BUS5001 - CLOUD PLATFORMS AND ANALYTICS - WORKSHOP

Azure Blob Storage

Setting up environment in Azure Blob storage

This tutorial will give you a hands-on introduction for using a cloud platform to create a storage by walking you through a use case for creating a storage instance using Azure Blob storage.

IMPORTANT:

- The services covered in this course are only a subset of a much larger family of Azure services. Similar outcomes can be achieved by leveraging other services and/or features not covered by this workshop. Specific business requirements may also ask for the use of different services or features not included in this workshop.
- Some concepts presented in this course can be quite complex and you may need to seek for more information from different sources to compliment your understanding of the Azure services covered.

Document Structure

This document contains detailed step-by-step instructions on how to Create a storage account for Blob storage and configure it for static web hosting using the Azure portal. It's recommended you carefully read the detailed description contained in this document for a successfully complete this tutorial.

You will see the label **IMPORTANT** whenever a there is a critical step. Please pay close attention to the instructions given.

Prerequisites

- An Azure account and subscription. If you don't have a subscription, sign up for a free Azure account using your La Trobe student account.

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Introduction

Azure Blob storage is Microsoft's object storage solution for the cloud. Blob storage is optimized for storing massive amounts of unstructured data. Unstructured data is data that doesn't adhere to a particular data model or definition, such as text or binary data.

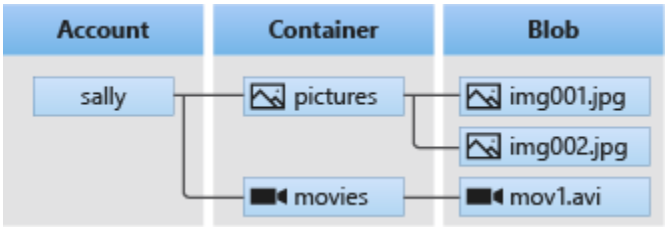
Blob storage is designed for:

- Serving images or documents directly to a browser.
- Storing files for distributed access.
- Streaming video and audio.
- Writing to log files.
- Storing data for backup and restore, disaster recovery, and archiving.
- Storing data for analysis by an on-premises or Azure-hosted service.

Blob storage offers three types of resources:

1. **The storage account**: a unique namespace in Azure for your data. Every object that you store in Azure Storage has an address that includes your unique account name. The combination of the account name and the Blob Storage endpoint forms the base address for the objects in your storage account.
2. **A container in the storage account**: organizes a set of blobs, similar to a directory in a file system. A storage account can include an unlimited number of containers, and a container can store an unlimited number of blobs.
3. **A blob in a container**: Azure Storage supports three types of blobs:
    a. **Block blobs** store text and binary data. Block blobs are made up of blocks of data that can be managed individually. Block blobs can store up to about 190.7 TiB.
    b. **Append blobs** are made up of blocks like block blobs but are optimized for append operations. Append blobs are ideal for scenarios such as logging data from virtual machines.
    c. **Page blobs** store random access files up to 8 TiB in size. Page blobs store virtual hard drive (VHD) files and serve as disks for Azure virtual machines. For more information about page blobs, see Overview of Azure page blobs.

The following diagram shows the relationship between these resources.



As you progress through this tutorial, you'll learn these basic steps:

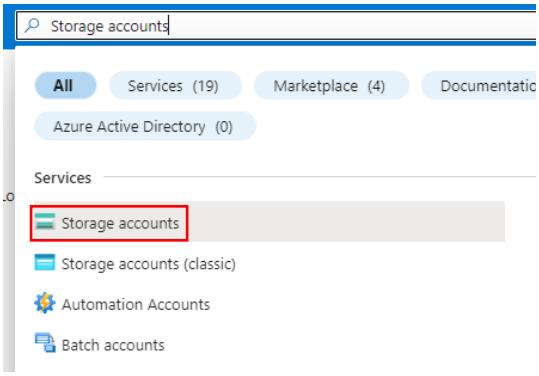
- Create a storage account
- Host a static website

Create a storage account using Azure Portal

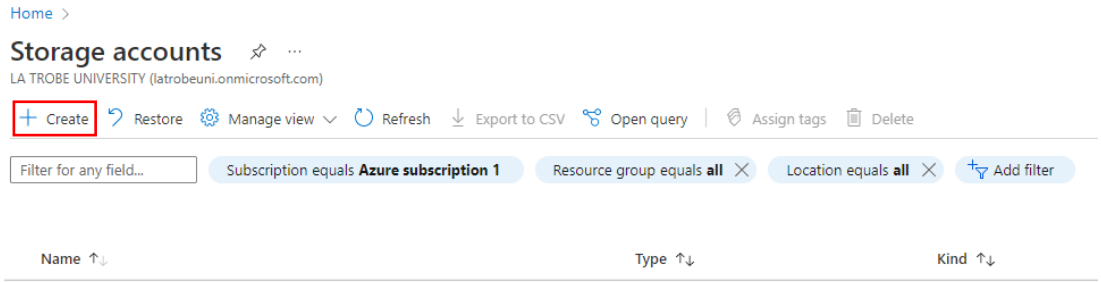
A storage account is an Azure Resource Manager resource. Resource Manager is the deployment and management service for Azure. For more information, see Azure Resource Manager overview.

Every Resource Manager resource, including an Azure storage account, must belong to an Azure resource group. A resource group is a logical container for grouping your Azure services. When you create a storage account, you have the option to either create a new resource group or use an existing resource group. This how-to shows how to create a new resource group.

1. Sign in to the Azure portal with your Azure account.
2. Search for "Storage accounts" and select **Storage accounts**.



3. On the Storage accounts page, select Create.

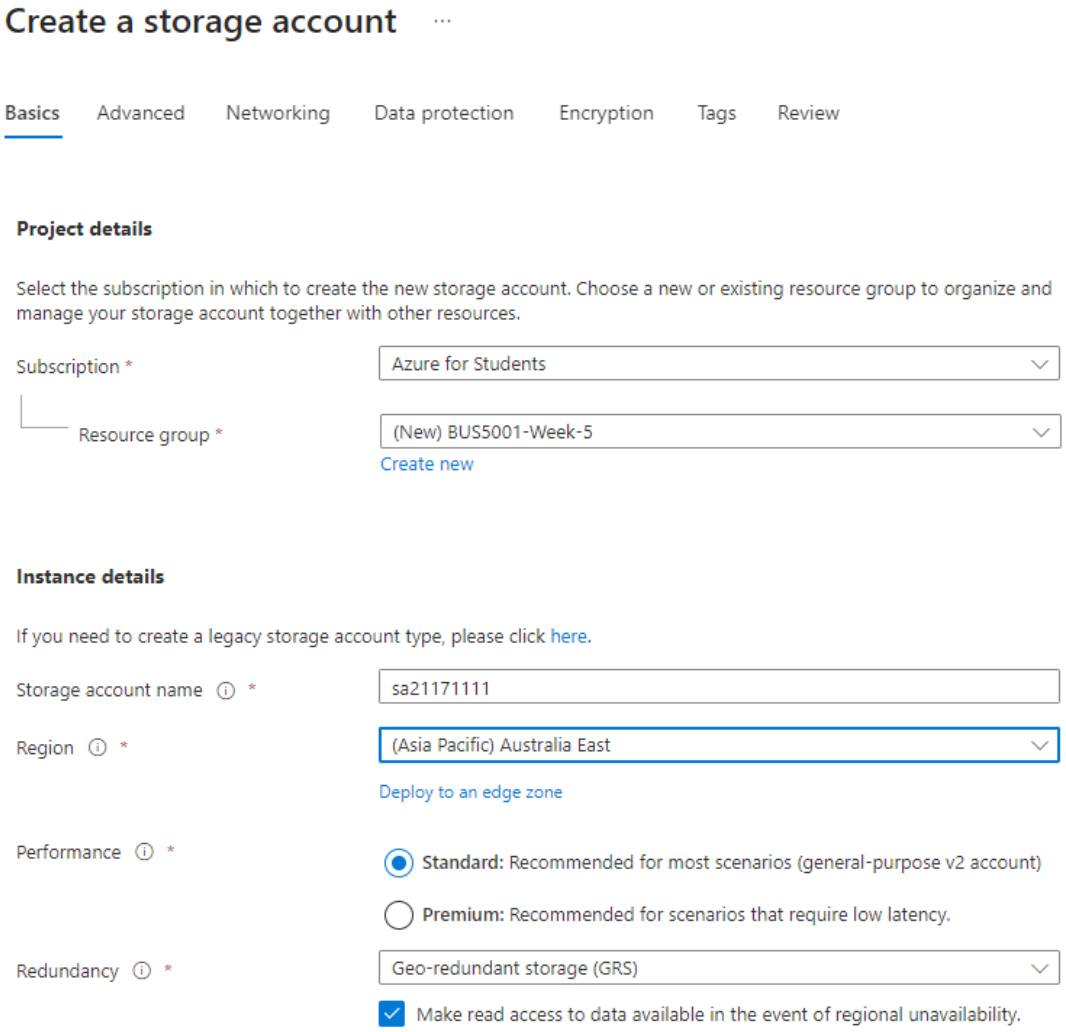


4. On the **Create a storage account** pane, on the **Basics** tab, provide the following basic information about your storage account:

Property	Required	Value	Description
Subscription	Yes	*<Azure-subscription-name>*	Your Azure subscription name. Select **Azure for Students**
Resource Group	Yes	*<Azure-resource-group-name>*	The Azure resource group where you create your logic app and related resources. This name must be unique across regions and can contain only letters, numbers, hyphens (-), underscores (_), parentheses (**()**), and periods (**.**).

Property	Required	Value	Description
			You can create a new resource group named **BUS5001-Week-5**.
Storage account name	Yes	*<storage-account-name>*	Your logic app name, which must be unique across regions and can contain **only lowercase letters, and numbers**. You can have your logic app named *sa<your_student_ID>*.
Region	Yes	*Australia East*	The Azure datacenter region for storing your app's information. This tutorial deploys the sample logic app to the **Australia East** region in Azure.
Performance	Yes	*Standard*	This type of account is recommended by Microsoft for most scenarios. For more information, see Types of storage accounts.
Redundancy	Yes	*Geo-redundant storage (GRS)*	In geo-redundant configurations (GRS), Your data is replicated to a data centre in a different region. For more information about redundancy configurations, see Azure Storage redundancy.

5. When you're done, your settings look similar to this version:



6. When you're ready, select **Review**.
7. On the validation page that appears, confirm all the information that you provided, and select **Create**.

Host a Static web site on Blob storage

In this section, you'll learn how to build and deploy a static website to Azure Storage. When you're finished, you will have a static website that users can access publicly.

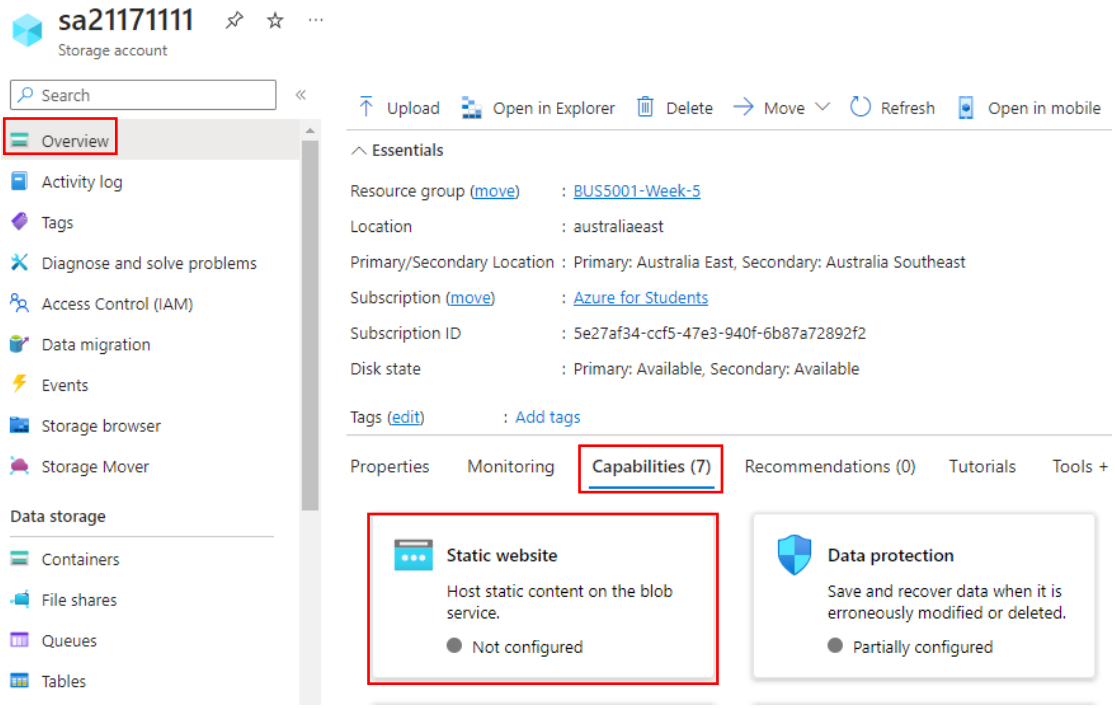
In this tutorial, you learn how to:

1. Configure static website hosting
2. Deploy a Hello World website

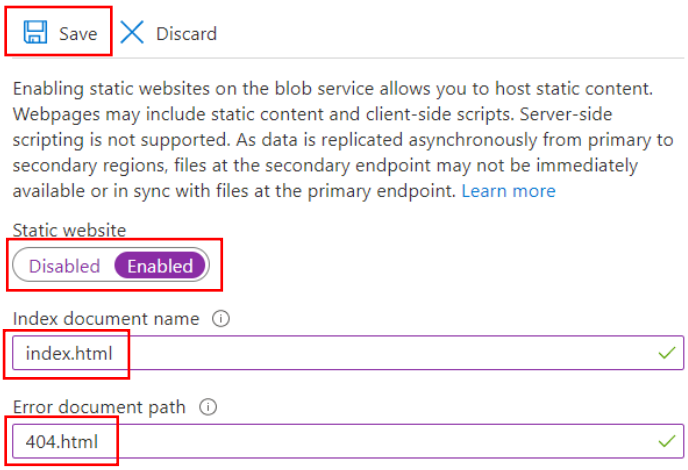
Enable static website hosting

Static website hosting is a feature that you have to enable on the storage account.

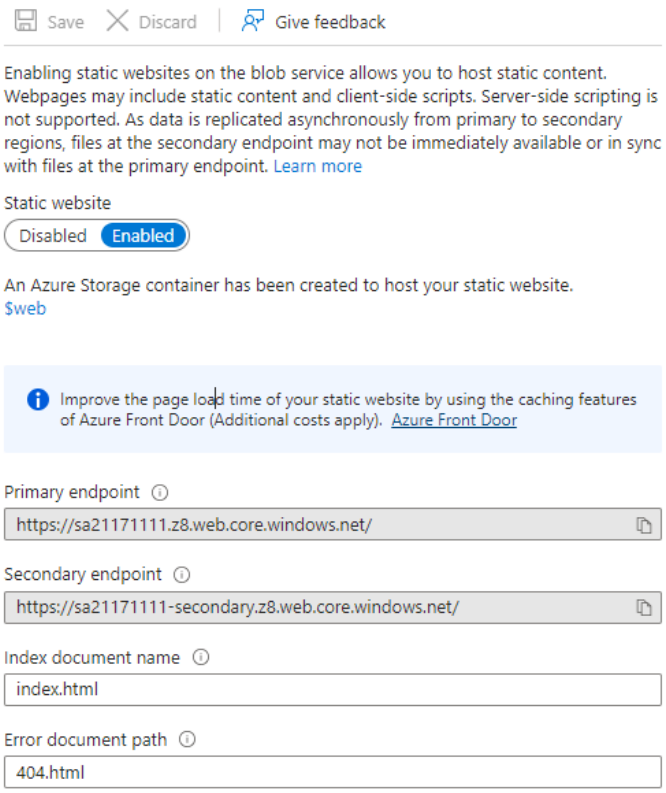
1. Locate your storage account and select it to display the account's **Overview** pane.
2. In the **Overview** pane, select the **Capabilities** tab. Next, select **Static website** to display the configuration page for the static website.



3. Select **Enabled** to enable static website hosting for the storage account.
4. In the **Index document name** field, specify a default index page (For example: index.html). The default index page is displayed when a user navigates to the root of your static website.
5. In the **Error document path** field, specify a default error page (For example: 404.html). The default error page is displayed when a user attempts to navigate to a page that does not exist in your static website.
6. Click **Save** to finish the static site configuration.



7. A confirmation message is displayed. Your static website endpoints and other configuration information are shown within the **Overview** pane.

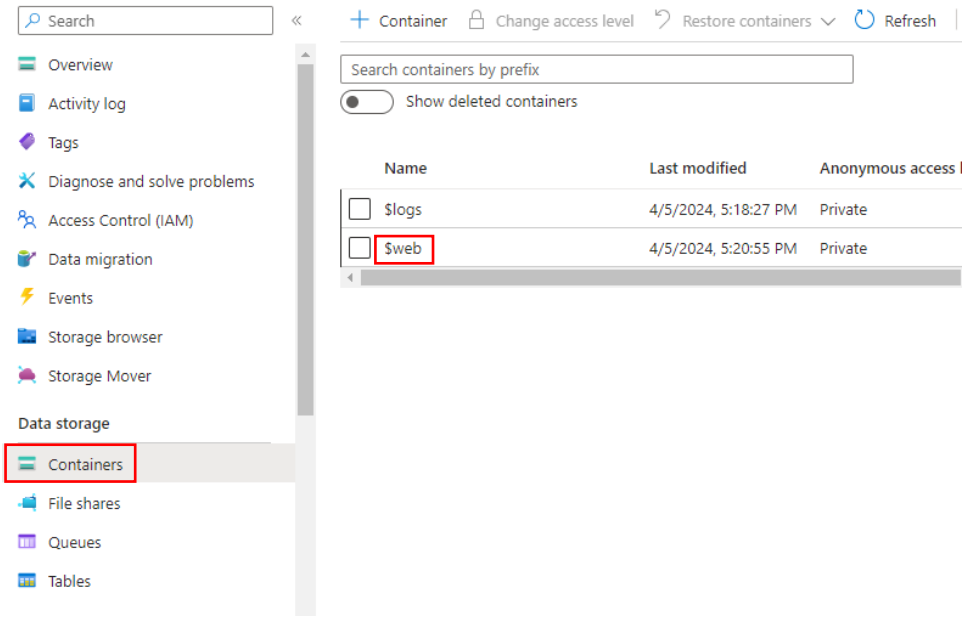


8. Copy the **Primary endpoint** to view your website at the end of the tutorial after uploading the html files.

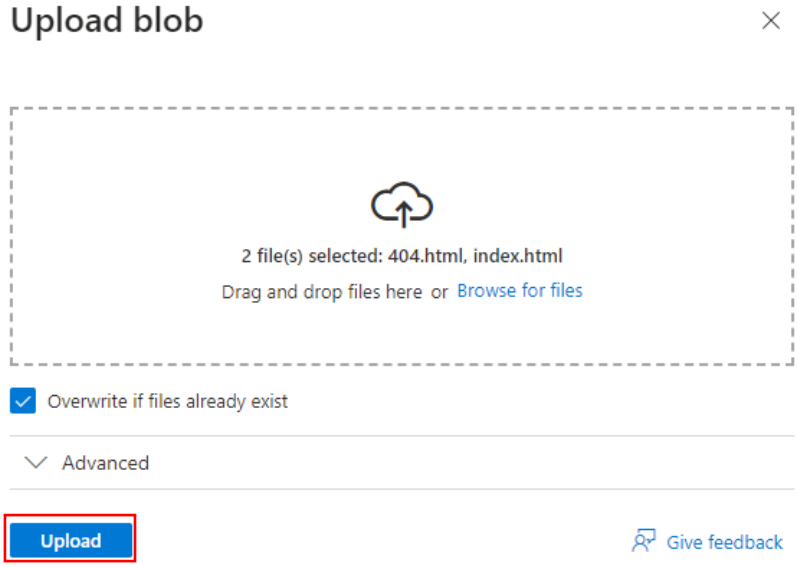
Upload files

The following instructions show you how to upload files by using the Azure portal. You could also use AzCopy, PowerShell, CLI, or any custom application that can upload files to the $web container of your account.

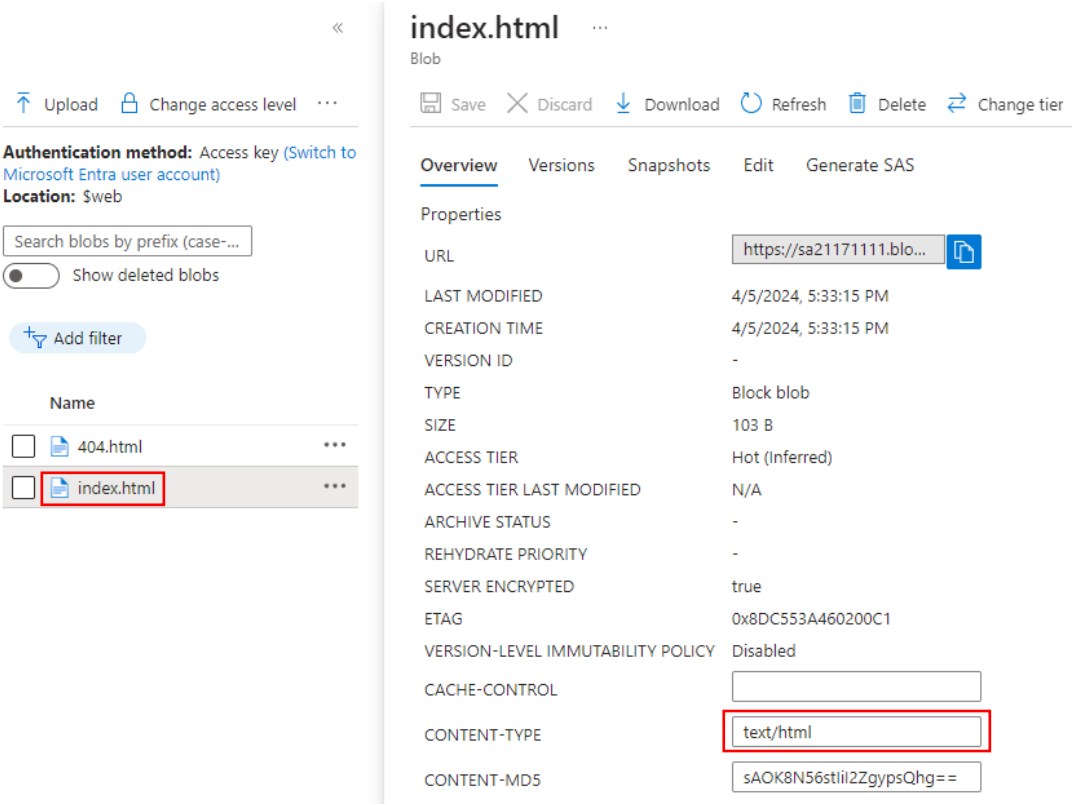
1. In the Azure portal, select **Containers** in the left navigation pane to display the list of containers.
2. In the **Containers** pane, select the **$web** container to open the container's **Overview** pane.



3. In the **Overview** pane, select the **Upload** icon to open the Upload blob pane. Next, upload the files **(you can download the index.html and 404.html files from LMS)** in the **Upload blob** pane. Optionally, select the **Overwrite if files already exist** checkbox and select **Upload**.



4. Since we intend for the browser to display the contents of file, make sure that the content type of that file is set to *text/html*. To verify this, select the name of the blob you uploaded in the previous step to open its **Overview** pane. Ensure that the value is set within the **CONTENT-TYPE** property field.



Access hosted website

Access the **Primary endpoint** via the browser to see the website that you have hosted.