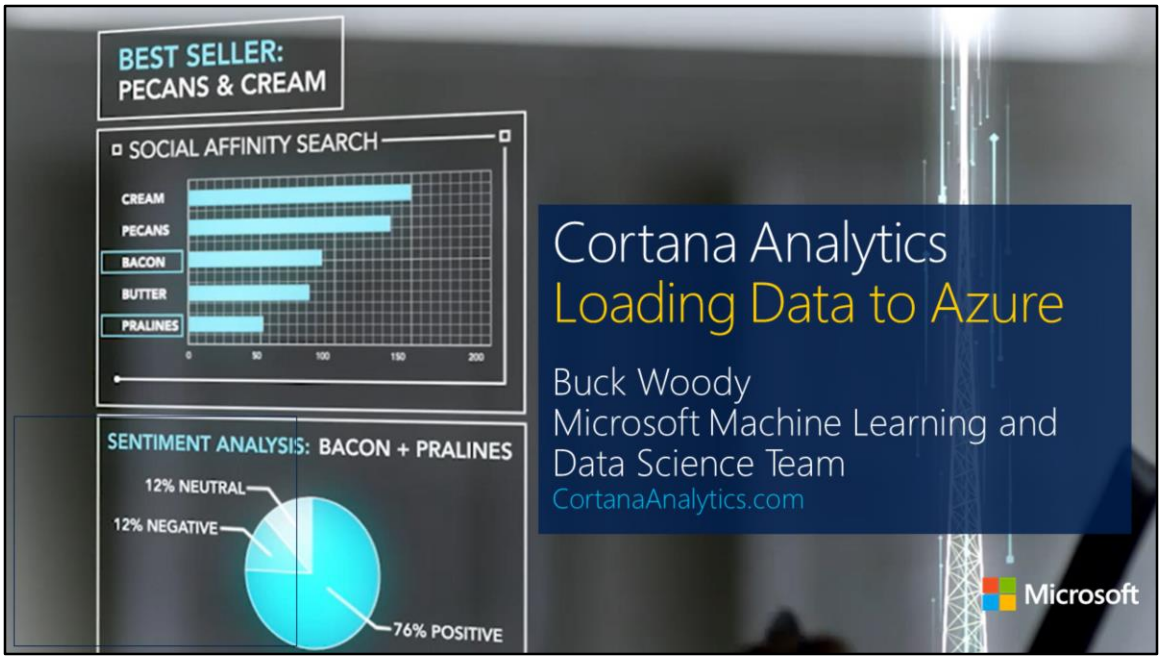


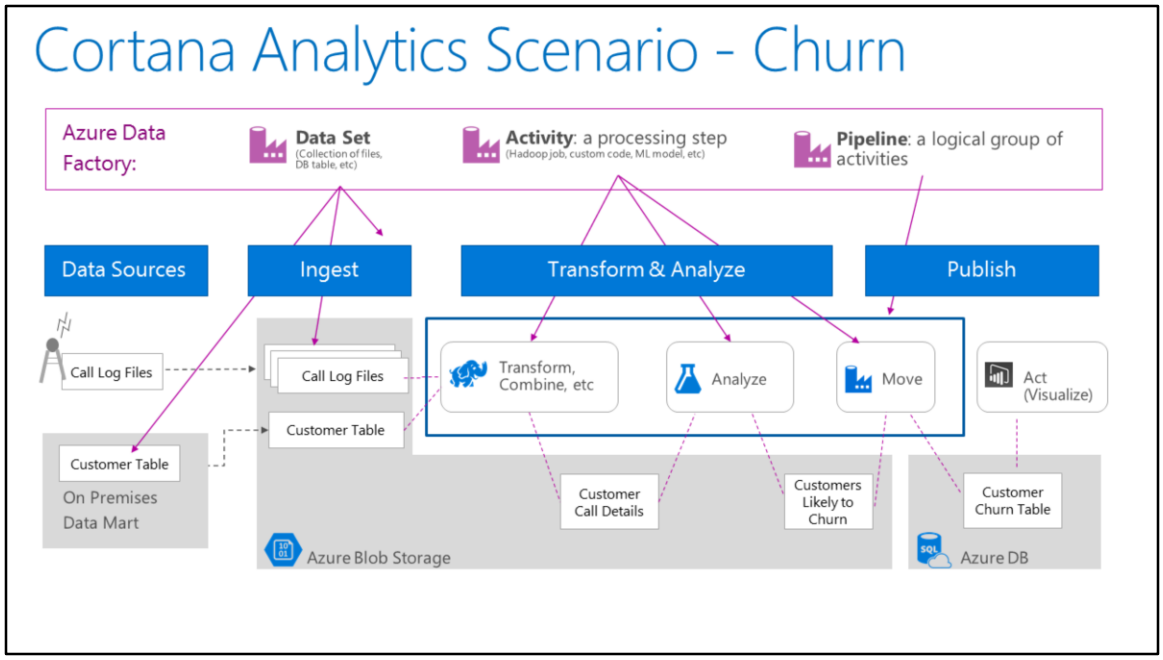
1. Main page: http://cortanaanalytics.com
2. To use this Module, you need to be able to:
    1. Understand how to vet data sources
    2. Use Azure Data Catalog to identify, discover and use data in any source
    3. Use multiple methods for data ingestion into Azure Storage for use with Cortana Analytics Components
    4. Use bridging technologies such as VPN's to leave data on-prem and use it in Cortana Analytics

Learning objectives

1. Implement and Manage Azure Storage
2. Use the appropriate data storage type for a given requirement
3. Understand parallelizing data loads
4. Secure data access with tokens and other methods

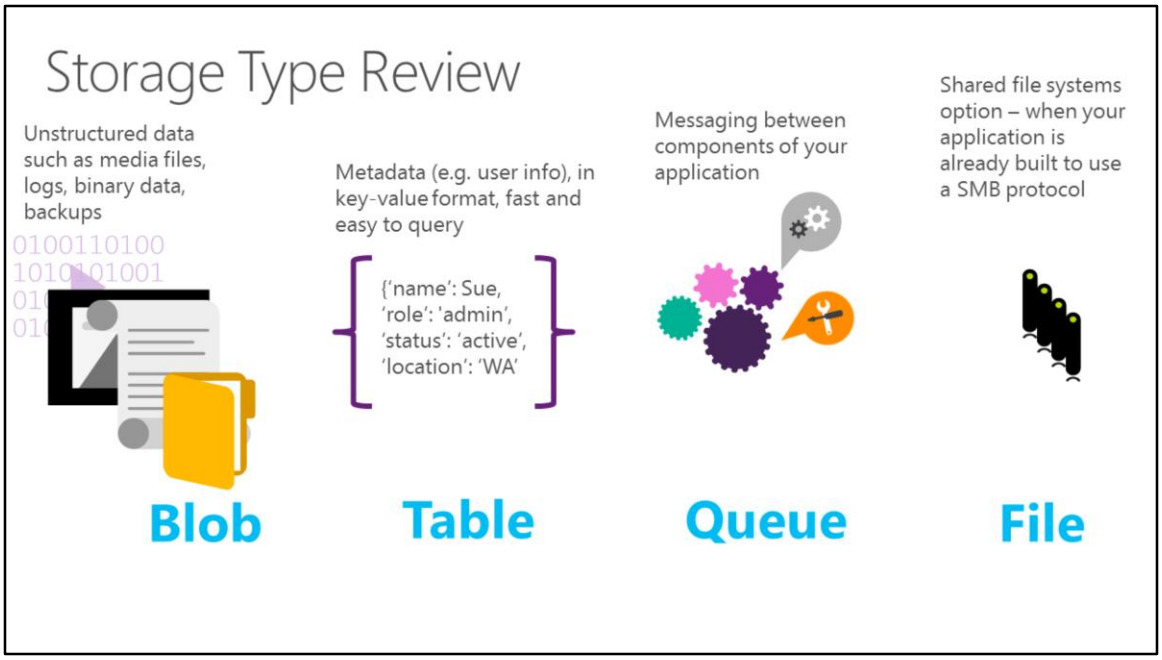
At the end of this module, you will be able to:

1. Implement and Manage Azure Storage
2. Use the appropriate data storage type for a given requirement
3. Understand parallelizing data loads
4. Secure data access with tokens and other methods



1. Full explanation of this example: https://azure.microsoft.com/en-us/blog/getting-started-with-azure-data-factory-and-azure-machine-learning-4/

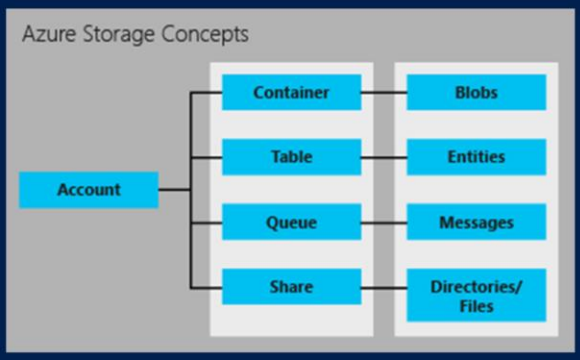
Implement and Manage Azure Storage



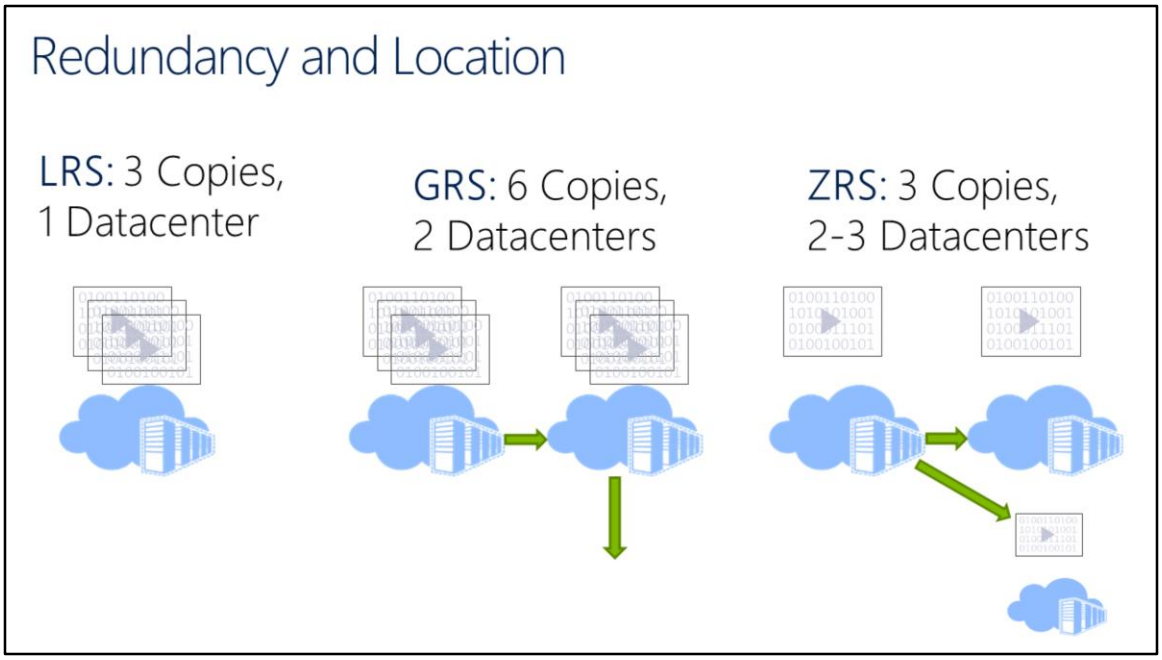
1. https://channel9.msdn.com/Blogs/Windows-Azure/Azure-Storage-5-Minute-Overview
2. https://azure.microsoft.com/en-us/documentation/articles/storage-introduction/

Azure Storage Hierarchy

- Accounts
  - Containers
    - Blobs
- Tables
- Queues



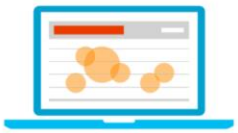
1. General Information on Azure Storage: https://azure.microsoft.com/en-us/documentation/services/storage/
2. Deep dive on architecture: http://sigops.org/sosp/sosp11/current/2011-Cascais/printable/11-calder.pdf
3. Working with Tables: https://www.simple-talk.com/cloud/cloud-data/an-introduction-to-windows-azure-table-storage/



1. **Locations and Redundancy Overview:** https://azure.microsoft.com/en-us/documentation/articles/storage-introduction/
2. **Affects on Scalability and Performance Targets:** https://azure.microsoft.com/en-us/documentation/articles/storage-scalability-targets/
3. Pricing Details: https://azure.microsoft.com/en-us/pricing/details/storage/

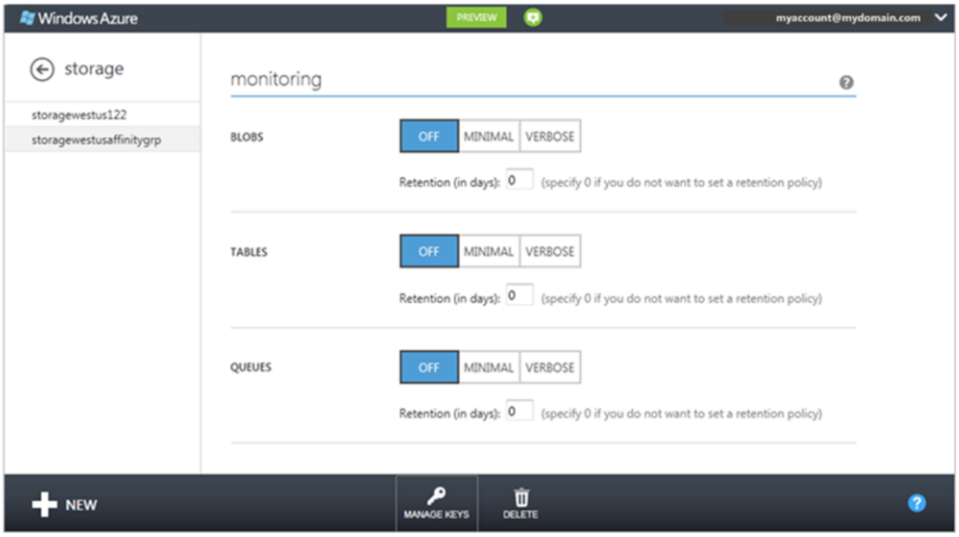
Creating and Managing Azure Storage

- Azure Portal
- Azure PowerShell
- Azure Command Line Interface (CLI)
- Service Management REST API
- Azure Storage Resource Provider REST API



1. Azure Portal - https://portal.azure.com/
2. Azure PowerShell - https://azure.microsoft.com/en-us/documentation/articles/storage-powershell-guide-full/
3. Azure CLI - https://azure.microsoft.com/en-us/documentation/articles/storage-azure-cli/
4. Service management REST API - http://msdn.microsoft.com/library/azure/ee460799.aspx
5. Azure Storage Resource Provider REST API - https://msdn.microsoft.com/library/azure/mt163683.aspx

Monitoring Storage



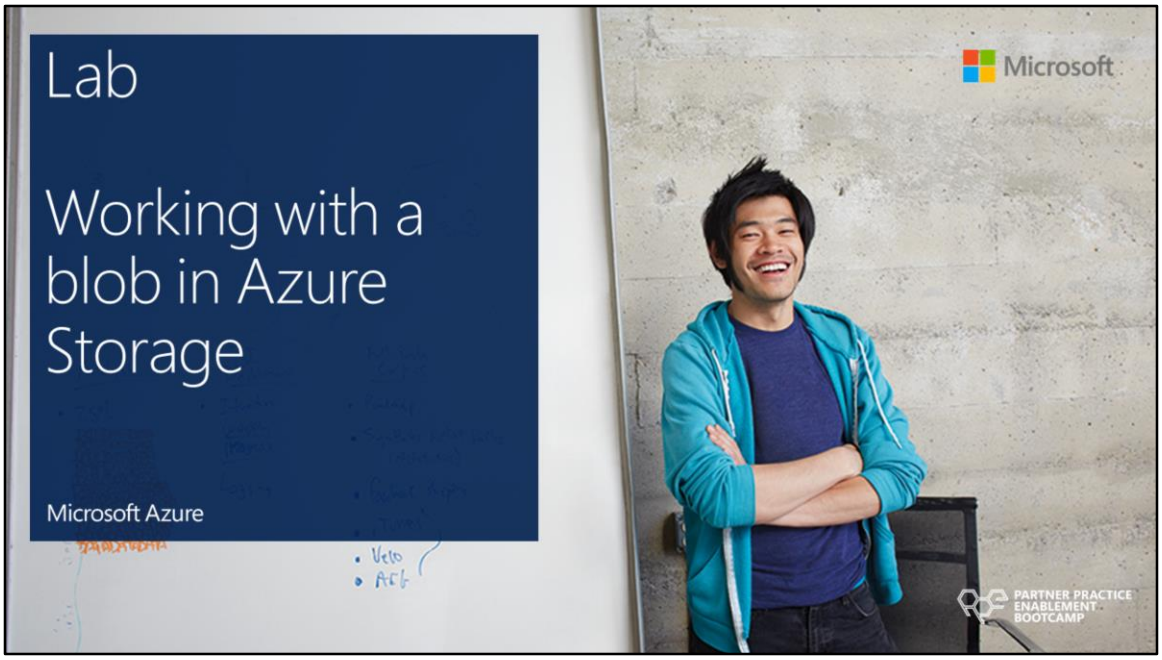
1. **Azure Storage PowerShell Cmdlets:** https://msdn.microsoft.com/library/azure/dn806401.aspx
2. Monitoring in the Portal: https://azure.microsoft.com/en-us/documentation/articles/storage-monitor-storage-account/
3. **Setting up Storage Account Metrics:** https://azure.microsoft.com/en-us/documentation/articles/storage-enable-and-view-metrics/
4. Troubleshooting Storage: https://azure.microsoft.com/en-us/documentation/articles/storage-monitoring-diagnosing-troubleshooting/
5. More information on Storage Metrics: http://blogs.msdn.com/b/windowsazurestorage/archive/2011/08/03/windows-azure-storage-metrics-using-metrics-to-track-storage-usage.aspx

1. Open the Azure Portal (http://portal.azure.com
2. Select +New
3. Select Data + Storage
4. Select Storage Account
5. Select Create Storage Account
6. Enter a name for the account
7. For Type, Select Locally Redundant
8. For Diagnostics, leave enabled
9. For Subscription, pick your subscription
10. For Resource Group, select an RG if you have one, or create one now.
11. Select the location closest to you.
12. Leave Pin to Dashboard.
13. From the Dashboard, select your Storage Account (SA)
14. Click the Access Keys item and copy your keys to a Notepad file for use during the class – also Copy the account name
15. Create a new container – record the name, set the Access Type to Container

Options for data ingestion

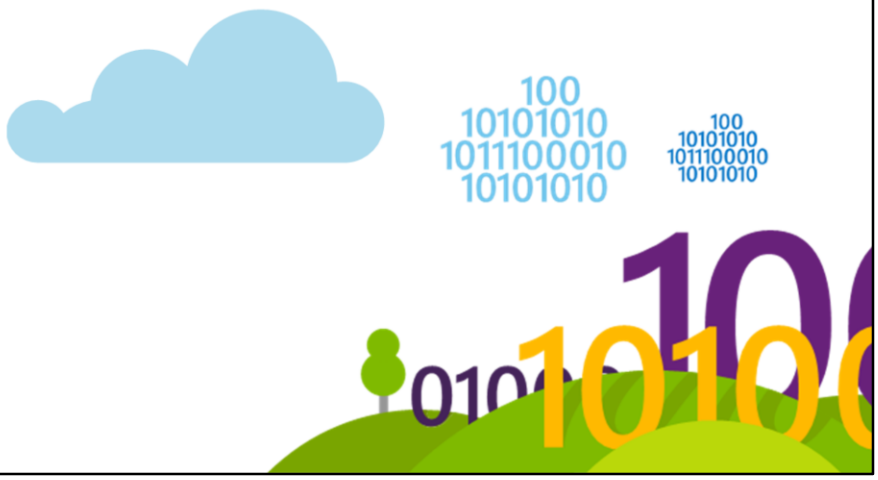
- PowerShell
- Azure Data Factory
- Azure Automation
- Azure storage SDKs (.NET, Node.js, python, C++, etc.)
- Microsoft Azure Storage Explorer application (blob only right now)
- AzCopy (blob, file, and table only)
- Import/Export service

1. PowerShell in Azure Storage - https://azure.microsoft.com/en-us/documentation/articles/storage-powershell-guide-full/
2. Azure Data Factory data movement - https://azure.microsoft.com/en-us/documentation/articles/data-factory-data-movement-activities/
3. Azure Automation - https://azure.microsoft.com/en-us/documentation/articles/automation-intro/
4. Azure storage SDKs – for examples see https://azure.microsoft.com/en-us/documentation/articles/storage-dotnet-how-to-use-blobs/
5. Azure tools and SDKs in general can be downloaded here - https://azure.microsoft.com/en-us/downloads/
6. MS Azure Storage Explorer - http://storageexplorer.com/
7. AzCopy - https://azure.microsoft.com/en-us/documentation/articles/storage-use-azcopy/
8. Import/Export service - https://azure.microsoft.com/en-us/documentation/articles/storage-import-export-service/

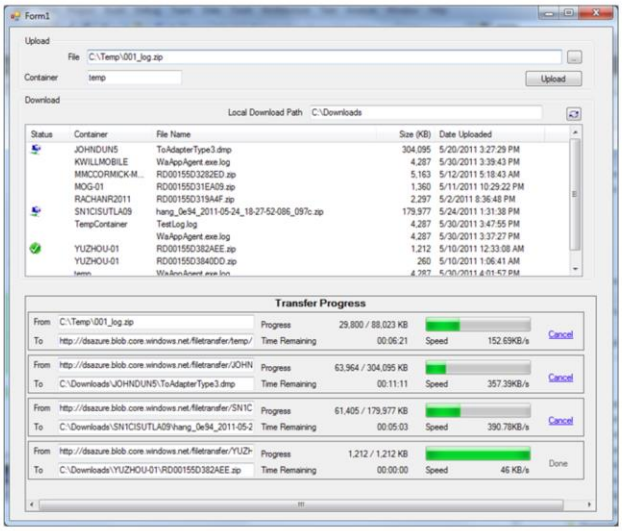


1. Open the Azure Storage Explorer
2. Enter your account and keys
3. Upload a text file to your public container
4. Open the text file in your browser

Optimizing Data Loads



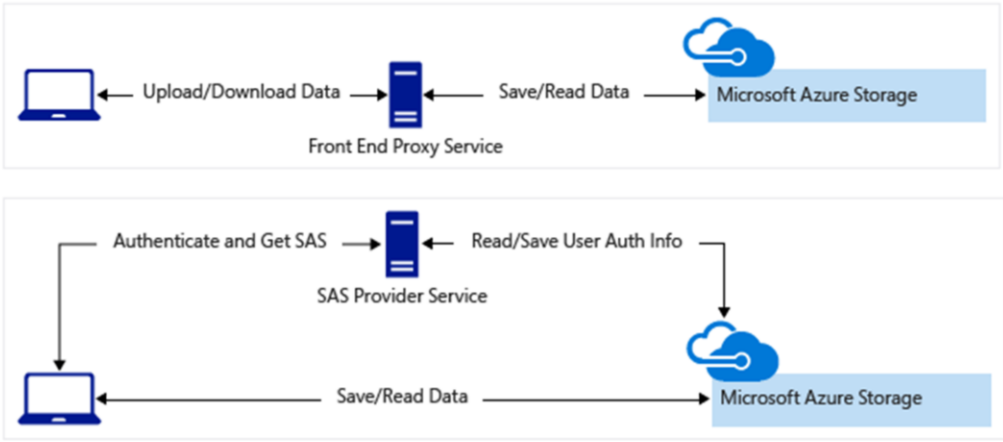
Parallel is the Key



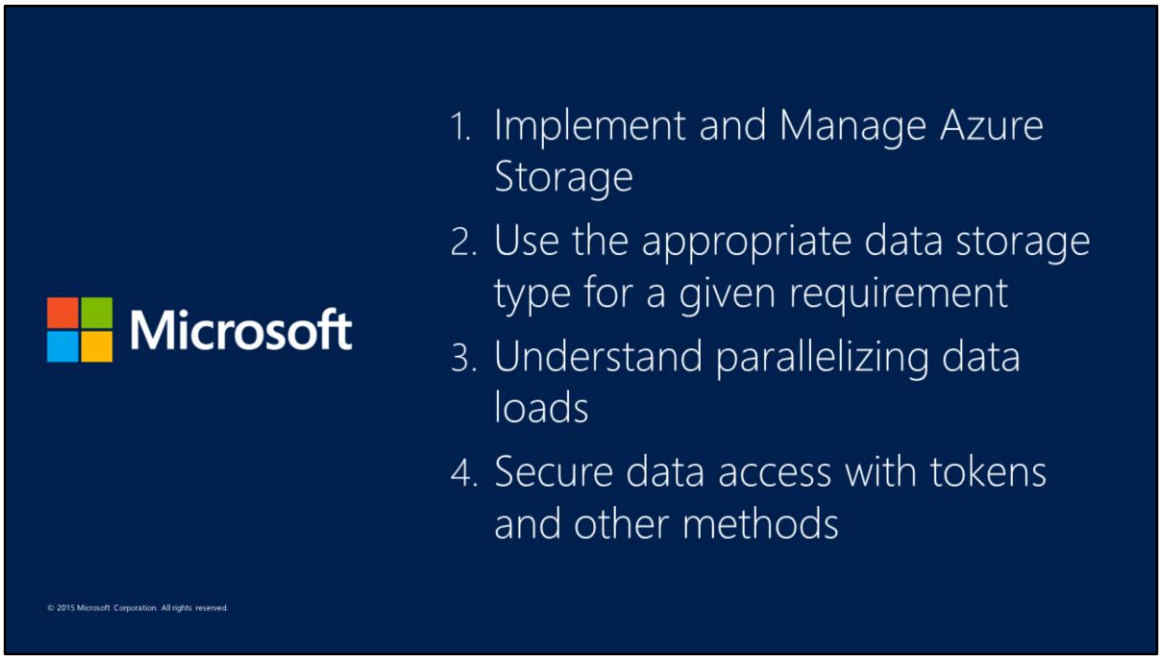
1. AzCopy - https://azure.microsoft.com/en-us/documentation/articles/storage-use-azcopy/
2. Import/Export service - https://azure.microsoft.com/en-us/documentation/articles/storage-import-export-service/
3. Parallelism example: http://blogs.msdn.com/b/kwill/archive/2013/03/06/asynchronous-parallel-block-blob-transfers-with-progress-change-notification-2-0.aspx

Data Security

Azure Storage Security



1. General Access information: https://azure.microsoft.com/en-us/documentation/articles/storage-create-storage-account/
2. Authentication for Azure Storage Services: https://msdn.microsoft.com/library/azure/dd179428.aspx
3. Shared Access Signatures: https://azure.microsoft.com/en-us/documentation/articles/storage-dotnet-shared-access-signature-part-1/ and https://msdn.microsoft.com/library/azure/ee395415.aspx
4. Encryption option: http://blogs.msdn.com/b/partnercatalystteam/archive/2015/06/17/storing-data-securely-in-azure-blob-storage-with-azure-encryption-extensions.aspx



1. Use this for Q/A time