# Azure Storage

* The Azure Storage platform is Microsoft's cloud storage solution for modern data storage scenarios.
* Azure Storage offers highly available, massively scalable, durable, and secure storage for a variety of data objects in the cloud.
* Azure Storage data objects are accessible from anywhere in the world over HTTP or HTTPS via a REST API.
* Azure Storage also offers client libraries for developers building applications or services with .NET, Java, Python, JavaScript, C++, and Go.

# Benefits of Azure Storage

Azure Storage services offer the following benefits for application developers and IT professionals

* **Durable and highly available.** Redundancy ensures that your data is safe in the event of transient hardware failures. You can also opt to replicate data across data centers or geographical regions for additional protection from local catastrophe or natural disaster. Data replicated in this way remains highly available in the event of an unexpected outage.
* **Secure.** All data written to an Azure storage account is encrypted by the service. Azure Storage provides you with fine-grained control over who has access to your data.
* **Scalable.** Azure Storage is designed to be massively scalable to meet the data storage and performance needs of today's applications.
* **Managed.** Azure handles hardware maintenance, updates, and critical issues for you.
* **Accessible.** Data in Azure Storage is accessible from anywhere in the world over HTTP or HTTPS. Microsoft provides client libraries for Azure Storage in a variety of languages, including .NET, Java, Node.js, Python, PHP, Ruby, Go, and others, as well as a mature REST API. Azure Storage supports scripting in Azure PowerShell or Azure CLI. And the Azure portal and Azure Storage Explorer offer easy visual solutions for working with your data.

## Azure Storage data services

The Azure Storage platform includes the following data services:

* [Azure Blobs](https://docs.microsoft.com/en-us/azure/storage/blobs/storage-blobs-introduction): A massively scalable object store for text and binary data. Also includes support for big data analytics through Data Lake Storage Gen2.
* [Azure Files](https://docs.microsoft.com/en-us/azure/storage/files/storage-files-introduction): Managed file shares for cloud or on-premises deployments.
* [Azure Queues](https://docs.microsoft.com/en-us/azure/storage/queues/storage-queues-introduction): A messaging store for reliable messaging between application components.
* [Azure Tables](https://docs.microsoft.com/en-us/azure/storage/tables/table-storage-overview): A NoSQL store for schemaless storage of structured data.
* [Azure Disks](https://docs.microsoft.com/en-us/azure/virtual-machines/managed-disks-overview): Block-level storage volumes for Azure VMs.
* Each service is accessed through a storage account.

## Sample scenarios for Azure Storage services

The following table compares Files, Blobs, Disks, Queues, and Tables, and shows example scenarios for each.

| **Feature** | **Description** | **When to use** |
| --- | --- | --- |
| **Azure Files** | Offers fully managed cloud file shares that you can access from anywhere via the industry standard Server Message Block (SMB) protocol.  You can mount Azure file shares from cloud or on-premises deployments of Windows, Linux, and macOS. | You want to "lift and shift" an application to the cloud that already uses the native file system APIs to share data between it and other applications running in Azure.  You want to replace or supplement on-premises file servers or NAS devices.  You want to store development and debugging tools that need to be accessed from many virtual machines. |
| **Azure Blobs** | Allows unstructured data to be stored and accessed at a massive scale in block blobs.  Also supports [Azure Data Lake Storage Gen2](https://docs.microsoft.com/en-us/azure/storage/blobs/data-lake-storage-introduction) for enterprise big data analytics solutions. | You want your application to support streaming and random access scenarios.  You want to be able to access application data from anywhere.  You want to build an enterprise data lake on Azure and perform big data analytics. |
| **Azure Disks** | Allows data to be persistently stored and accessed from an attached virtual hard disk. | You want to "lift and shift" applications that use native file system APIs to read and write data to persistent disks.  You want to store data that is not required to be accessed from outside the virtual machine to which the disk is attached. |
| **Azure Queues** | Allows for asynchronous message queueing between application components. | You want to decouple application components and use asynchronous messaging to communicate between them.  For guidance around when to use Queue storage versus Service Bus queues, see [Storage queues and Service Bus queues - compared and contrasted](https://docs.microsoft.com/en-us/azure/service-bus-messaging/service-bus-azure-and-service-bus-queues-compared-contrasted). |
| **Azure Tables** | Allow you to store structured NoSQL data in the cloud, providing a key/attribute store with a schemaless design. | You want to store flexible datasets like user data for web applications, address books, device information, or other types of metadata your service requires.  For guidance around when to use Table storage versus the Azure Cosmos DB Table API, see [Developing with Azure Cosmos DB Table API and Azure Table storage](https://docs.microsoft.com/en-us/azure/cosmos-db/table-support). |