

**Managing Hot Partitions**

Template Version: 2.0

**Introduction**

During this lab, you will learn how to recognize and overcome a collection with hot partitions.

**Estimated Time**

20 minutes.

**Objectives**

At the end of this lab, you will be able to:

* Import existing Json objects into Cosmos DB using the Azure Cosmos DB Data Migration Tool.
* Recognize hot partitions in Cosmos DB collections.
* Choose an optimal partition key for the data schema and use case.
* Verify a more optimal partition key strategy solves the hot partition problem.

Lab: Managing Hot Partitions

**Exercise 1: Import existing documents into Azure Cosmos DB.**

**Tasks**

**Use the Azure Cosmos DB Data Migration Tool**

1. In a browser, download the tool from: <https://cosmosdbportalstorage.blob.core.windows.net/datamigrationtool/2018.02.28-1.8.1/dt-1.8.1.zip> . Additionally, refer to <https://docs.microsoft.com/en-us/azure/cosmos-db/import-data> for installation instructions and pre-requisites.
2. Once unzipped to desire folder location, run the dtui.exe (or dt.exe for command line) to launch the tool.
3. Supply source information:
   1. Click **Source Information** from the left menu.
   2. Select JSON file(s) from the **Import from** dropdown.
   3. Choose **Add Files** and navigate to the workshop materials, Sample Data/profile\_data folder.
   4. Select **profile\_data.json** and confirm.
4. Supply target information:
   1. Click **next** or click **Target Information** from the left menu.
   2. Select **DocumentDB – Sequential record import (partitioned collection)**
   3. Add a connection string with the following values: **AccountEndpoint**=<account\_uri>;**AccountKey**=<account\_pkey>;**Database**=<database\_Id>
   4. Set Collection to **User Profiles.**
   5. Set Partition Key to **/eyeColor**
   6. Set Collection Throughput to **10,000** (10000).
   7. Choose Next->Next->Import.

**Verify Import and Explore Collection Storage Metrics**

1. Within the Azure Portal, navigate to the Cosmos DB Account used in section 1.
2. Navigate to the Data Explorer, expand the database and collection used in the import.
3. Click on Documents to verify the import was successful. Note: /**eyeColor** should be displayed beside **id** in the document list.
4. Navigate to monitoring section of the Azure Cosmos DB Account menu, and select **Metrics**
5. Select the **Storage** tab at the top of the Metric blade.
6. Choose the Database and User Profiles collection to display the related metric graphs.
7. Notice the **Data + Index storage consumed per partition key range** and **Data + Index storage consumed by top partition keys** indicated a hot partition related to high frequency of **Brown** eye color within the **eyeColor** partition key.

**Solve the Hot Partition Issue**

1. Using the **Data Explorer**, examine the document properties for a more optimal partition key.
2. Repeat Task 1 with the following changes:
   1. Collection Id: **User Profiles Fixed**
   2. Partition Key: **Choose an optimal key for balanced storage and use.**
3. Navigate to monitoring section of the Azure Cosmos DB Account menu, and select **Metrics**
4. Select the **Storage** tab at the top of the Metric blade.
5. Choose the Database and **User Profiles Fixed** collection to display the related metric graphs.
6. Use the **Data + Index storage consumed per partition key range** and **Data + Index storage consumed by top partition keys** metrics to compare results.
7. Did you solve the hot partition issue?