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Optimize Azure Synapse SQL Pools

## Engagement Overview

### Introduction

The Optimize Azure Synapse SQL Pools engagement provides attendees with the knowledge and understanding of how queries are processed in SQL pools and how to optimize workloads for performance. While we may address certain issues during the engagement, the goal is not to fix specific queries, rather the goal is to provide the attendees with knowledge needed to identify and optimize query and workload issues.

### Pre-Requisite Configuration

Using the customer environment for optimization is ideal because we can teach using the customer’s data and experience as an example. In order to use the customer environment to identify and troubleshoot issues, we need to do some pre-requisite configuration.

1. Create a Log Analytics Workspace
   1. In the Azure Portal go to the ‘create a resource’ window

Graphical user interface, text, application, chat or text message

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* 1. Search for “log analytics workspace” and click “create”

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* 1. Select the subscription you want to keep monitoring in
  2. Select the resource group you want to keep monitoring components in or create a new one
  3. Name the instance according to your naming conventions
  4. Select the same region as your SQL Pool

1. Configure the SQL Pool to send data to log analytics
   1. From the main pane of your Azure Synapse Instance, Select ‘Diagnostic Settings’
   2. Select ‘add diagnostic setting’

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* 1. Configure the settings as seen below. We are intentionally leaving DmsWorkers and SqlRequests off because these are very busy DMVs that would increase cost. We do not use these in our dashboards today.

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1. Check that logs are enabled after ~4 hours. You can ask the customer to run this the next day and report back to ensure logs are appearing.
   1. From the main synapse page of your synapse instance, select the ‘logs’ pane

Graphical user interface, application

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* 1. Run the following query after replacing DB name with the proper DB name. If this returns results, then the log configuration is working correctly.

AzureDiagnostics

| where Resource == '<databasename>'

| where Category == 'ExecRequests'

| limit 20

1. This needs to be configured for every instance we will be investigating during our session or every instance you want to configure monitoring for. You can configure them all to go to the same Log analytics workspace. The ‘Resource’ column is how you will identify the different databases when querying.