

# Microsoft Azure Cloud

## Vulnerability Report

Jonathan Scott Villarreal, MCS

April 8th, 2021

# Table of Contents

<b>ABOUT THE AUDITOR</b>	3
<b>SUMMARY</b>	Error! Bookmark not defined.
<b>DESCRIPTION</b>	5
IMPROPER ACCESS CONTROLS	5
IMPROPER DISCLOSURE	5
INFORMATION EXPOSURE THROUGH DIRECTORY LISTING	5
INFORMATION EXPOSURE THROUGH AN ERROR MESSAGE	5
INSECURE STORAGE OF SENSITIVE INFORMATION	5
PRIVACY VIOLATION	5
PRIVILEGE ESCALATION	5
CROSS-DOMAIN MISCONFIGURATION	5
MISSING REQUIRED CRYPTOGRAPHIC STEP	5
<b>STEPS TO REPRODUCE</b>	6
API Endpoint Accessibility & Default API Parameter Exposure	13

## ABOUT THE AUDITOR

---

My name is Jonathan Scott Villarreal I am an American security engineer, and Founder of Bike Inc., and Zroblack, LLC. I currently have 3 patent pending technologies based around secured devices forensic data analysis. I have over 14 years of professional experience as a security engineer.

I hold a Master of Science degree in Computer Science, and I am currently a Doctoral Student in Computer Science. I am known for my unique style of writing code, my hardware inventions, and my ability to rapidly, and accurately perform forensic analysis, data clearing, and diagnostics on secured virtual and physical devices.

# SUMMARY

---

Approved third party applications that are promoted on Azure Cloud are not following basic privacy and authentication methods provided by the Azure API. Requiring 2 factor authentication to access services or applications is the widely accepted and practiced standard that Microsoft Azure Cloud has not adopted, and has proved to be a dire mistake. From a large institution with millions of users to a small business with minimal users, to the United States Government, I have confirmed that the default permissions set are a vulnerability that is critical to everyone using Microsoft Azure Cloud, and could be a risk to national security.

For the purposes of this report I will be using the following email address associated with [ REDACT ] as the core reference point of the report. I am authorized to use this email address [REDACT].

email: **[REDACT]**

# DESCRIPTION

---

1. Improper Access Controls (CWE-284)

## SUMMARY

---

If a user is assigned to a tenant with “general” access, by default the user has access to Azure Services that are only intended for administrators. Similarly general users have access to restricted functionality and viewing on Azure approved 3rd party applications. Although the argument can be made that permissions are set by administrators; due to the complexity and rapidly expanding network of services Azure offers, Microsoft has a responsibility and duty to ensure the integrity, safety, and privacy of all their users' data.

This issue goes beyond providing documentation to cloud administrators about how to maintain roles, and permissions. There needs to be a fundamental change in the cloud services privacy controls auditing system, OAuth Tokenization, and more strict standards developed and verified for Azure API integration.

The best way that I can make this as clear as possible is to present this in its truest form.

***A student at a University has access to all of the following and more:***

***A junior employee at a publicly traded company has access to all of the following and more:***

***An intern with a .gov email address has access to all of the following and more:***

## STEPS TO REPRODUCE

---

1. Azure Active Directory Admin Center
  - a. <https://aad.portal.azure.com/>
    - i. Create a tenant
    - ii. Assign a user to a tenant
    - iii. Assign a role to a tenant user
    - iv. Assign permissions to a tenant user
    - v. Invite external users

- vi. View all users in a tenant
- vii. View all users PII
  - 1. Phone number
  - 2. Home address
  - 3. Email
  - 4. Social Media
  - 5. Login Dates
- viii. View all users connected devices

**b. View Video For More Information**

2. Microsoft Endpoint Manager Admin Center

- a. <https://endpoint.microsoft.com/>
  - i. Unauthorized Capabilities
    - 1. Tenant status
    - 2. View all services
    - 3. Export all managed devices
    - 4. Devices > Create Configuration Profiles
    - 5. View all device policies
    - 6. Diagnostics & Support Access
    - 7. Devices> View names locations

**ii. View Images For More Information**

3. Active Directory Groups

- a. <https://account.activedirectory.windowsazure.com/r#/groups>
  - i. Unauthorized Capabilities
    - 1. View all groups
    - 2. View all members, role, and id in groups
    - 3. Create a group
    - 4. Set the group policy
    - 5. **View Images For More Information**

4. Delve

- a. <https://nam.delve.office.com/>
  - i. Unauthorized Capabilities
    - 1. View all students
    - 2. View documents students are working on
    - 3. **View Images For More Information**

## 5. Power Apps

a. <https://make.powerapps.com/>

i. Unauthorized Capabilities

1. View Database Tables
2. View Database Structure
3. Edit Database Values
4. **View Images For More Information**

## 6. Power Apps Continued

a. <https://make.powerapps.com/environments/Default-2474181a-4e9a-4d12-9d86-cbd08a94b9e3/solutions/fd140aaf-4df4-11dd-bd17-0019b9312238#>

i. Unauthorized Capabilities

1. Modify System Actions

As my research progressed I noticed that there was a .htaccess file right in front of me, telling me everywhere that I could go and what I have access to.

<https://aad.portal.azure.com/signin/idpRedirect.js/.htaccess>

```
"AppInsightsExtension": ["1.0.20210406.2240", "1.0.20210407.2227"],
  "AppPlatformExtension": ["1.0.01546.0002"],
  "AzureCacheExtension": ["1.3.01546.289"],
  "AzureEdgeDevices": ["1.0.01558.0003"],
  "AzureTfsExtension": ["18.184.31124.7"],
  "Azure_Marketplace_Confluent": ["0.9.01550001-8481836"],
  "Azure_Marketplace_Datadog": ["2.2101.01558001-46432"],
  "Azure_Marketplace_Elastic": ["0.1.01531001-96481"],
  "Azure_Marketplace_Liftr_Logz": ["0.2.0.27"],
  "Citrix_XenApp_Essentials": ["2.0"],
  "Citrix_XenDesktop_Essentials": ["2.0"],
  "CloudSimpleExtension": ["1.0.0.153"],
  "HubsExtension": ["7.185.0.53149.210325-0726/uw4SfYfaobMM"],
  "ManagedLedgerExtension": ["1.0.20210210.3"],
  "Microsoft_AAD_B2CAdmin": ["1.0.1998.1"],
  "Microsoft_AAD_Connect_Provisioning": ["2.0.01553585-04418", "2.0.01549577-87758"],
  "Microsoft_AAD_DecentralizedIdentity": ["1.0.0155165"],
  "Microsoft_AAD_Devices": ["1.0.01544305"],
  "Microsoft_AAD_DomainServices": ["1.0.0.678-210312-0918"],
  "Microsoft_AAD_ERM": ["1.2.870.145-20210406174306"],
  "Microsoft_AAD_IAM": ["2.0.01547001-228324"],
  "Microsoft_AAD_RegisteredApps": ["1.0.01551808"],
  "Microsoft_AAD_UsersAndTenants": ["1.0.01544.110"],
  "Microsoft_AzureMigrate_AppAssessment": ["1.0.0.25"],
  "Microsoft_AzureStackHCI_PortalExtension": ["1.0.12.0"],
  "Microsoft_Azure_ActivityLog": ["1.0.300.106", "1.0.100.245"],
```



```
"Microsoft_Azure_AD": ["1.0.0.2852"],
"Microsoft_Azure_ADHybridHealth": ["1.0.01543326"],
"Microsoft_Azure_ADU": ["1.1.015390001--73862"],
"Microsoft_Azure_AdvisorPortalExtension": ["1.0.01559.19"],
"Microsoft_Azure_AFDX": ["1.0.01547458"],
"Microsoft_Azure_AgFoodPlatform": ["1.0.0.5"],
"Microsoft_Azure_AnalysisServices": ["1.2.72.0"],
"Microsoft_Azure_ApiManagement": ["1.238.0.10"],
"Microsoft_Azure_Appliance": ["4.0.300.138", "4.0.200.68"],
"Microsoft_Azure_Attestation": ["1.0.0.26"],
"Microsoft_Azure_AutoManagedVirtualMachines": ["1.0.322.0"],
"Microsoft_Azure_Automation": ["7.3.1462.1"],
"Microsoft_Azure_AzConfig": ["0.0.015490001--582"],
"Microsoft_Azure_Batch": ["1.1.01544.200"],
"Microsoft_Azure_Billing": ["21.3.3.18.20210331-1511"],
"Microsoft_Azure_BlockchainStreaming": ["1.0.20210225.1"],
"Microsoft_Azure_Bonsai": ["1.0.0.0.210219-1445"],
"Microsoft_Azure_BotService": ["1.4.1.230655"],
"Microsoft_Azure_Capacity": ["210405-1652"],
"Microsoft_Azure_Cdn": ["1.0.14.50"],
"Microsoft_Azure_ChangeAnalysis": ["1.0.01546.20"],
"Microsoft_Azure_Chaos": ["0.4.0-1.0.01535.0001--15499", "0.4.0-1.0.01550.0003--22159"],
"Microsoft_Azure_ClassicResources": ["1.0.10.84", "1.0.10.82"],
"Microsoft_Azure_Classic_Compute": ["4.13.393.204"],
"Microsoft_Azure_CloudNativeTesting": ["1.0.0.125"],
"Microsoft_Azure_CloudPC": ["1.1.210326.32794840"],
"Microsoft_Azure_CloudServices": ["4.13.393.226"],
"Microsoft_Azure_CloudServices_Arm": ["4.13.393.226"],
"Microsoft_Azure_CloudTest": ["2.0.6.4"],
"Microsoft_Azure_Collaboratives": ["1.0.9"],
"Microsoft_Azure_CommunicationServices": ["1.0.0.20210324"],
"Microsoft_Azure_Compute": ["4.13.393.225", "4.13.393.228"],
"Microsoft_Azure_ContainerInsightsExt": ["2.0.20210407.2214"],
"Microsoft_Azure_ContainerRegistries": ["1.0.20210324.4"],
"Microsoft_Azure_ContainerService": ["4.13.393.226/xWYkWJEPBVuH"],
"Microsoft_Azure_CostManagement": ["1.0.01554.3399-068784-20210403", "1.0.01559.3416-2006-20210409"],
"Microsoft_Azure_CreateUIDef": ["1.0.300.150", "1.0.200.240"],
"Microsoft_Azure_CustomerHub": ["1.0.300.75"],
"Microsoft_Azure_Data": ["1.0.0.88"],
"Microsoft_Azure_Databricks": ["1.0.01558.127"],
"Microsoft_Azure_DataCatalog": ["1.0.20210318.2"],
"Microsoft_Azure_DataCollaboration": ["2.0.20210407-0939"],
"Microsoft_Azure_DataFactory": ["032221.0001"],
"Microsoft_Azure_DataLakeAnalytics": ["20210318.1"],
"Microsoft_Azure_DataLakeStore": ["1.0.14.411"],
"Microsoft_Azure_DataProtection": ["210323-122639"],
"Microsoft_Azure_DataShare": ["2.0.20210319-1638"],
"Microsoft_Azure_Dedicated_ClusterStor": ["210331-1446"],
"Microsoft_Azure_Dedicated_Cray": ["210205-1817"],
"Microsoft_Azure_Dedicated_Monitoring": ["210205-1817"],
"Microsoft_Azure_DetonationService": ["1.0.5.8"],
"Microsoft_Azure_DevTestLab": ["1.0.01551498", "1.0.01557503"],
"Microsoft_Azure_DigitalTwins": ["1.1.01543.0001-032323"],
"Microsoft_Azure_DiskMgmt": ["4.13.393.217"],
"Microsoft_Azure_DMS": ["5.1.5112.3"],
"Microsoft_Azure_DNS": ["4.12.0.1628"],
"Microsoft_Azure_DocumentDB": ["2.0.35168286.0", "2.0.35263449.0"],
"Microsoft_Azure_Ea": ["21.4.1.1.20210404-2348"],
```

```
"Microsoft_Azure_EdgeGateway": ["2.1.21032.2"],
"Microsoft_Azure_EdgeManagement": ["1.0.0.43"],
"Microsoft_Azure_EdgeOrder": ["1.0.01545152"],
"Microsoft_Azure_Education": ["2021.03.10.1"],
"Microsoft_Azure_ELMAAdmin": ["2.0.12.22"],
"Microsoft_Azure_EMA": ["1.60315.1.3.210324-1308"],
"Microsoft_Azure_EventGrid": ["1.0.519.0"],
"Microsoft_Azure_EventHub": ["1.0.532.0"],
"Microsoft_Azure_Experimentation": ["2.0.01544.178"],
"Microsoft_Azure_Expert": ["1.0.23.86"],
"Microsoft_Azure_ExpressPod": ["2.1.4.133"],
"Microsoft_Azure_FileStorage": ["5.0.0.107", "5.0.0.106"],
"Microsoft_Azure_FlowLog": ["2.0.0.250.210321-2302"],
"Microsoft_Azure_Frontdoor": ["4.13.0.11"],
"Microsoft_Azure_GitHubAE": ["1.0.6.1"],
"Microsoft_Azure_GTM": ["21.4.1.9.20210406-1447"],
"Microsoft_Azure_HDInsight": ["1.0.01546.241"],
"Microsoft_Azure_Health": ["1.1.1.171"],
"Microsoft_Azure_HealthBot": ["1.0.0.47"],
"Microsoft_Azure_HpcWorkbench": ["0.5.1.1"],
"Microsoft_Azure_HybridCompute": ["1.0.813.0"],
"Microsoft_Azure_HybridData": ["2.0.0.132", "2.0.0.130"],
"Microsoft_Azure_HybridData_Platform": ["1.0.0.64"],
"Microsoft_Azure_HybridNetworking": ["21.8.0.4-210405-1715", "21.10.0.5-210407-1943"],
"Microsoft_Azure_IIDT": ["0.0.0.31"],
"Microsoft_Azure_ImportExport": ["6.0.0.6"],
"Microsoft_Azure_InformationProtection": ["1.0.3347.0"],
"Microsoft_Azure_InternetAnalyzer": ["1.0.0155720"],
"Microsoft_Azure_IoTCentral": ["2.0.7762.1637"],
"Microsoft_Azure_IotHub": ["1.1.01551.0002-033120"],
"Microsoft_Azure_IoT_Defender": ["2021.04.04-040413"],
"Microsoft_Azure_Kailani": ["1.0.0.151"],
"Microsoft_Azure_KeyVault": ["1.2.16.0.210330-1035"],
"Microsoft_Azure_Kusto": ["1.0.1344.0"],
"Microsoft_Azure_LocationServices": ["2.1.21039.1"],
"Microsoft_Azure_Lockbox": ["2.26.0.0"],
"Microsoft_Azure_Maintenance": ["4.13.393.204"],
"Microsoft_Azure_ManagedLab": ["1.0.0149075"],
"Microsoft_Azure_ManagedNetwork": ["2.2.1556.0-210406-1029"],
"Microsoft_Azure_ManagedServiceIdentity": ["2.1.7357.0"],
"Microsoft_Azure_ManagementGroups": ["1.0.200.23.20210331-1017", "1.0.100.34.20210407-1513"],
"Microsoft_Azure_Marketplace": ["3.0.0.16-210406-032842", "2.2.58.616-210407-011329"],
"Microsoft_Azure_MarketplaceApps": ["2.2.58.374-201231-041658"],
"Microsoft_Azure_Media": ["1.0.632.0"],
"Microsoft_Azure_Migrate": ["1.0.10.284", "1.0.10.283"],
"Microsoft_Azure_Mindaro": ["20210317.2"],
"Microsoft_Azure_MLCommitmentPlans": ["1.1.40324.02"],
"Microsoft_Azure_MLTeamAccounts": ["1.0.0.210330-1241"],
"Microsoft_Azure_MLWebservices": ["1.1.40324.03"],
"Microsoft_Azure_MLWorkspaces": ["1.1.30324.03"],
"Microsoft_Azure_Monitoring": ["20.0.300.137", "20.0.300.138"],
"Microsoft_Azure_MonitoringAz": ["2.2104.215.1100", "2.2104.815.1000"],
"Microsoft_Azure_MonitoringMetrics": ["2.0.20210402.1514", "2.0.20210408.1513"],
"Microsoft_Azure_Monitoring_Logs": ["1.0.2265.0", "1.0.2277.0"],
"Microsoft_Azure_NetApp": ["2020.12.0.16"],
"Microsoft_Azure_Network": ["4.13.393.223", "4.13.393.228"],
"Microsoft_Azure_NotificationHubs": ["5.5.21.0.210408-1317"],
"Microsoft_Azure_ODG": ["1.0.9.81"],
```

```
"Microsoft_Azure_OpenSupplyChainPlatform": ["1.0.0.19"],
"Microsoft_Azure_Orbital": ["0.1.01543.96"],
"Microsoft_Azure_OSSDatabases": ["2.1.01557125"],
"Microsoft_Azure_Peering": ["1.2.0.203"],
"Microsoft_Azure_PIM": ["2.0.32.1385"],
"Microsoft_Azure_PIMCommon": ["2.0.32.1392"],
"Microsoft_Azure_Playground": ["7.179.0.581079.210319-1921"],
"Microsoft_Azure_Policy": ["1.0.9.457"],
"Microsoft_Azure_PowerBIDedicated": ["1.1.1527.1"],
"Microsoft_Azure_PowerPlatform": ["0.0.0.32"],
"Microsoft_Azure_PrivateDNS": ["4.12.0.1624"],
"Microsoft_Azure_ProjectBabylon": ["1.0.20210330.2"],
"Microsoft_Azure_ProjectOxford": ["210322-1739"],
"Microsoft_Azure_Quantum": ["1.0.3.1"],
"Microsoft_Azure_RecoveryServices": ["3.48.10401.12027"],
"Microsoft_Azure_RedHatOpenShift": ["1.0.0.10"],
"Microsoft_Azure_Relay": ["1.0.718.0"],
"Microsoft_Azure_Reservations": ["04.02.2021.1812"],
"Microsoft_Azure_ResourceMove": ["1.49.10330.12143"],
"Microsoft_Azure_Resources": ["1.0.300.194", "1.0.300.193"],
"Microsoft_Azure_SapHanaInstances": ["1.0.50.63", "1.0.50.62"],
"Microsoft_Azure_Scheduler": ["1.0.219.19"],
"Microsoft_Azure_Search": ["20210401.1"],
"Microsoft_Azure_Security": ["1.21.04.061612"],
"Microsoft_Azure_Security_Insights": ["1.0.01556.0001-210406-093725", "1.0.01558.0001-210408-075253"],
"Microsoft_Azure_Security_IoT": ["2021.04.04-040413"],
"Microsoft_Azure_Security_R3": ["1.0.01557.0001-3-632950"],
"Microsoft_Azure_SentinelUS": ["1.0.01552.0002-040118"],
"Microsoft_Azure_ServiceBus": ["1.0.518.0"],
"Microsoft_Azure_ServiceFabric": ["4.13.393.226"],
"Microsoft_Azure_SignalR": ["1.0.01522.0001"],
"Microsoft_Azure_Storage": ["4.50.1.111", "4.13.393.230"],
"Microsoft_Azure_StorageCache": ["1.0.11.545"],
"Microsoft_Azure_StorSimple": ["1.0.617.4"],
"Microsoft_Azure_StreamAnalytics": ["20210317.3", "20210407.1"],
"Microsoft_Azure_SubscriptionManagement": ["1.0.01552.0003.20210401-1517"],
"Microsoft_Azure_Support": ["1.67.040521.0002", "1.67.040821.0001"],
"Microsoft_Azure_Synapse": ["1.0.01558.0004"],
"Microsoft_Azure_TemplateSpecs": ["1.0.1.33"],
"Microsoft_Azure_TimeSeriesInsights": ["1.0.01552.211"],
"Microsoft_Azure_UpdateStagingLab": ["1.0.20210406.1"],
"Microsoft_Azure_VideoAnalyzer": ["1.0.628.0"],
"Microsoft_Azure_VnfManager": ["1.0.0.0-04081904"],
"Microsoft_Azure_WorkloadInsights": ["1.0.9.676", "1.0.01559.0"],
"Microsoft_Azure_WVD": ["1.1.01551.293", "1.1.01558.294"],
"Microsoft_Bing_Api": ["210225-2239"],
"Microsoft_Cognition_MixedReality": ["3.0.0.0"],
"Microsoft_ConnectedCache": ["1.0.2.8"],
"Microsoft_EMM_ModernWorkplace": ["1.2104.1.01"],
"Microsoft_Healthcare_APIs": ["1.0.84869.1"],
"Microsoft_Intune": ["1.2103.9.3002"],
"Microsoft_Intune_Apps": ["2.2103.41.4003"],
"Microsoft_Intune_DeviceExplorer": ["1.0.210325.170134"],
"Microsoft_Intune_Devices": ["6.2103.200.6"],
"Microsoft_Intune_DeviceSettings": ["1.2103.0.3011.210407-1743"],
"Microsoft_Intune_Edu": ["6.2103.20.3017"],
"Microsoft_Intune_Enrollment": ["7.2103.11.2003"],
"Microsoft_Intune_MTM": ["6.2104.73.0.210401-1636"],
```

```
"Microsoft_Intune_Workflows": ["1.2103.45.0"],
"Microsoft_M365_ManageClient": ["1.0.0.89"],
"Microsoft_OperationsManagementSuite_Workspace": ["2.0.0.1530", "2.0.0.1535"],
"Microsoft_Research_Genomics": ["1.0.0.4807"],
"Microsoft_ServicesHub_Extension": ["1.0.0.13"],
"Microsoft_WindowsIoT_DeviceServices": ["1.0.010921.0338"],
"Microsoft_Windows_ExtendedSecurityUpdates": ["1.0.0.15"],
"ScanX_Management": ["1.0.0.90"],
"SendGrid_EmailService": ["2.0.7.0"],
"ServiceLinkerExtension": ["1.0.0.20"],
"SqlAzureExtension": ["2.1.01557135"],
"Universal_Print": ["2.357"],
"VMCP": ["1.1.429"],
"WandiscoExtension": ["1.10.9.0", "1.11.0.0"],
"WebsitesExtension": ["5.12.160.14"]
```

---

One of the biggest issues that Azure has is that token caching has been set to true. In the most basic way, I have been able to manually navigate through directories that are supposed to be protected.

```
https://aad.portal.azure.com/api/DelegationToken?feature.tokencaching=true
```

### Azure Compromised Paths

- <https://afd.hosting.portal.azure.net/api/diagnostics>

```
curl -O https://afd.hosting.portal.azure.net/api/diagnostics
cat diagnostics | jq
```

- Full API Diagnostics
  - Staging
  - Production
  - Regional IP Addresses Exposure
  - Endpoint Exposure

## ■ Production Deployment Package (zip) URL Exposure

```
https://eoprodportalehs95jfo.blob.core.windows.net/deployment/1.0.0.0.zip
```

- <https://reactblade.portal.azure.net/SelfHelp>
  - API Diagnostics
- <https://insights1.exp.azure.com/>
  - Build Version
  - SDK Framework Version

## API Endpoint Accessibility & Default API Parameter Exposure

I noticed that I could build URLs because the content security policy has not been set to exclude wildcards and from here I was able to set attributes in the url according to API rules. This provided me with a lot of information all without authentication.

```
curl -L "https://afd.hosting.portal.azure.net/iam/?bundlingKind=DefaultPartitioner&cacheability=3&clientOptimizations=true&environmentjson=true&extensionName=Microsoft_AAD_IAM&feature.environment=true&l=en&pageVersion=2.0.015470001-228324&trustedAuthority=aad.portal.azure.com"
```

1. After sending a curl request, I saved the output to a json file.
2. I read through the json file and found it contained a lot of absolute paths to endpoints that were able to be accessed with default user access.
3. I ran an inline grep for all the secured access points, I've listed a few below
4. Each one of access points has default attributes associated that can be used to navigate through various domains.

```
curl -L
```

```
"https://afd.hosting.portal.azure.net/iam/?bundlingKind=DefaultPartitioner&
cacheability=3&clientOptimizations=true&environmentjson=true&extensionName=
Microsoft_AAD_IAM&feature.environment=true&l=en&pageVersion=2.0.015470001-
228324&trustedAuthority=aad.portal.azure.com" | grep -Eo
'(https?|ftp|file)://[ -A-Za-z0-9\+&@#/%?=_~|!:,.;]*[ -A-Za-z0-9\+&@#/%=_~| ]'
```

5. I did simple grep to extract the base URLs from the json file
6. Because I know the base URL's and attributes, I was able to form absolute URL's that allow me access to different parts of azure cloud applications. These absolute URL's I was able to form are not accessible through a front end link, and they are accessible with basic user access to a tenant.

```
https://login.microsoftonline.com/
https://sts.windows.net/
https://www.microsoft.com/en-us/download/details.aspx?id=47594
https://main.iam.ad.ext.azure.com
https://download.msapproxy.net
https://management.azure.com
https://portal.cloudappsecurity.com/#/users/
https://graph.windows.net
https://portal.azure.com
https://account.activedirectory.windowsazure.com
https://support.iam.ad.azure.com
https://virtualagent.dxp.aad.azure.com
https://canary.graph.microsoft.com
https://graph.microsoft.com
https://aka.ms/caspolicies
https://petrol.office.microsoft.com/v1/feedback
https://channel9.msdn.com/Series/Azure-Active-Directory-Videos-Demos/Azure-
Active-Directory-Admin-Experience-in-the-Azure-Portal
https://go.microsoft.com/fwlink/?linkid=2003500
https://powerbi.com
```

<https://admin.microsoft.com/admintakeover>  
<https://go.microsoft.com/fwlink/?linkid=2101580>  
<https://myaccount.microsoft.com/organizations>  
<https://passwordreset.microsoftonline.com>  
<https://afd.hosting.portal.azure.net/iam/Content/Dynamic/u2HWV58U3HJU>  
<https://afd.hosting.portal.azure.net/iam/Content/Dynamic/BVheNUbNItnk>  
[https://afd.hosting.portal.azure.net/iam/Content/Dynamic/n0PWBT\\_bQRz4](https://afd.hosting.portal.azure.net/iam/Content/Dynamic/n0PWBT_bQRz4)  
<https://afd.hosting.portal.azure.net/iam/Content/Dynamic/E3cVMNEC2Qof>  
<https://afd.hosting.portal.azure.net/iam/Content/Dynamic/Q9069tjgVy30>  
<https://management.core.windows.net/>  
<https://graph.windows.net/>  
<https://graph.microsoft.com/>  
<https://canary.graph.microsoft.com/>  
<https://passwordreset.microsoftonline.com/>  
<https://appmanagement.activedirectory.microsoft.com>  
<https://api.azrbac.mspim.azure.com>  
<https://aad.portal.azure.com>

## 7. Endpoint attributes were listed within the JSON

```
"isGovernanceEnabled" : true,  
  "isCreateDirectoryB2CEnabled" : true,  
  "useMsGraphForContactsQuery" : true,  
  "isPIMEnabled" : true,  
  "userProfileAuthManageContactInformationUrl" :  
"https://go.microsoft.com/fwlink/?linkid=2003500",  
  "optionalPasswordResetEnabled" : false,  
  "otpFeatureEnabled" : true,  
  "isGalleryV2Default" : true,  
  "enableLinkedInAppFamilyStatusOptionPerUser" : true,  
  "enableEmailOTPRadioButtonUI" : false,  
  "authenticationFlowPolicyEnabled" : true,  
  "isEditFederatedSsoCertificatesEnabled" : true,
```

```
"isGroupSpecificConsentEnabled" : true,
"pollingInterval" : "30000",
"enableLinkedInAppFamilyStatusOption" : true,
"aadLoginAuthority" : "https://login.microsoftonline.com/",
"OfficePromotedApps" : true,
"isAuthenticationMethodsMenuEnabled" : true,
"privateLinkApiVersion" : "2020-03-01",
"enableMFAFeature" : true,
"appManagementEndpoint" :
"https://appmanagement.activedirectory.microsoft.com",
"enterpriseOverviewMenuEnabled" : true,
"newUserAuthMethodsFLW" : true,
"disableSecurityInfoScopingControlOnUserCount" : false,
"userProvisioningProvisioningOnDemandEndPoint" : true,
"sdkVersion" : "7.145.0.5 (production#d854af1d4d.210305-2216) Signed",
"isSSGMLCMEEnabled" : true,
"isDeleteDirectoryEnabled" : true,
"dxpAvailable" : true,
"enableADFSBlade" : true,
"microsoftGraphCanaryEndpoint" : "https://canary.graph.microsoft.com",
"isBulkOperationsEnabled" : true,
"trialsEnabled" : true,
"enableAadviserFeaturePreview" : false,
"enableGalleryV2" : true,
"bulkOperationResourceName" : "asyncprocessor",
"revokeSessionsEnabled" : true,
"devicesMezzoEnabled" : true,
"initialDomainSuffix" : "onmicrosoft.com",
"useFxArmEndpoint" : true,
"enableTroubleshoot" : true,
"isNamingPolicyEnabled" : true,
"ad2aadProvisioningEnabled" : true,
"tenantCreationDateToDisableSecurityInfoScopingControl" : "2020-08-
```



```
15T00:00:00Z",
  "serviceNowGalleryAppId" : "0919fd62-4056-4151-83f7-7cfd3fade8e3",
  "isSecurityCenterEnabled" : true,
  "emailVerifiedUsersEnabled" : true,
  "iamuxBaseUri" : "https://account.activedirectory.windowsazure.com",
  "enableSyncingDevicesDownload" : true,
  "reports" : {
    "signIns" : {
      "enableInteractiveTabView" : true,
      "enableNewUxPreview" : true
    }
  }
}
```

## REFERENCES

Images

[REDACT]