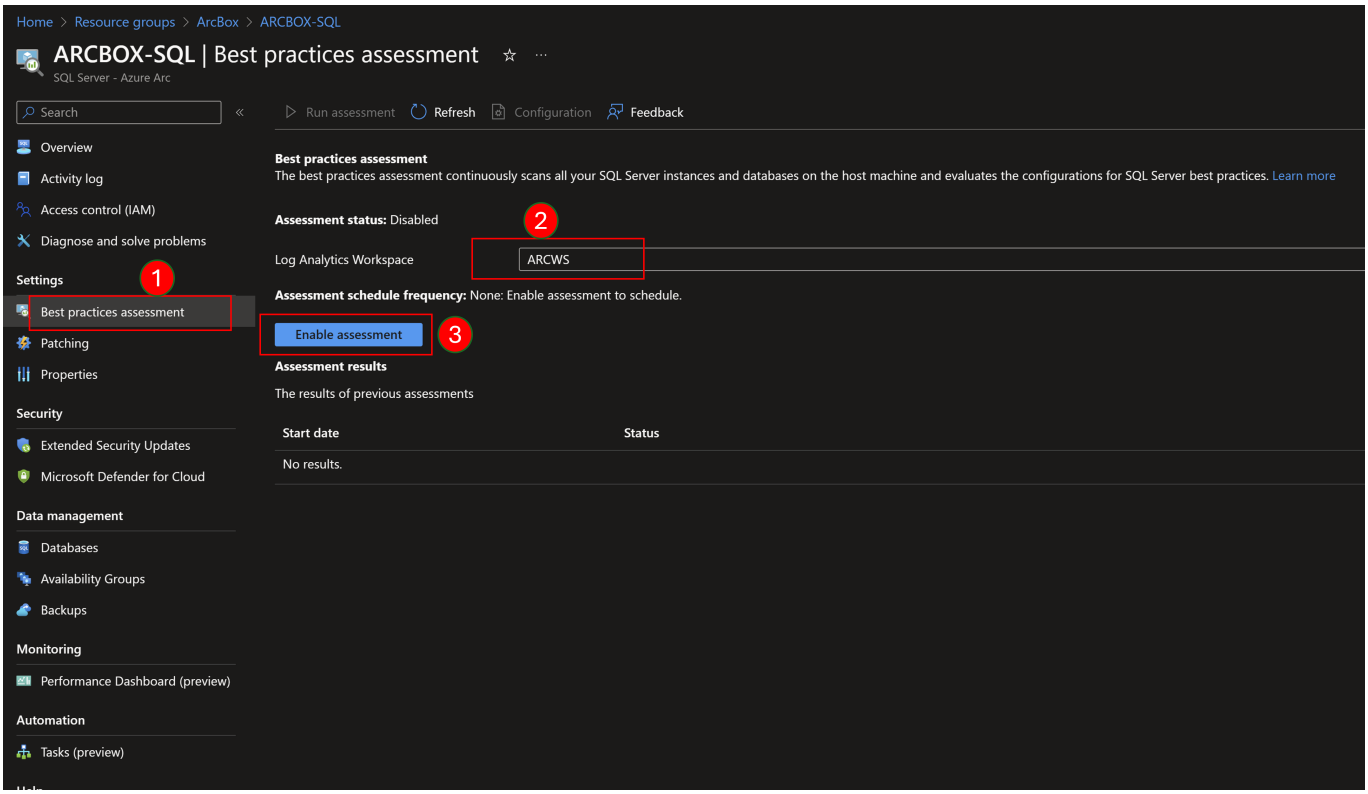
===

Task 2: Enable and run SQL Server best practices assessment

1. [] Go to your Arc-enabled SQL Server resource and click on the *Best Practices Assessment* under the *Setting* menu. If you are asked for a license type then follow the portal instructions and assign a PAYG license.

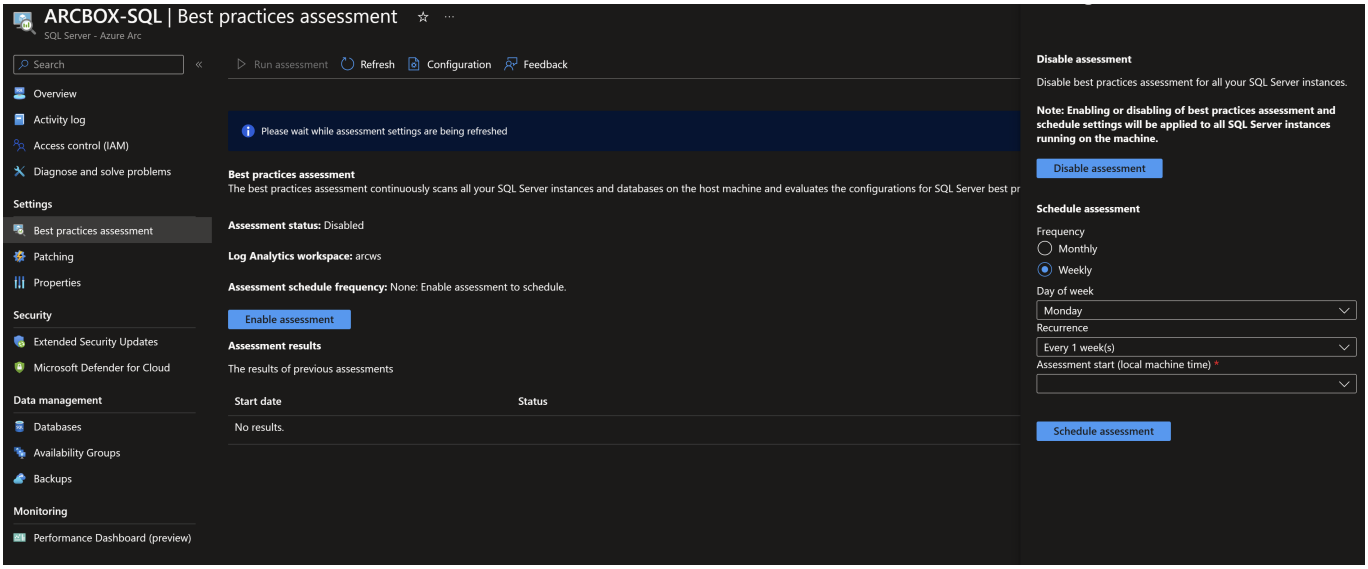


2. [] Select the log analytics workspace that you have in the same subscription as your Arc-enabled SQL Server resource and click on *Enable Assessment*.

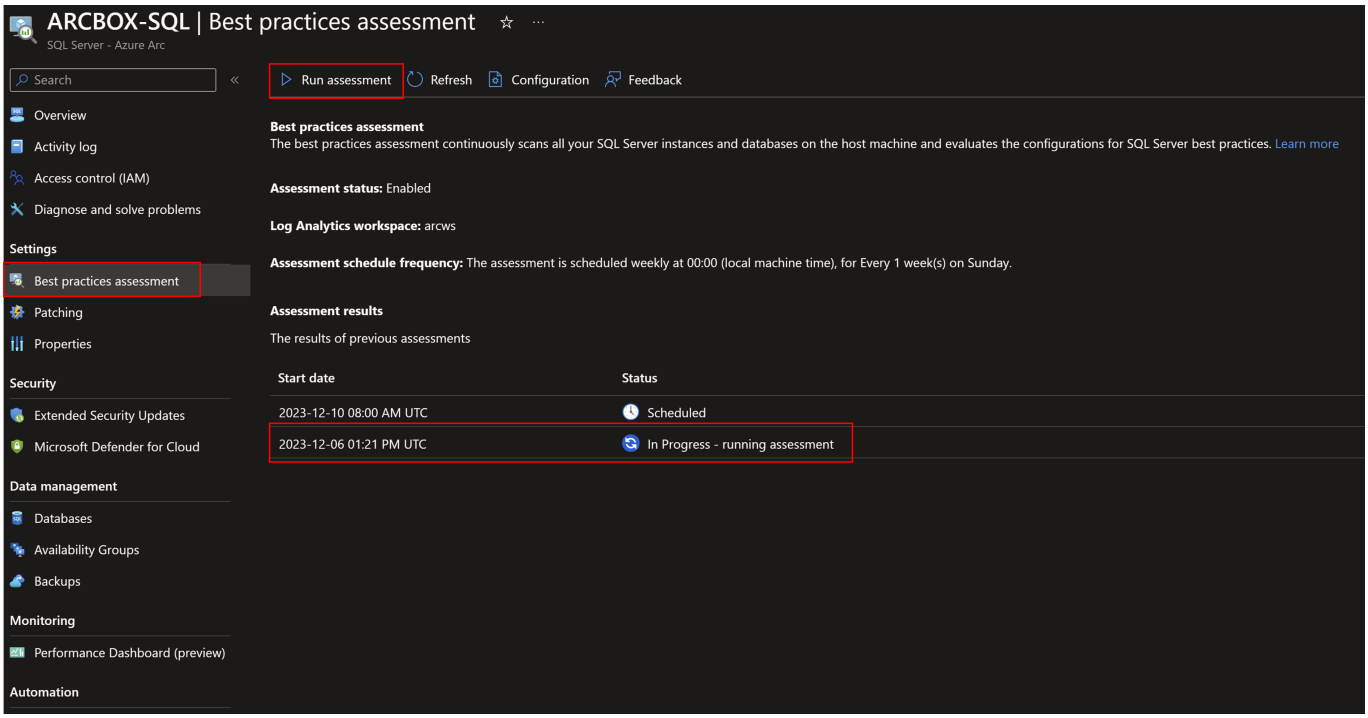


3. [] Wait until Best Practice Assessment is enabled which might take few minutes. Once the deployment of the best practice assessment is completed you can either start the assessment manually or you can use the *Configuration* option to either schedule or disable the assessment. Examine the *Configuration*

settings **but do not click *Schedule assessment*** as you will use the manual option in this lab. Close the *Configuration* settings.



4. [] Click *Run assessment* to manually start the assessment. You should see the progress indicator after a couple of minutes. Note that the assessment will take a bit of time to complete and you might need to refresh the page to see the results.



Task 2 has been completed

Click **Next** for the next exercise or **Go back to the main table of content**

===

Exercise 2 - Work with Best Practices Assessment results

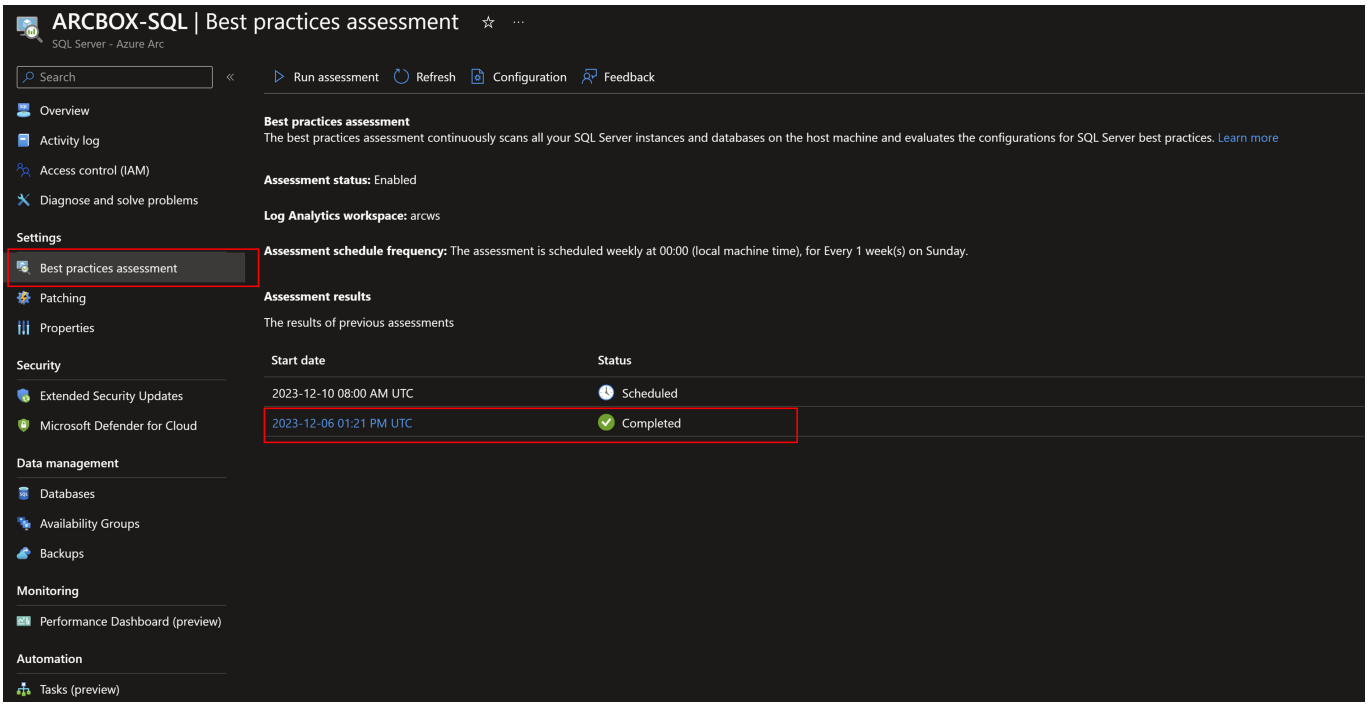
Estimated Time to Complete This Exercise

45 minutes

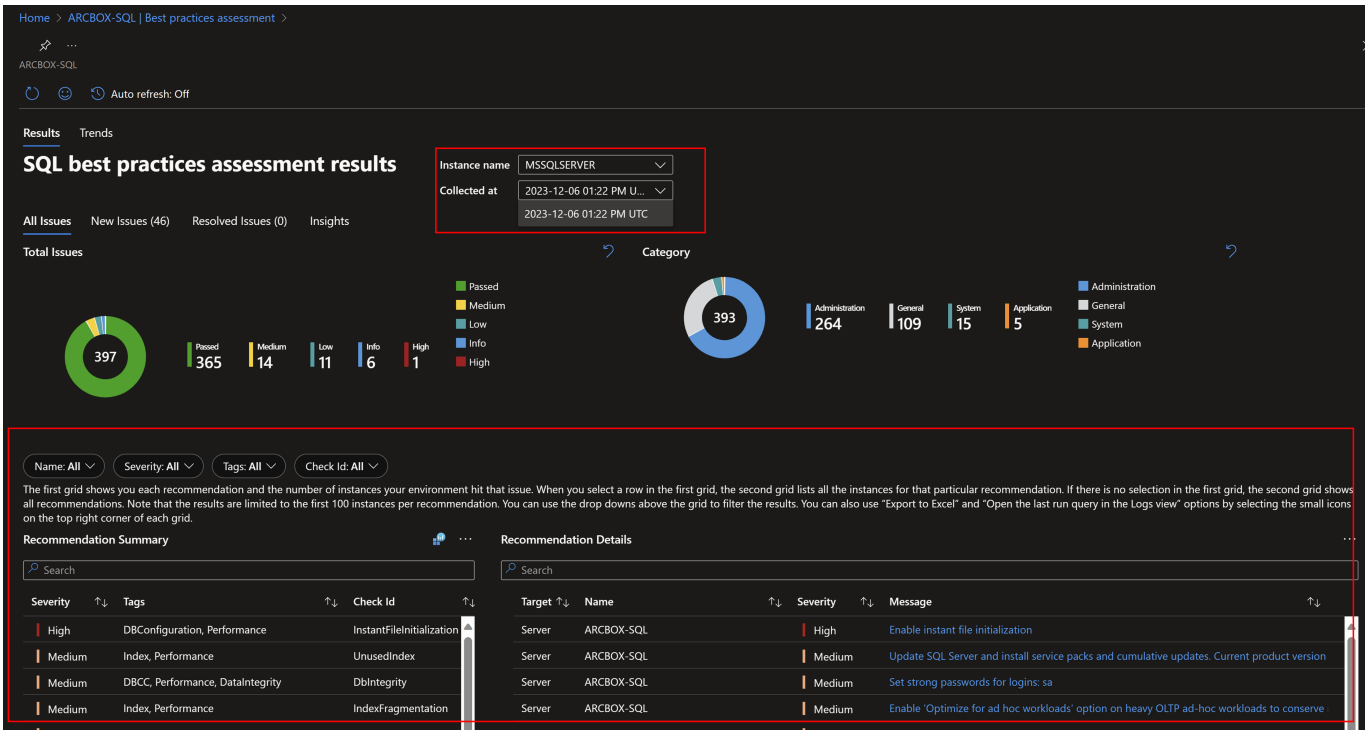
===

Task 1: View and resolve assessment issues

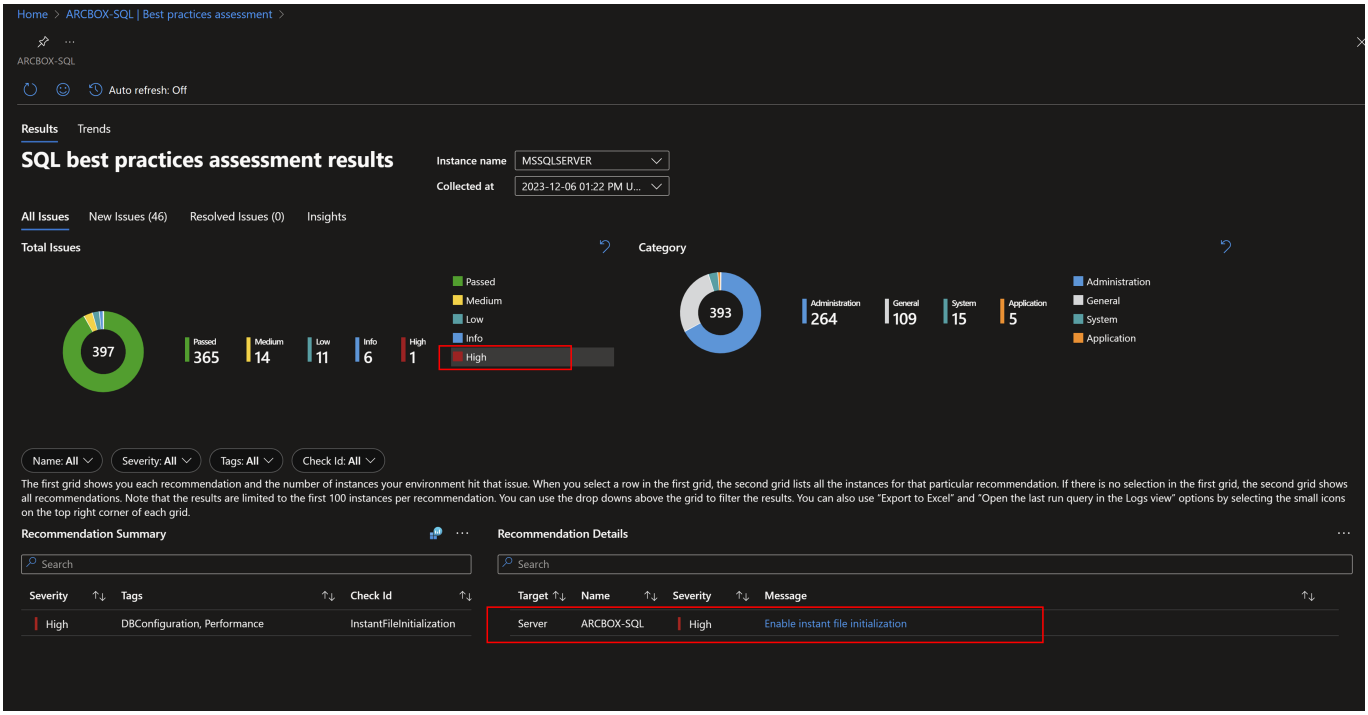
1. [] Once the assessment is completed, click on the assessment to move to the results screen.



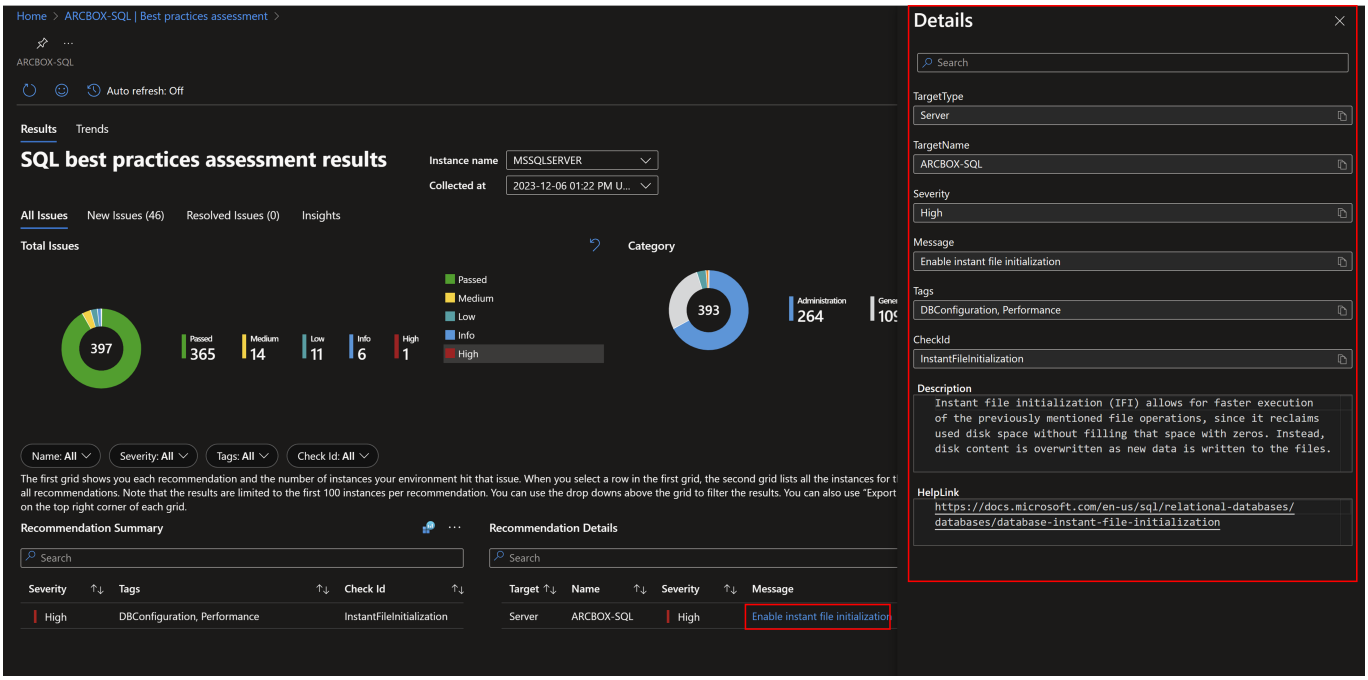
2. [] On the Results page, if there several assessments that are completed, you can choose from *Collected at* dropdown menu. The Results page reports all the issues categorized based on their severity. The recommendations are organized into All, New and Resolved tabs. The tabs can be used to view all the recommendations from the currently selected run, the newer recommendations compared to the previous run, and the resolved recommendations from the previous runs respectively. The tabs help to keep track of the progress between the runs.



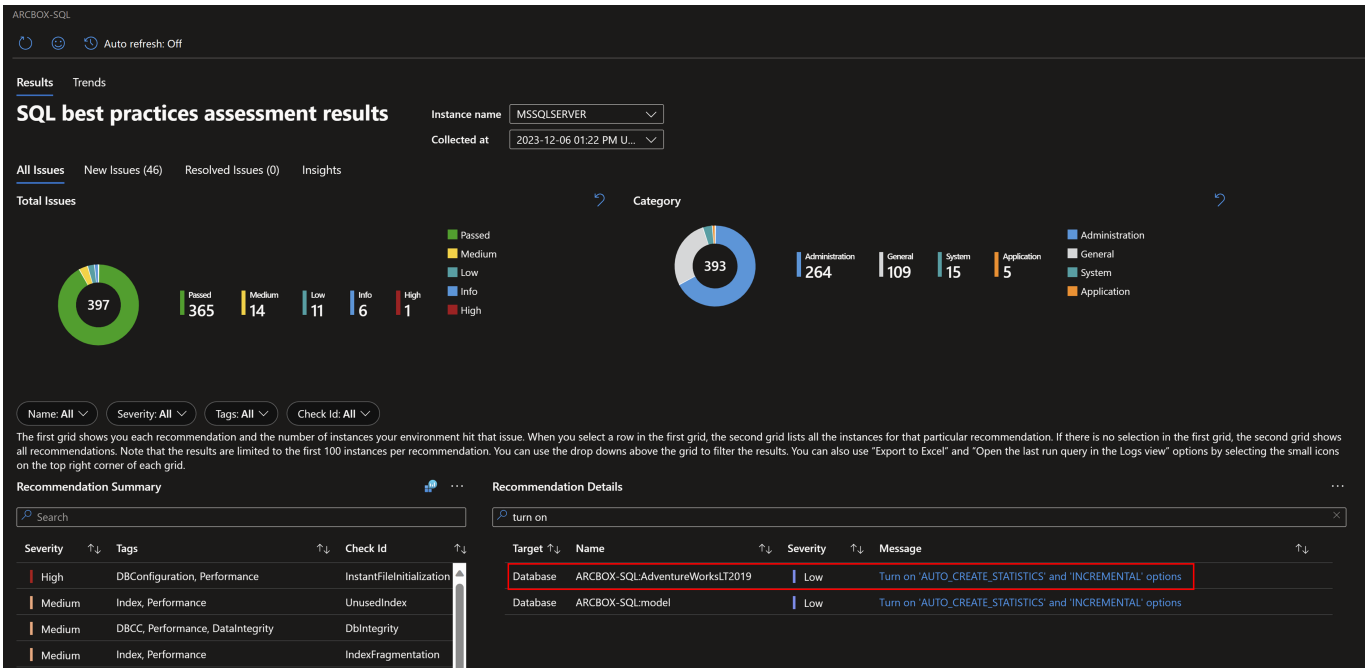
3. [] To filter the issues by high severity, click on "High" on the Total Issues chart. To clear the filter click on high once again. Filtering can be applied by categories as well.



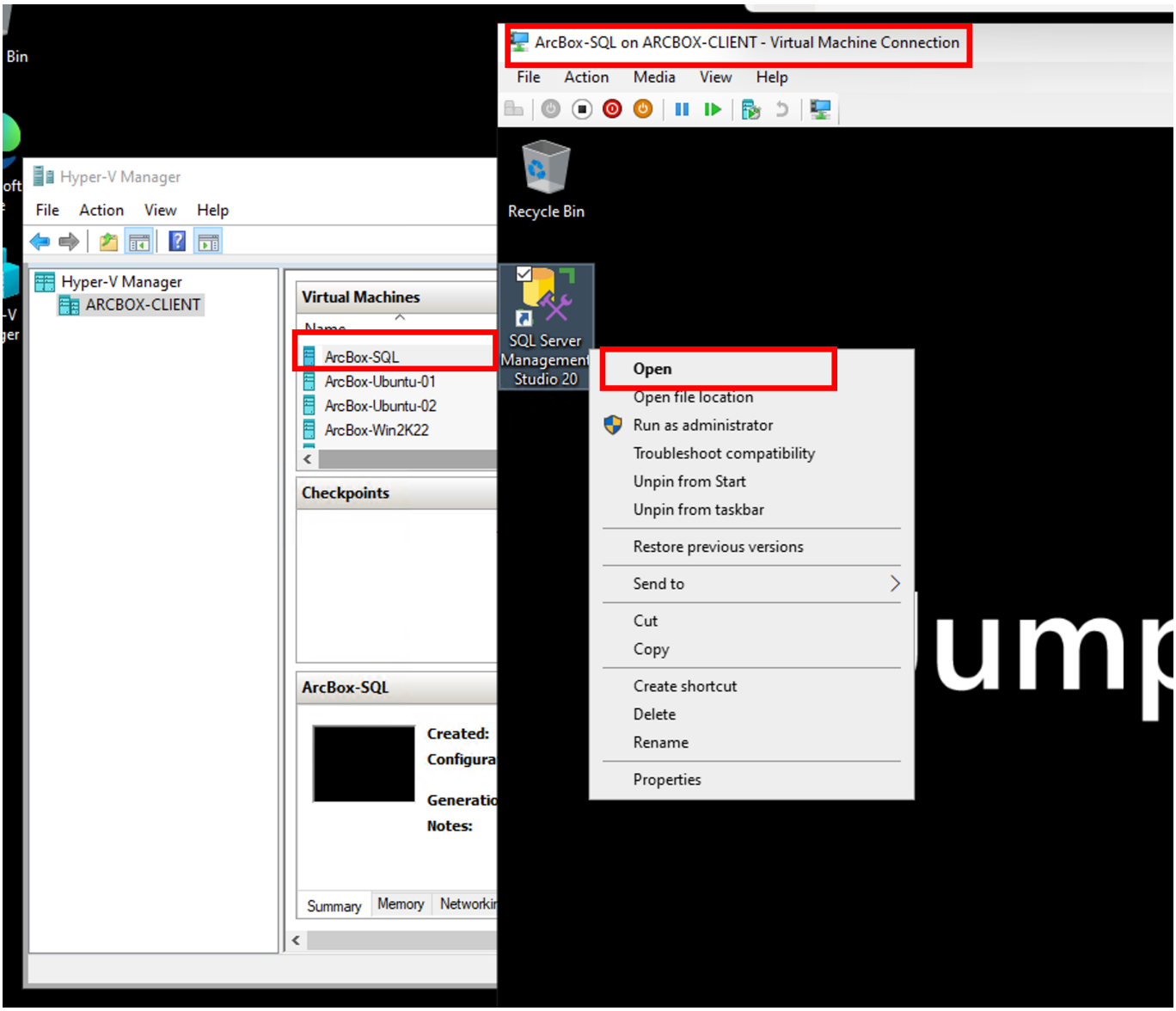
4. [] To view details for a recommendation, in the recommendation summary menu click on the high severity issue, then in the *Recommendation Details* table click on the message item.



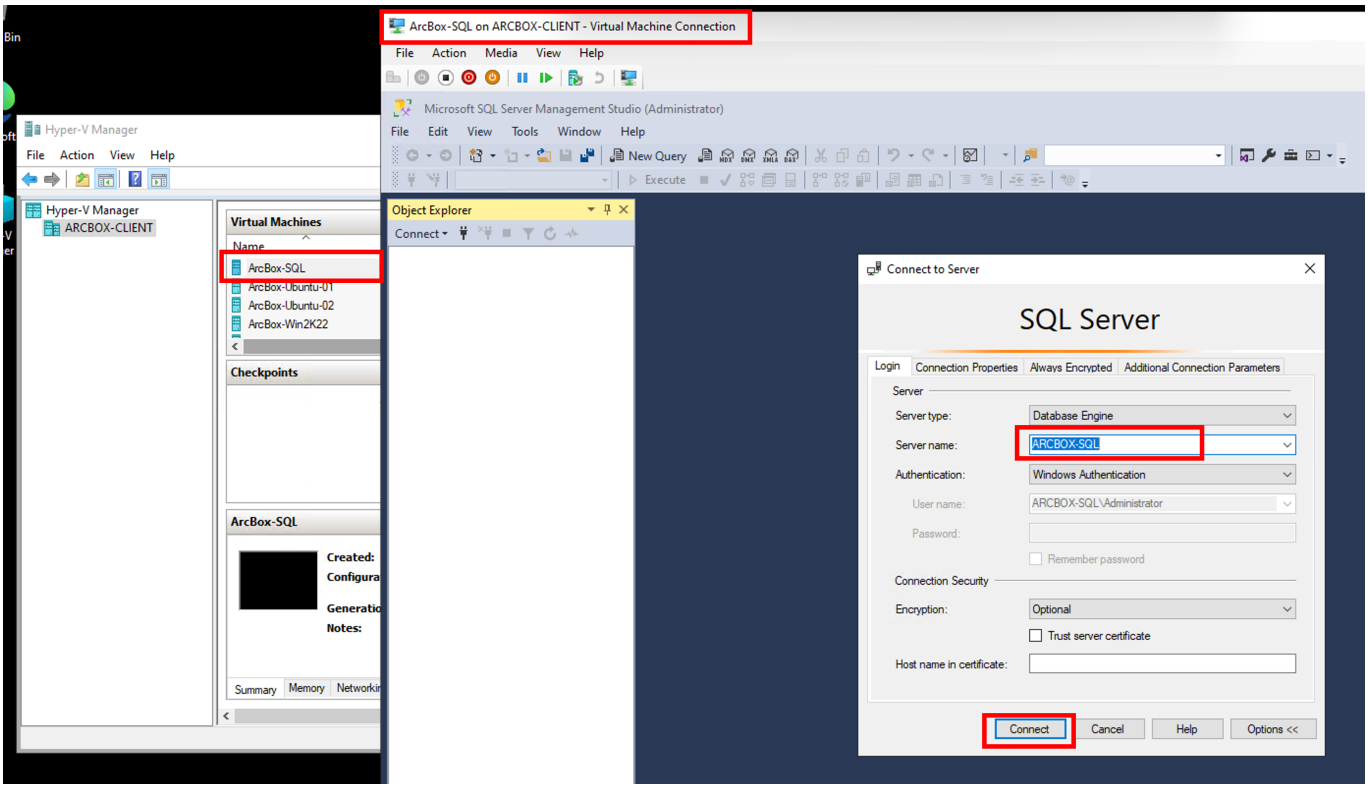
5. [] You are going to address a specific recommendation now. Remove any filters and scroll through the *Recommendation Details* table (or use the associated search field) to find the issue "Turn on 'Auto_Create_Statistics' and 'Incremental' options" for the *AdventureWorks* database.



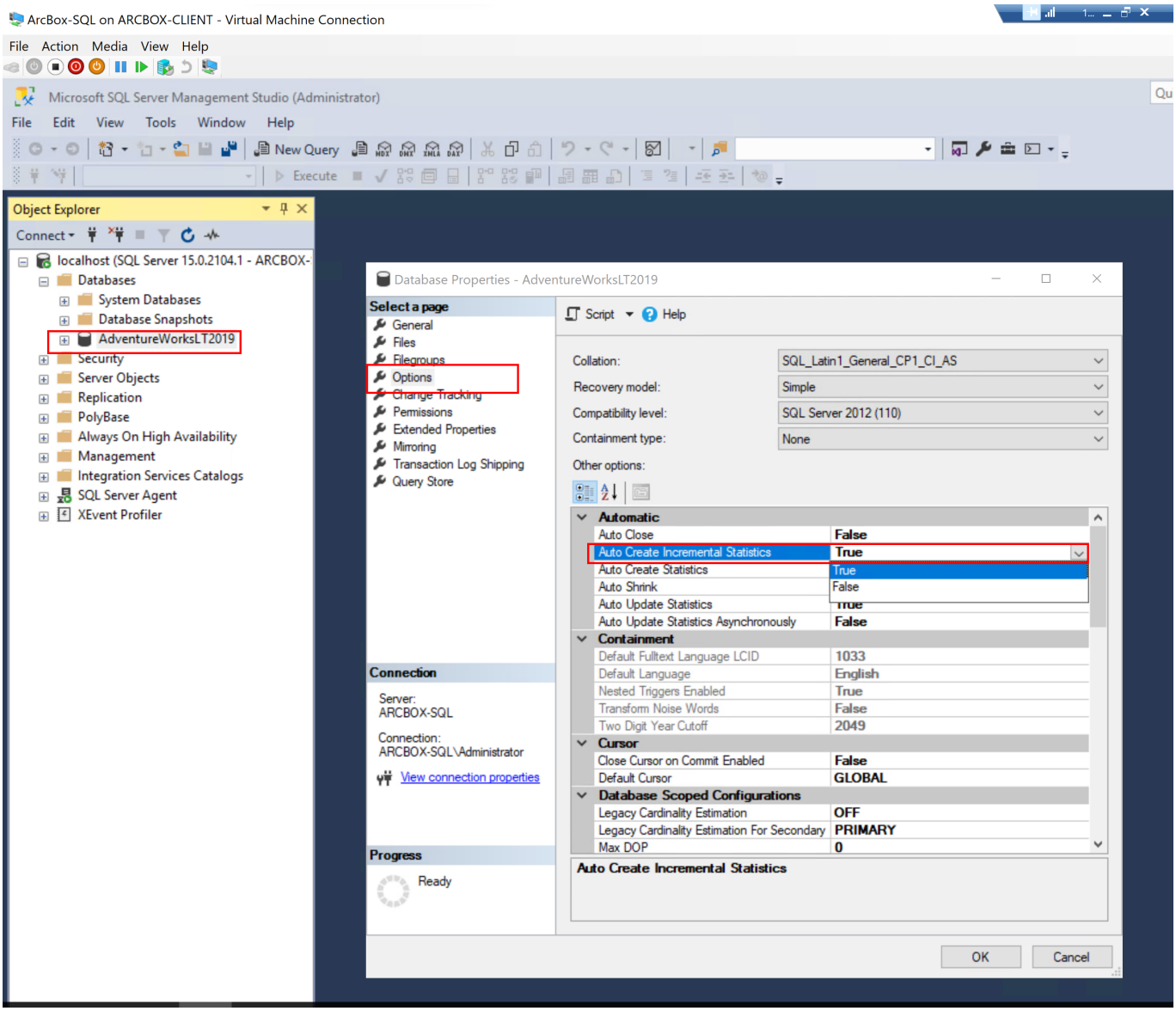
6. [] To Fix the issue "Turn on 'Auto_Create_Statistics' and 'Incremental' options", logon to the ArcBox-Client_ machine and connect to *ArcBox-SQL* from the Hyper-V console (password *JS123!!*). Start the *SQL Server Management Studio* application and connect to the SQL Server instance.



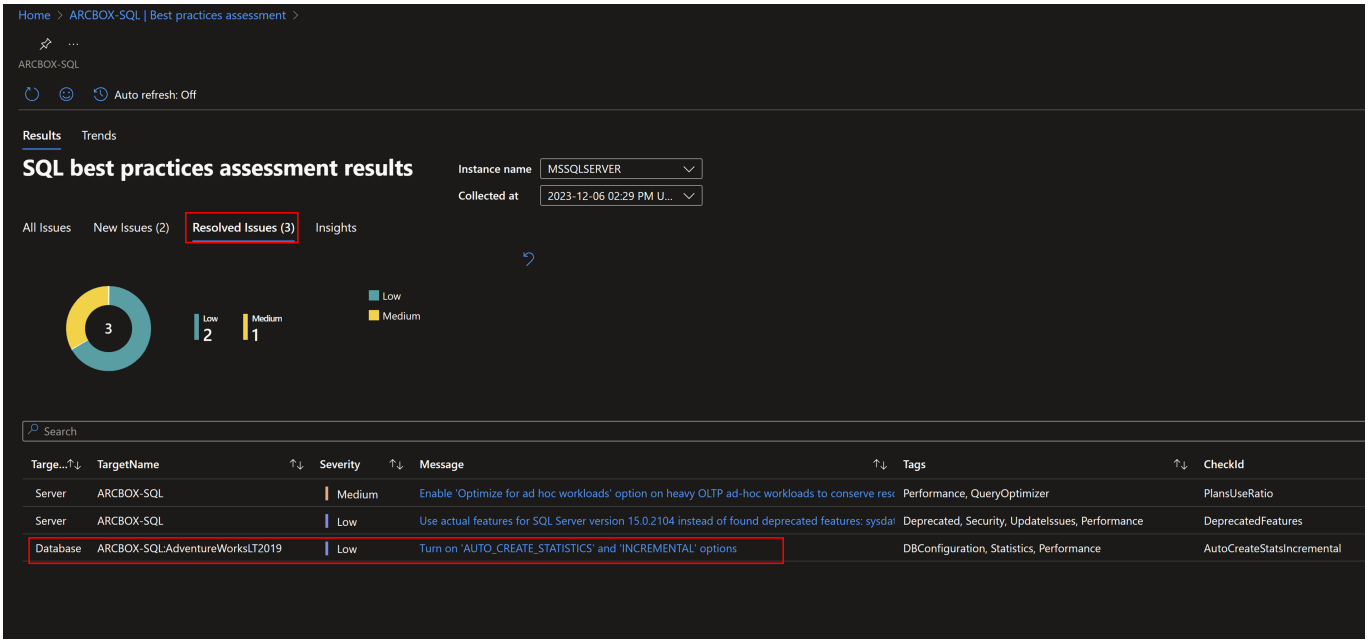
7. [] Connect to the SQL Server instance



8. [] Right-Click on the *AdventureWorksLT2019* database and select the *Properties* then *Options*. Find the *Auto Create Incremental Statistics* option and change it from False to True. Confirm your action by clicking *OK*.



9. [] Rerun assessment and check the resolved issues. (To re-run the assessment, go to the *Best practices assessment* page on the Arc-enabled SQL Server in the Azure portal as you did in the previous exercise). Once the new assessment is complete, go the *Resolved Issues* tab and check that your issues has been resolved.



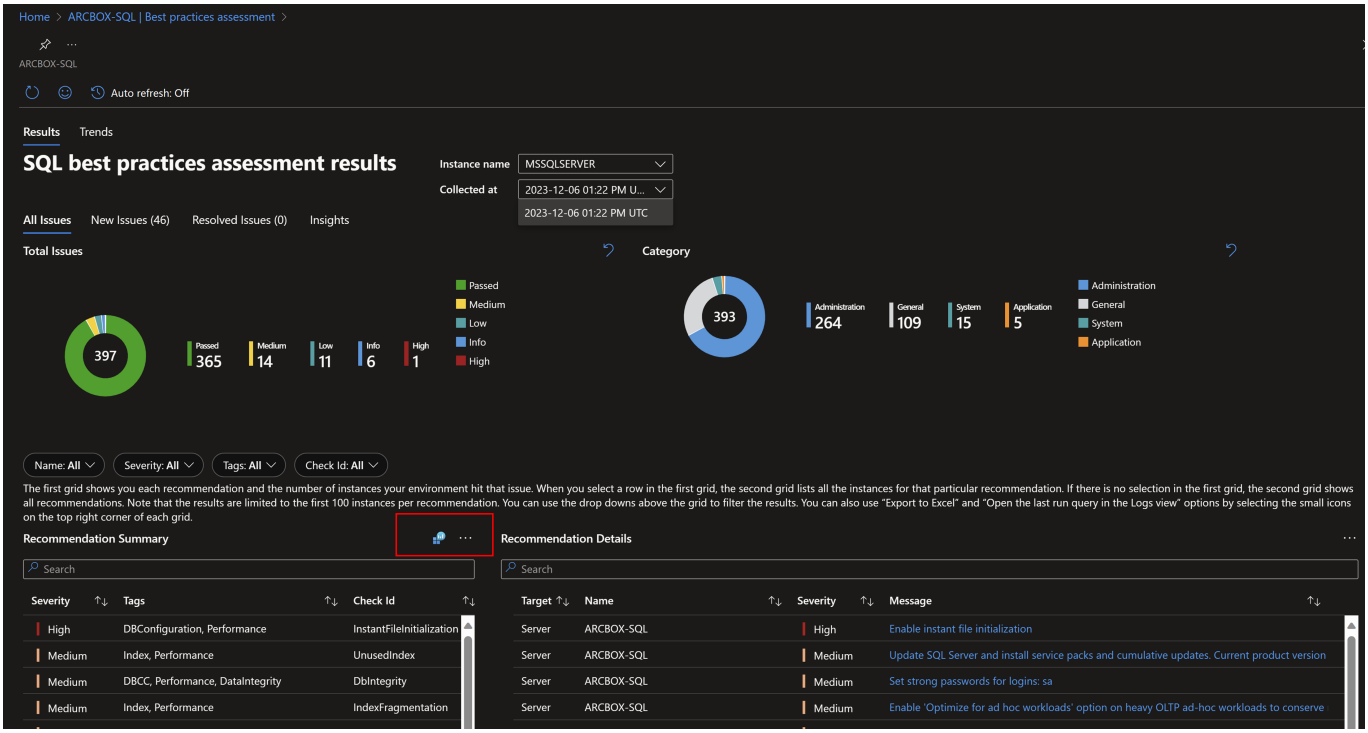
Task 1 has been completed

Click **Next** for the next exercise or **Go back to the main table of content**

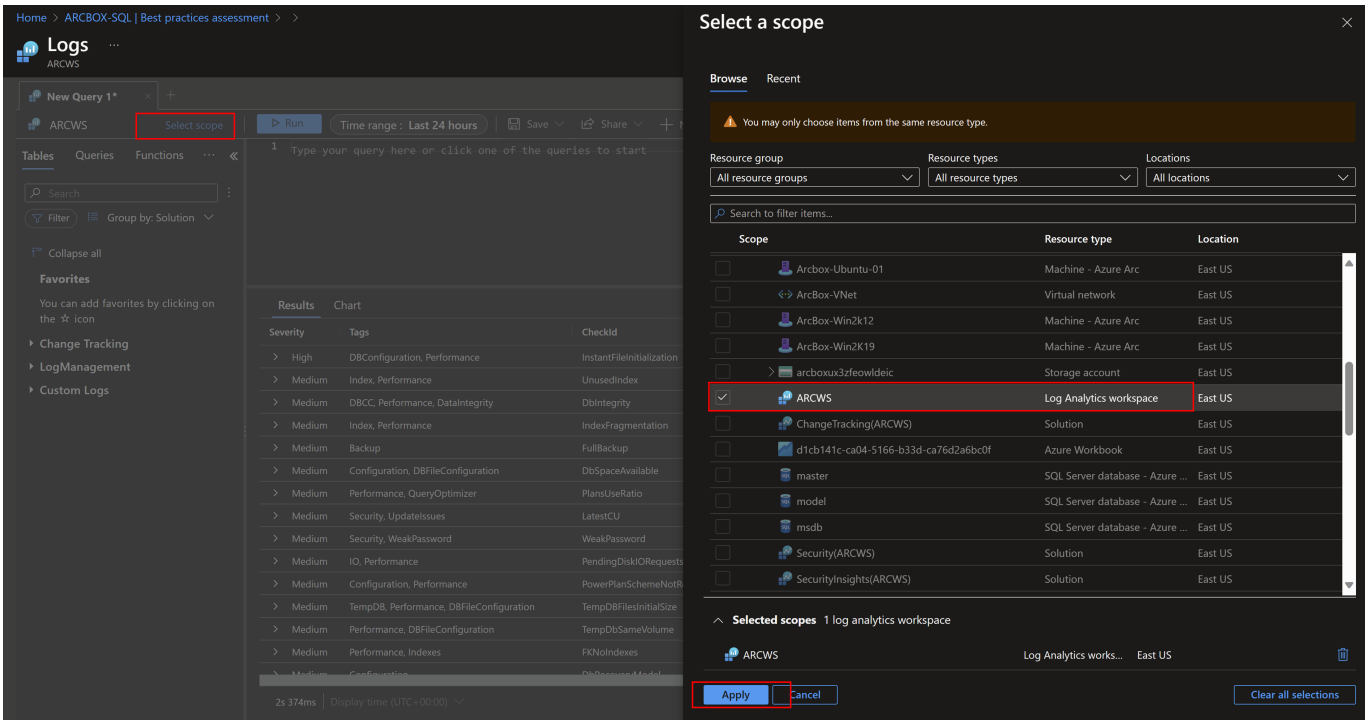
===

Task 2: Use Log Queries with Assessment results

1. [] You can get more detailed insights using Log Analytics Queries. Click on *Query logs* on the top of the grid in assessment results, this will take you to query editor.

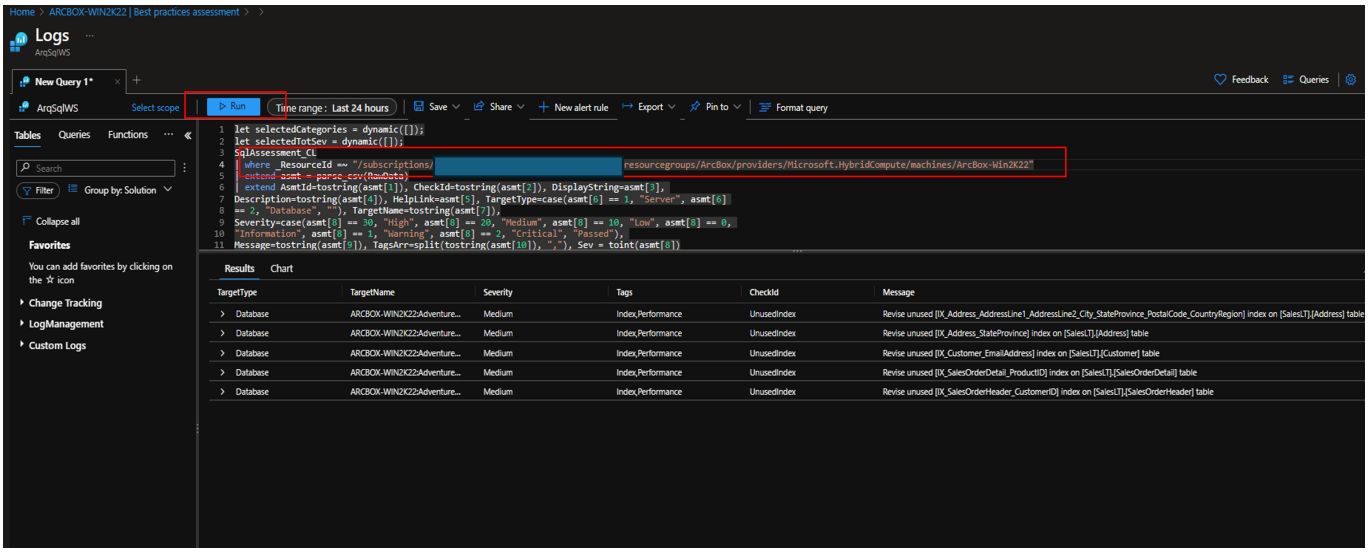


2. [] Click *Select scope* and then Select the specific "Log Analytics workspace" used for uploading assessment data from Arc-enabled SQL Server and click *Apply*.



3. [] Query the logs to gain more insights into your SQL Server environment. For example, you can use the following query to identify all unused indexes in a specific instance. Enter the Subscription Id and Resource group name in the forth line of the query then paste the query into the Query pane and click the *Run* button. Then view the results of your query.

```
let selectedCategories = dynamic([]);
let selectedTotSev = dynamic([]);
SqlAssessment_CL
| where _ResourceId =~
"/subscriptions/XXXXXXXXXXXX/resourcegroups/XXXX/providers/Microsoft.HybridCompute
/machines/ArcBox-SQL"
| extend asmt = parse_csv(RawData)
| extend AsmtId=tostring(asmt[1]), CheckId=tostring(asmt[2]),
DisplayString=asmt[3],
Description=tostring(asmt[4]), HelpLink=asmt[5], TargetType=case(asmt[6] == 1,
"Server", asmt[6]
== 2, "Database", ""), TargetName=tostring(asmt[7]),
Severity=case(asmt[8] == 30, "High", asmt[8] == 20, "Medium", asmt[8] == 10,
"Low", asmt[8] == 0,
"Information", asmt[8] == 1, "Warning", asmt[8] == 2, "Critical", "Passed"),
Message=tostring(asmt[9]), TagsArr=split(tostring(asmt[10]), ","), Sev =
toint(asmt[8])
| where CheckId == "UnusedIndex"
| project
TargetType,
TargetName,
Severity,
Tags=strcat_array(array_slice(TagsArr, 1, -1), ','),
CheckId,
Message
| distinct *
```



Task 2 has been completed

Click **Next** for the next lab or **Go back to the main table of content**