

# Connecting to Azure Storage

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# What's in this module?



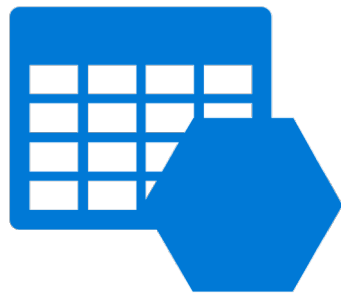
**Azure Storage Services**

**Network Security Options**

**Authentication and Authorization**

**Available Permissions**



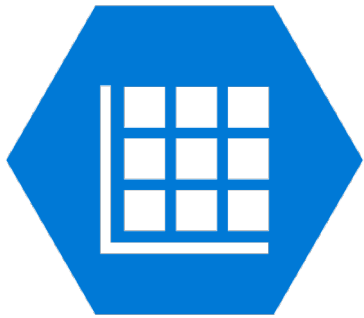


# Azure Storage Service

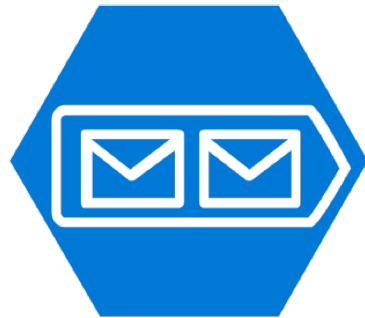
Highly available, secure, durable,  
scalable, and redundant



# Includes These Services



**Tables**



**Queues**



**Files**



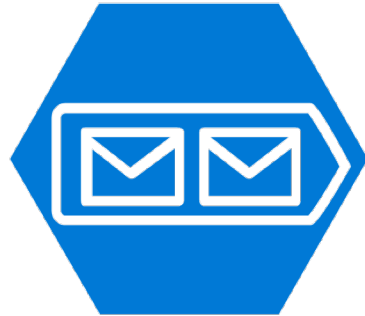
**Blobs**



# Service Endpoints



`https://*****.table  
.core.windows.net`



`https://*****.queue  
.core.windows.net`



`https://*****.file  
.core.windows.net`



`https://*****.blob  
.core.windows.net`



# Network Security Options

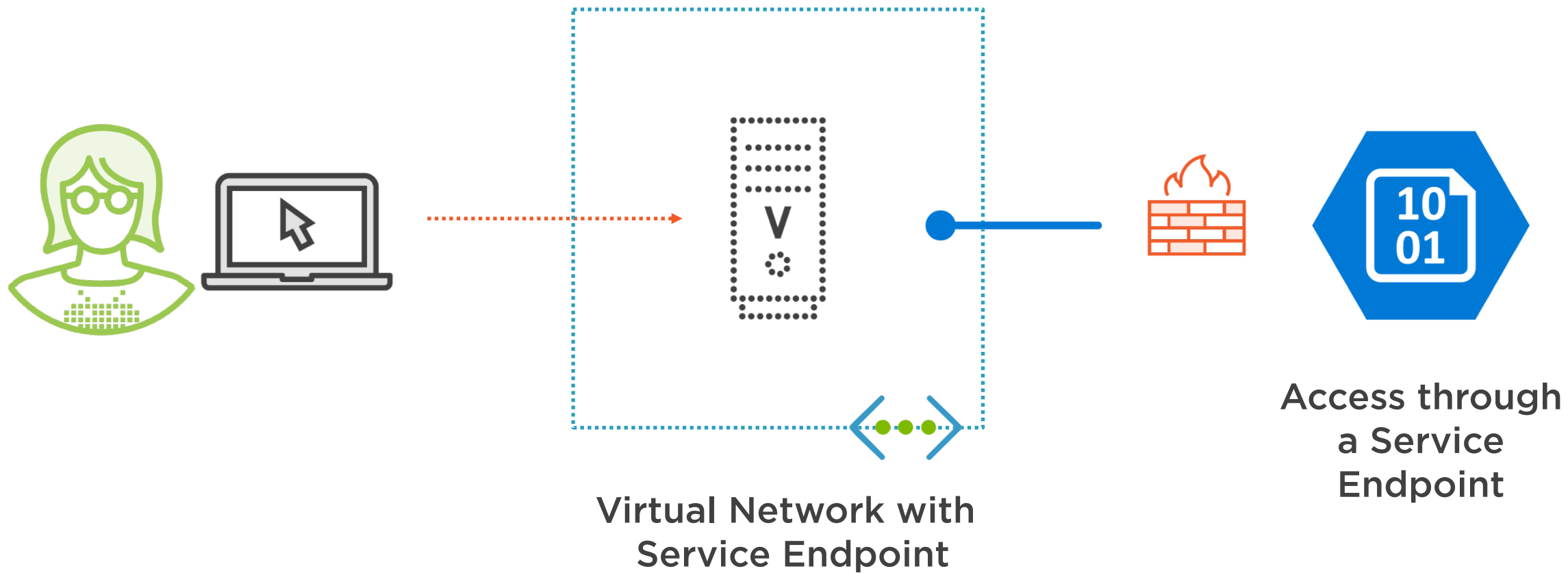
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# Public Endpoint



# Service Endpoint





# Authentication and Authorization

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# Authorizing Access



Azure Active  
Directory (AAD)



Shared Keys



Shared Access  
Signature (SAS)  
Token



Anonymous  
Access



**Role-based access control**

**Users, Groups or Applications**

**High security with ease of use**





Root password of the storage account

There are always 2 active keys

No identity authentication





Shared keys should not be used unless absolutely necessary





Does not authenticate an identity

Granular control over the access granted

Configurable parameters

Can be revoked



**Anonymous access is read-only**

**Network security is still verified**

**No identity or authorization check**





Be extra cautious with the information placed in a storage account that allows anonymous access





# Available Permissions

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# Fine-grained Access



**Azure Active Directory (AAD)**



**Shared Access Signature (SAS)  
Token**

# Permissions

**read**

**write**

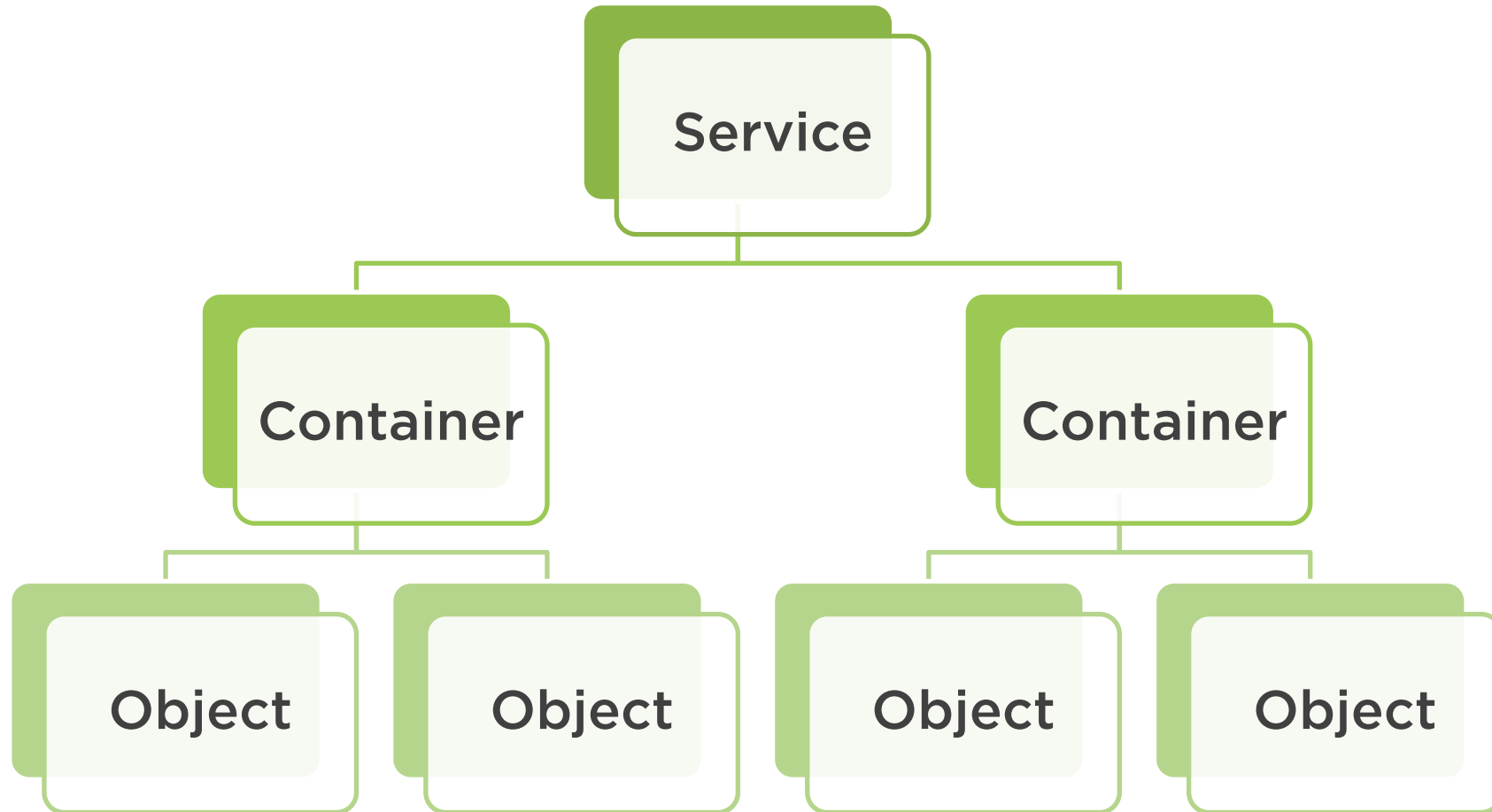
**delete**

**list**

**and more...**



# Scope



# Azure AD Built-in Roles



**Blob Data Contributor**

**Blob Data Reader**

**Queue Data Contributor**

**Queue Data Reader**

**Create your custom role**





Azure AD should be used over SAS tokens whenever possible



# Putting Everything Together



It has a public endpoint and our client is on the Firewall

We have the storage account name

We have administrator access to the account

We want to upload a file using the SAS



# Azure Storage Explorer

The screenshot displays the Azure Storage Explorer application. The left sidebar shows a tree view of the storage account structure, including 'Blob Containers' and 'Tables'. The main pane shows a list of files and folders within a selected container. The bottom pane shows the properties of the selected item.

**EXPLORER**

Search for resources

**Actions:** Upload, Download, Open, New Folder, Copy URL, Select All, Copy, Paste, Rename, Delete, Make Snapshot, Manage Snapshot, Refresh

**File List:**

Name	Last Modified	Blob Type	Content Type	Size	Lease State
.acrolinx-config.edn	Fri, 16 Dec 2016 00:35:51 GMT	Block Blob	application/octet-stream	1.9 KB	
.gitignore	Fri, 16 Dec 2016 00:35:51 GMT	Block Blob	application/octet-stream	179 B	
.openpublishing.build.ps1	Fri, 16 Dec 2016 00:35:51 GMT	Block Blob	application/octet-stream	746 B	
.openpublishing.publish.config.json	Fri, 16 Dec 2016 00:35:51 GMT	Block Blob	application/json	1.4 KB	
03f1ddeb3897e2ad2d93b895d7203481ee1b8b	Fri, 16 Dec 2016 00:35:52 GMT	Block Blob	application/octet-stream	172 B	
10931e126d51ac3d9c0c45adcc0378029e1c14	Fri, 16 Dec 2016 00:35:52 GMT	Block Blob	application/octet-stream	4.5 KB	
195556e4fb5fbeat0db9f8acfc200266c192a	Fri, 16 Dec 2016 00:35:52 GMT	Block Blob	application/octet-stream	9.7 KB	
258bbf32e74e38809f25a0639d9212038e8dc0	Fri, 16 Dec 2016 00:35:52 GMT	Block Blob	application/octet-stream	9.7 KB	
38ceef7d9aaca0e6f54443f3a5dabd06c22a1	Fri, 16 Dec 2016 00:35:52 GMT	Block Blob	application/octet-stream	168 B	
880920c37ea5f093249bf2edeb2ff885e53ef89	Fri, 16 Dec 2016 00:35:52 GMT	Block Blob	application/octet-stream	4.5 KB	
9085b9f64d55eb05ce142d439a5fd4b004f197	Fri, 16 Dec 2016 00:35:52 GMT	Block Blob	application/octet-stream	4.5 KB	
9ab9d313088c280c5df276334de568ab44620e	Fri, 16 Dec 2016 00:35:52 GMT	Block Blob	application/octet-stream	492 B	
a3817c9b765e8b05b7be8bd7ec6ba858a3374f	Fri, 16 Dec 2016 00:35:52 GMT	Block Blob	application/octet-stream	9.7 KB	
aadds-overview-synced-tenant.png	Fri, 16 Dec 2016 00:40:18 GMT	Block Blob	image/png	158.0 KB	
aadds-overview-synced-tenant.png	Fri, 16 Dec 2016 00:40:22 GMT	Block Blob	image/png	158.0 KB	
aadds-overview.png	Fri, 16 Dec 2016 00:40:22 GMT	Block Blob	image/png	116.2 KB	
aadds-overview.png	Fri, 16 Dec 2016 00:40:19 GMT	Block Blob	image/png	116.2 KB	
aceaaa1d5730bb66f30fee1fe05717dca782ac	Fri, 16 Dec 2016 00:35:52 GMT	Block Blob	application/octet-stream	165 B	
active-directory-aadconnect-azure-adfs.md	Fri, 16 Dec 2016 00:35:57 GMT	Block Blob	text/x-markdown	25.1 KB	
active-directory-aadconnect-design-concepts.md	Fri, 16 Dec 2016 00:35:57 GMT	Block Blob	text/x-markdown	8.5 KB	
active-directory-aadconnect-dirsync-deprecated.md	Fri, 16 Dec 2016 00:35:57 GMT	Block Blob	text/x-markdown	4.9 KB	
active-directory-aadconnect-faq.md	Fri, 16 Dec 2016 00:35:57 GMT	Block Blob	text/x-markdown	5.2 KB	
active-directory-aadconnect-feature-automatic-upgrade.md	Fri, 16 Dec 2016 00:35:57 GMT	Block Blob	text/x-markdown	7.3 KB	

Showing 1 to 100 of 1,000 cached items

**Properties:**

Property	Value
URL	https://cawablobgrs.blob.core.wnd
Type	Blob Container
Public Read Access	Off
Lease State	available
Lease Status	unlocked
Last Modified	Thu, 15 Dec 2016 23:29:56 GMT





# Demo



Connecting and uploading a file to Blob Storage using Azure Storage Explorer



# Summary



The service offers public or VNET service endpoints

Authentication and authorization can be done through AAD, Keys, SAS tokens or anonymously

AAD and SAS tokens are preferred

Put it all together to upload a file to Blob Storage



# Next Module:

## Connect to Azure Databases

