# Module title: Store data in Azure Premium Blob Storage

## Learner roles

* administrator
* solution architect
* data engineer
* student
* technology manager

## Learner level

* Intermediate: Material that assumes some knowledge but little in-depth understanding of the topic. Provides a detailed overview of a topic's sub-areas.

## Product(s) taught

* Microsoft Azure Premium Storage

## Prerequisites

To get the best learning experience from this module, you should have:

1. A basic understanding of Azure Blob Storage.
2. Familiarity with storage performance characteristics.

## Module topic statement

Azure Premium Blob Storage helps customers optimize performance of their business-critical workloads that rely on low and consistent latency.

## Subtasks in this module

|  |  |  |  |  |
| --- | --- | --- | --- | --- |
| Subtask | What part of the introduction scenario does this subtask satisfy? | How will you assess it: Exercise or Knowledge Check? | Which learning objective(s) does this help meet? | Does the subtask have enough learning content to justify an entire unit? If not, which subtask will you combine it with? |
| Describe Azure Blob Storage performance indicators | The entire scenario | Knowledge check | Describe performance characteristics of Azure Blob Storage | Yes |
| Describe high performance workloads that benefit from Azure Blob Premium Storage | The entire scenario | Knowledge check | Identify the use cases of Azure Premium Blob Storage | Yes |
| Optimize cost efficiency of Azure Blob Storage | The entire scenario | Knowledge check | Optimize and validate performance benefits with Azure Premium Blob Storage | Yes |

## Exercise(s)

|  |  |  |
| --- | --- | --- |
| Exercise title | What will students do in this exercise? Which unit’s content will the exercise support? | Describe any feasibility questions or concerns. |
| Validate performance benefits of Azure Premium Blob Storage | Using Block Blob Latency Profiler (<https://github.com/jcrobins/storage-blob-dotnet-latency-profiler>) to assess the performance benefits of Azure Premium Blob Storage | Bring your own subscription (BYOS) required |

## Demonstration video(s)

|  |  |  |
| --- | --- | --- |
| Video title | What tasks or skills will the video demonstrate? The video will go in which unit? | Describe any feasibility questions or concerns. |
|  |  |  |

## Module learning objectives

After completing this module, you’ll be able to:

* Describe the performance characteristics of Azure Blob Storage.
* Identify the use cases of Azure Premium Blob Storage and explain why Premium tier is the optimum option for these specific workloads.
* Optimize and validate performance benefits with Azure Premium Blob Storage.

## Estimated module duration

45 minutes

## Module outline of units

### Summary of units

|  |  |  |
| --- | --- | --- |
| Unit number | Unit title | Duration |
| 1 | Introduction | 3 minutes |
| 2 | Describe Azure Blob Storage performance indicators | 8 minutes |
| 3 | Examine high performance workloads that benefit from Azure Blob Premium Storage | 8 minutes |
| 4 | Optimize cost efficiency of Azure Blob Storage | 8 minutes |
| 5 | Validate performance benefits of Azure Premium Blob Storage | 13 minutes |
| 6 | Knowledge Check | 3 minutes |
| 7 | Summary | 2 minutes |

## Unit descriptions

### Unit 1: Introduction

Type of unit:Introduction unit

Estimate unit duration:3 minutes

### Example scenario

Suppose you work for a media company that stores, processes, and maintains large volumes of online content for its subscribers. For majority of the data, the company relies on Azure Blob Storage as the persistent, readily accessible, and inexpensive data store.

However, as the number of its customers grows, the company is observing an alarming increase in customer complaints about delays associated with downloading online content. At the same time, your management team starts voicing its concerns about an unexpected increase in storage transaction-related charges.

The highly competitive nature of the online business forces your company to reevaluate its storage strategy to make its service more appealing to customers, while, at the same time, looking for cost saving opportunities.

As a cloud administrator responsible for optimizing the use of Azure resources, you need to identify the solution that would reconcile these two seemingly conflicting goals. To accomplish this objective, you decide to explore the performance characteristics and the pricing model of Azure Blob Storage, focusing in particular on the use of Azure Premium Blob Storage.

### What will we be doing?

In this module, you’ll explore the performance characteristics and benefits offered by Azure Premium Blob Storage and identify scenarios where these benefits are particularly relevant. You’ll also review the steps in an exercise that will validate these benefits by using a custom testing application.

### What is the main goal?

By the end of this module, you’ll be able to describe the benefits of Azure Premium Blob Storage, identify business critical workloads that can utilize these benefits, and demonstrate how to validate these benefits.

### Unit 2: Describe Azure Blob Storage performance indicators

Type of unit: Learning content unit

Estimate unit duration: 8 minutes

#### Demonstration video: None

#### Learning objectives targeted

After completing this unit, you should be able to:

* Describe the performance characteristics of Azure Blob Storage.

#### Key content per learning objective

Describe the performance characteristics of Azure Blob Storage.

Describe the benefits of Azure Blob Storage performance characteristics with respect to latency.

### Unit 3: Describe high performance workloads that benefit from Azure Blob Premium Storage

Type of unit: Learning content unit

Estimate unit duration: 8 minutes

#### Demonstration video: None

#### Learning objectives targeted

After completing this unit, you should be able to:

* Identify the use cases of Azure Premium Blob Storage and explain why Premium tier is the optimum option for these specific workloads.

#### Key content per learning objective

* Identify the use cases of Azure Premium Blob Storage and explain why Premium tier is the optimum option for these specific workloads.
  + Single digit ms time to first byte
  + Interactive editing applications
  + Data visualization software
  + E-commerce businesses
  + Interactive analytics
  + Data processing pipelines
  + Internet of things (IoT)
  + Machine learning
  + Real-time streaming analytics

### Unit 4: Optimize and validate performance benefits with Azure Premium Blob Storage

Type of unit: Learning content unit

Estimate unit duration: 8 minutes

#### Demonstration video: None

#### Learning objectives targeted

After completing this unit, you should be able to:

* Optimize and validate performance benefits with Azure Premium Blob Storage.

#### Key content per learning objective

Optimize and validate performance benefits with Azure Premium Blob Storage:

* Define cost effectiveness.
* Evaluate cost effectiveness.

### Unit 5: Validate the performance benefits of Azure Premium Blob Storage

Type of unit: Exercise unit

Estimate unit duration: 13 minutes

#### Demonstration video: None

#### Learning objectives targeted

After completing this unit, you should be able to:

* Optimize and validate performance benefits with Azure Premium Blob Storage.

#### Key content per learning objective

Optimize and validate performance benefits with Azure Premium Blob Storage:

* Create an Azure Premium Blob Storage account.
* Validate the performance benefits of Azure Premium Blob Storage by using a custom load testing application.

### Unit 6: Knowledge check

Type of unit: Knowledge check unit

Estimate unit duration:3 mins

### Unit 7: Summary

Type of unit: Summary unit

Estimate unit duration: 2 minutes

#### Resolution of module problem

You learned how you can leverage Azure Premium Blob Storage to help your organization reconcile the need to improve the customer satisfaction and optimize the cost. Following your recommendation, the company successfully transitioned to Azure Premium Blob Storage for its most popular services, reducing their latency and minimizing the corresponding transactional charges.

Your recommendations also included guidance regarding the choice between the Premium and Standard performance tiers. This will help your company further optimize its storage strategy.

#### Further learning links

* <https://docs.microsoft.com/azure/storage/blobs/storage-blob-block-blob-premium>
* <https://github.com/jcrobins/storage-blob-dotnet-latency-profiler>