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## Azure permissions

Article • 09/20/2024 • 52 contributors

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This article lists the permissions for Azure resource providers, which are used in built-in roles. You can use these permissions in your own [Azure custom roles](#) to provide granular access control to resources in Azure. The permissions are always evolving. To get the latest permissions, use [Get-AzProviderOperation](#) or [az provider operation list](#).

Click the resource provider name in the following list to see the list of permissions.

## General

 Expand table

| Resource provider                             | Description | Azure service                |
|---|-------------|------------------------------|
| <a href="#">Microsoft.Addons</a>              |             | core                         |
| <a href="#">Microsoft.Capacity</a>            |             | core                         |
| <a href="#">Microsoft.Commerce</a>            |             | core                         |
| <a href="#">Microsoft.Marketplace</a>         |             | core                         |
| <a href="#">Microsoft.MarketplaceOrdering</a> |             | core                         |
| <a href="#">Microsoft.Quota</a>               |             | <a href="#">Azure Quotas</a> |
| <a href="#">Microsoft.Subscription</a>        |             | core                         |
| <a href="#">Microsoft.Support</a>             |             | core                         |

## Compute

 Expand table

| Resource provider             | Description | Azure service                        |
|-------------------------------|-------------|--------------------------------------|
| <a href="#">microsoft.app</a> |             | <a href="#">Azure Container Apps</a> |

|  |  |  |
|--|--|--|
| <a href="#">Microsoft.AppPlatform</a>            | A fully managed Spring Cloud service, built and operated with Pivotal.   | <a href="#">Azure Spring Apps</a>  |
| <a href="#">Microsoft.AVS</a>                    |  | <a href="#">Azure VMware Solution</a>  |
| <a href="#">Microsoft.Batch</a>                  | Cloud-scale job scheduling and compute management.   | <a href="#">Batch</a>  |
| <a href="#">Microsoft.ClassicCompute</a>         |  | Classic deployment model virtual machine                                       |
| <a href="#">Microsoft.Compute</a>                | Access cloud compute capacity and scale on demand (such as virtual machines) and only pay for the resources you use. | <a href="#">Virtual Machines</a><br><a href="#">Virtual Machine Scale Sets</a> |
| <a href="#">Microsoft.ComputeSchedule</a>        |  | <a href="#">Azure Virtual Desktop</a>  |
| <a href="#">microsoft.connectedvmwarevsphere</a> |  | <a href="#">Azure Arc-enabled VMware vSphere</a>                               |
| <a href="#">Microsoft.DesktopVirtualization</a>  | The best virtual desktop experience, delivered on Azure.   | <a href="#">Azure Virtual Desktop</a>  |
| <a href="#">Microsoft.ServiceFabric</a>          | Develop microservices and orchestrate containers on Windows or Linux.  | <a href="#">Service Fabric</a>   |


# Networking

 Expand table

| Resource provider | Description | Azure service |
|-------------------|-------------|---------------|
|-------------------|-------------|---------------|

|                          |   |  |
|--------------------------|---|--|
| Microsoft.Cdn            | Ensure secure, reliable content delivery with broad global reach.   | Content Delivery Network   |
| Microsoft.ClassicNetwork |   | Classic deployment model virtual network   |
| Microsoft.MobileNetwork  |   | Azure Private 5G Core  |
| Microsoft.Network        | Connect cloud and on-premises infrastructure and services to provide your customers and users the best possible experience. | Application Gateway<br>Azure Bastion<br>Azure DDoS Protection<br>Azure DNS<br>Azure ExpressRoute<br>Azure Firewall<br>Azure Front Door Service<br>Azure Private Link<br>Azure Route Server<br>Load Balancer<br>Network Watcher<br>Traffic Manager<br>Virtual Network<br>Virtual Network NAT<br>Virtual Network Manager<br>Virtual WAN<br>VPN Gateway |

## Storage

 Expand table

| Resource provider        | Description                               | Azure service                    |
|--------------------------|---|----------------------------------|
| Microsoft.ClassicStorage |   | Classic deployment model storage |
| Microsoft.DataShare      | A simple and safe service for sharing big | Azure Data Share                 |

|  |  |   |
|--|--|---|
|  | data with external organizations.  |   |
| <a href="#">Microsoft.ElasticSan</a>   |  | <a href="#">Azure Elastic SAN</a>                                       |
| <a href="#">Microsoft.NetApp</a>       | Enterprise-grade Azure file shares, powered by NetApp.                                 | <a href="#">Azure NetApp Files</a>                                      |
| <a href="#">Microsoft.Storage</a>      | Get secure, massively scalable cloud storage for your data, apps, and workloads.       | <a href="#">Storage</a>   |
| <a href="#">Microsoft.StorageCache</a> | File caching and Lustre file system capabilities for high-performance computing (HPC). | <a href="#">Azure HPC Cache</a><br><a href="#">Azure Managed Lustre</a> |
| <a href="#">Microsoft.StorageSync</a>  |  | <a href="#">Storage</a>   |


## Web and Mobile

 Expand table

| Resource provider                                 | Description   | Azure service                            |
|---|---|--|
| <a href="#">Microsoft.CertificateRegistration</a> | Allow an application to use its own credentials for authentication. | <a href="#">App Service Certificates</a> |
| <a href="#">Microsoft.DomainRegistration</a>      |   | <a href="#">App Service</a>              |
| <a href="#">Microsoft.Maps</a>                    | Simple and secure location APIs provide geospatial context to data. | <a href="#">Azure Maps</a>               |
| <a href="#">Microsoft.Media</a>                   | Encode, store, and stream video and audio at scale.                 | <a href="#">Media Services</a>           |


|  |   |  |
|--|---|--|
| <a href="#">Microsoft.SignalRService</a> | Add real-time web functionalities easily.                     | <a href="#">Azure SignalR Service</a>                          |
| <a href="#">microsoft.web</a>            | Quickly create and deploy mission critical web apps at scale. | <a href="#">App Service</a><br><a href="#">Azure Functions</a> |

## Containers

 Expand table

| Resource provider                           | Description  | Azure service                                  |
|---|--|--|
| <a href="#">Microsoft.ContainerInstance</a> | Easily run containers on Azure without managing servers.                             | <a href="#">Container Instances</a>            |
| <a href="#">Microsoft.ContainerRegistry</a> | Store and manage container images across all types of Azure deployments.             | <a href="#">Container Registry</a>             |
| <a href="#">Microsoft.ContainerService</a>  | Accelerate your containerized application development without compromising security. | <a href="#">Azure Kubernetes Service (AKS)</a> |
| <a href="#">Microsoft.RedHatOpenShift</a>   |  | <a href="#">Azure Red Hat OpenShift</a>        |

## Databases

 Expand table

| Resource provider               | Description                                   | Azure service                         |
|---------------------------------|---|---------------------------------------|
| <a href="#">Microsoft.Cache</a> | Power applications with high-throughput, low- | <a href="#">Azure Cache for Redis</a> |

|   |   |   |
|---|---|---|
|   | latency data access.                                    |   |
| <a href="#">Microsoft.DBforMariaDB</a>      | Managed MariaDB database service for app developers.    | <a href="#">Azure Database for MariaDB</a>  |
| <a href="#">Microsoft.DBforMySQL</a>        | Managed MySQL database service for app developers.      | <a href="#">Azure Database for MySQL</a>  |
| <a href="#">Microsoft.DBforPostgreSQL</a>   | Managed PostgreSQL database service for app developers. | <a href="#">Azure Database for PostgreSQL</a>   |
| <a href="#">Microsoft.DocumentDB</a>        | A NoSQL document database-as-a-service.                 | <a href="#">Azure Cosmos DB</a>   |
| <a href="#">Microsoft.Sql</a>               | Managed, intelligent SQL in the cloud.                  | <a href="#">Azure SQL Database</a><br><a href="#">Azure SQL Managed Instance</a><br><a href="#">Azure Synapse Analytics</a> |
| <a href="#">Microsoft.SqlVirtualMachine</a> | Host enterprise SQL Server apps in the cloud.           | <a href="#">SQL Server on Azure Virtual Machines</a>  |

## Analytics

 Expand table

| Resource provider                          | Description  | Azure service                           |
|--|--|---|
| <a href="#">Microsoft.AnalysisServices</a> | Enterprise-grade analytics engine as a service.                      | <a href="#">Azure Analysis Services</a> |
| <a href="#">Microsoft.Databricks</a>       | Fast, easy, and collaborative Apache Spark-based analytics platform. | <a href="#">Azure Databricks</a>        |
| <a href="#">Microsoft.DataFactory</a>      | Hybrid data integration at enterprise scale,                         | <a href="#">Data Factory</a>            |

|   |  |  |
|---|--|--|
|   | made easy.   |  |
| <a href="#">Microsoft.DataLakeAnalytics</a> | Distributed analytics service that makes big data easy.                            | <a href="#">Data Lake Analytics</a>          |
| <a href="#">Microsoft.DataLakeStorage</a>   | Highly scalable and cost-effective data lake solution for big data analytics.      | <a href="#">Azure Data Lake Storage Gen2</a> |
| <a href="#">Microsoft.HDInsight</a>         | Provision cloud Hadoop, Spark, R Server, HBase, and Storm clusters.                | <a href="#">HDInsight</a>                    |
| <a href="#">Microsoft.Kusto</a>             | Service for storing and running interactive analytics over Big Data.               | <a href="#">Azure Data Explorer</a>          |
| <a href="#">Microsoft.PowerBIDedicated</a>  | Manage Power BI Premium dedicated capacities for exclusive use by an organization. | <a href="#">Power BI Embedded</a>            |
| <a href="#">Microsoft.Purview</a>           |  | <a href="#">Microsoft Purview</a>            |
| <a href="#">Microsoft.Synapse</a>           |  | <a href="#">Azure Synapse Analytics</a>      |

## AI + machine learning

 Expand table

| Resource provider                        | Description  | Azure service  |
|--|--|--|
| <a href="#">Microsoft.AgFoodPlatform</a> |  | <a href="#">Microsoft Azure Data Manager for Agriculture</a> |
| <a href="#">Microsoft.BotService</a>     | Intelligent, serverless bot service that scales on demand. | <a href="#">Azure Bot Service</a>                            |



|   |  |                                     |
|---|--|-------------------------------------|
| <a href="#">Microsoft.CognitiveServices</a>       | Add smart API capabilities to enable contextual interactions.                | <a href="#">Cognitive Services</a>  |
| <a href="#">Microsoft.HealthBot</a>               |  | <a href="#">Azure AI Health Bot</a> |
| <a href="#">Microsoft.MachineLearningServices</a> | Enterprise-grade machine learning service to build and deploy models faster. | <a href="#">Machine Learning</a>    |
| <a href="#">Microsoft.Search</a>                  | Leverage search services and get comprehensive results.                      | <a href="#">Azure AI Search</a>     |

## Internet of Things

 Expand table

| Resource provider                            | Description  | Azure service  |
|--|--|--|
| <a href="#">Microsoft.AzureSphere</a>        |  | <a href="#">Azure Sphere</a>   |
| <a href="#">Microsoft.Devices</a>            | Ensure that your users are accessing your resources from devices that meet your standards for security and compliance. | <a href="#">IoT Hub</a><br><a href="#">IoT Hub Device Provisioning Service</a> |
| <a href="#">Microsoft.DeviceUpdate</a>       |  | <a href="#">Device Update for IoT Hub</a>                                      |
| <a href="#">Microsoft.DigitalTwins</a>       |  | <a href="#">Azure Digital Twins</a>  |
| <a href="#">Microsoft.IoTCentral</a>         | Experience the simplicity of SaaS for IoT, with no cloud expertise required.   | <a href="#">IoT Central</a>  |
| <a href="#">Microsoft.IoTFirmwareDefense</a> |  | <a href="#">Microsoft Defender for IoT</a>                                     |

|                           |  |                  |
|---------------------------|--|------------------|
| Microsoft.IoTSecurity     | IoT security   |                  |
| Microsoft.StreamAnalytics | Real-time data stream processing from millions of IoT devices. | Stream Analytics |

## Mixed reality

 Expand table

| Resource provider      | Description  | Azure service         |
|------------------------|--|-----------------------|
| Microsoft.MixedReality | Blend your physical and digital worlds to create immersive, collaborative experiences. | Azure Spatial Anchors |

## Integration

 Expand table

| Resource provider          | Description   | Azure service                |
|----------------------------|---|------------------------------|
| Microsoft.ApiCenter        |   | Azure API Center             |
| Microsoft.ApiManagement    | Easily build and consume Cloud APIs.                    | API Management               |
| Microsoft.AppConfiguration | Fast, scalable parameter storage for app configuration. | Azure App Configuration      |
| Microsoft.Communication    |   | Azure Communication Services |
| Microsoft.EventGrid        | Get reliable event delivery at massive scale.           | Event Grid                   |

|                                 |   |   |
|---------------------------------|---|---|
| Microsoft.EventHub              | Receive telemetry from millions of devices.                             | Event Hubs                              |
| Microsoft.HealthcareApis        |   | Azure API for FHIR                      |
| Microsoft.HealthDataAIServices  |   | Azure Health Data Services              |
| Microsoft.Logic                 | Automate the access and use of data across clouds without writing code. | Logic Apps                              |
| Microsoft.ModSimWorkbench       |   | Azure Modeling and Simulation Workbench |
| Microsoft.NotificationHubs      | Send push notifications to any platform from any back end.              | Notification Hubs                       |
| Microsoft.Relay                 | Expose services that run in your corporate network to the public cloud. | Azure Relay                             |
| Microsoft.ResourceNotifications |   | Azure Event Grid                        |
| Microsoft.ServiceBus            | Connect across private and public cloud environments.                   | Service Bus                             |
| Microsoft.ServicesHub           |   | Services Hub                            |

# Identity

 Expand table

| Resource provider | Description | Azure service |
|-------------------|-------------|---------------|
|-------------------|-------------|---------------|

|   |   |  |
|---|---|--|
| <a href="#">Microsoft.AAD</a>                   | Join Azure virtual machines to a domain without domain controllers.   | <a href="#">Microsoft Entra Domain Services</a>        |
| <a href="#">microsoft.aadiam</a>                |   |  |
| <a href="#">Microsoft.ADHybridHealthService</a> | Robust monitoring of your on-premises identity infrastructure.  | <a href="#">Microsoft Entra ID</a>                     |
| <a href="#">Microsoft.AzureActiveDirectory</a>  | Synchronize on-premises directories and enable single sign-on.  | <a href="#">Azure Active Directory B2C</a>             |
| <a href="#">Microsoft.ManagedIdentity</a>       | An automatically managed identity in Microsoft Entra ID that authenticates to any service that supports Microsoft Entra | <a href="#">Managed identities for Azure resources</a> |

## Security

 Expand table

| Resource provider                                 | Description   | Azure service  |
|---|---|--|
| <a href="#">Microsoft.AppComplianceAutomation</a> |   | <a href="#">App Compliance Automation Tool for Microsoft 365</a> |
| <a href="#">Microsoft.DataProtection</a>          |   | <a href="#">Data Protection</a>                                  |
| <a href="#">Microsoft.KeyVault</a>                | Safeguard and maintain control of keys and other secrets. | <a href="#">Key Vault</a>  |
| <a href="#">Microsoft.Security</a>                | Protect your enterprise from advanced threats             | <a href="#">Security Center</a>                                  |

|                                |                    |  |
|--------------------------------|--------------------|--|
| across hybrid cloud workloads. |                    |  |
| Microsoft.SecurityGraph        |                    |  |
| Microsoft.SecurityInsights     | Microsoft Sentinel |  |

## DevOps

 Expand table

| Resource provider         | Description   | Azure service                 |
|---------------------------|---|-------------------------------|
| Microsoft.Chaos           |   | Azure Chaos Studio            |
| Microsoft.DevCenter       |   | Azure Deployment Environments |
| Microsoft.DevTestLab      | Quickly create environments using reusable templates and artifacts.               | Azure Lab Services            |
| Microsoft.LabServices     | Set up labs for classrooms, trials, development and testing, and other scenarios. | Azure Lab Services            |
| Microsoft.LoadTestService |   | Azure Load Testing            |
| Microsoft.VisualStudio    | The powerful and flexible environment for developing applications in the cloud.   | Azure DevOps                  |

## Migration

 Expand table

| Resource provider                       | Description   | Azure service                                    |
|---|---|--|
| <a href="#">Microsoft.DataBox</a>       | Move stored or in-flight data to Azure quickly and cost-effectively.            | <a href="#">Azure Data Box</a>                   |
| <a href="#">Microsoft.DataBoxEdge</a>   | Appliances and solutions for data transfer to Azure and edge compute.           | <a href="#">Azure Stack Edge</a>                 |
| <a href="#">Microsoft.DataMigration</a> | Simplify on-premises database migration to the cloud.                           | <a href="#">Azure Database Migration Service</a> |
| <a href="#">Microsoft.Migrate</a>       | Easily discover, assess, right-size, and migrate your on-premises VMs to Azure. | <a href="#">Azure Migrate</a>                    |
| <a href="#">Microsoft.OffAzure</a>      |   | <a href="#">Azure Migrate</a>                    |

## Monitor

 Expand table

| Resource provider                          | Description   | Azure service                         |
|--|---|---------------------------------------|
| <a href="#">Microsoft.AlertsManagement</a> | Analyze all of the alerts in your Log Analytics repository.             | <a href="#">Azure Monitor</a>         |
| <a href="#">Microsoft.Dashboard</a>        |   | <a href="#">Azure Managed Grafana</a> |
| <a href="#">Microsoft.Insights</a>         | Full observability into your applications, infrastructure, and network. | <a href="#">Azure Monitor</a>         |

|  |  |                               |
|--|--|-------------------------------|
| <a href="#">microsoft.monitor</a>              |  | <a href="#">Azure Monitor</a> |
| <a href="#">Microsoft.Operationallnsights</a>  |  | <a href="#">Azure Monitor</a> |
| <a href="#">Microsoft.OperationsManagement</a> | A simplified management solution for any enterprise. | <a href="#">Azure Monitor</a> |

## Management and governance

 Expand table

| Resource provider                         | Description   | Azure service  |
|---|---|--|
| <a href="#">Microsoft.Advisor</a>         | Your personalized Azure best practices recommendation engine. | <a href="#">Azure Advisor</a>  |
| <a href="#">Microsoft.Authorization</a>   |   | <a href="#">Azure Policy</a><br><a href="#">Azure RBAC</a><br><a href="#">Azure Resource Manager</a> |
| <a href="#">Microsoft.Automation</a>      | Simplify cloud management with process automation.            | <a href="#">Automation</a>   |
| <a href="#">Microsoft.Billing</a>         | Manage your subscriptions and see usage and billing.          | <a href="#">Cost Management + Billing</a>  |
| <a href="#">Microsoft.BillingBenefits</a> |   | <a href="#">Azure savings plans</a>  |
| <a href="#">Microsoft.Blueprint</a>       | Enabling quick, repeatable creation of governed environments. | <a href="#">Azure Blueprints</a>   |
| <a href="#">Microsoft.Carbon</a>          |   | <a href="#">Azure carbon optimization</a>  |

|  |   |   |
|--|---|---|
| <a href="#">Microsoft.Consumption</a>        | Programmatic access to cost and usage data for your Azure resources.  | <a href="#">Cost Management</a>   |
| <a href="#">Microsoft.CostManagement</a>     | Optimize what you spend on the cloud, while maximizing cloud potential.   | <a href="#">Cost Management</a>   |
| <a href="#">Microsoft.CustomerLockbox</a>    | Interface for customers to review and approve or reject customer data access requests.                                | <a href="#">Customer Lockbox for Microsoft Azure</a>                      |
| <a href="#">Microsoft.Features</a>           |   | <a href="#">Azure Resource Manager</a>                                    |
| <a href="#">Microsoft.GuestConfiguration</a> | Audit settings inside a machine using Azure Policy.   | <a href="#">Azure Policy</a>  |
| <a href="#">Microsoft.Intune</a>             | Enable your workforce to be productive on all their devices, while keeping your organization's information protected. |   |
| <a href="#">Microsoft.Maintenance</a>        |   | <a href="#">Azure Maintenance</a><br><a href="#">Azure Update Manager</a> |
| <a href="#">Microsoft.ManagedServices</a>    |   | <a href="#">Azure Lighthouse</a>  |
| <a href="#">Microsoft.Management</a>         | Use management groups to efficiently apply governance controls and manage groups of Azure subscriptions.              | <a href="#">Management Groups</a>   |
| <a href="#">Microsoft.PolicyInsights</a>     | Summarize policy states for the subscription level policy definition.   | <a href="#">Azure Policy</a>  |



|  |  |  |
|--|--|--|
| <a href="#">Microsoft.Portal</a>           | Build, manage, and monitor all Azure products in a single, unified console.  | <a href="#">Azure portal</a>               |
| <a href="#">Microsoft.RecoveryServices</a> | Hold and organize backup data for various Azure services such as IaaS VMs (Linux or Windows) and Azure SQL databases.            | <a href="#">Site Recovery</a>              |
| <a href="#">Microsoft.ResourceGraph</a>    | Powerful tool to query, explore, and analyze your cloud resources at scale.  | <a href="#">Azure Resource Graph</a>       |
| <a href="#">Microsoft.ResourceHealth</a>   | Diagnose and get support for service problems that affect your Azure resources.  | <a href="#">Azure Service Health</a>       |
| <a href="#">Microsoft.Resources</a>        | Deployment and management service for Azure that enables you to create, update, and delete resources in your Azure subscription. | <a href="#">Azure Resource Manager</a>     |
| <a href="#">Microsoft.Solutions</a>        | Find the solution to meet the needs of your application or business.   | <a href="#">Azure Managed Applications</a> |
| <a href="#">Microsoft.Workloads</a>        |  | <a href="#">SAP on Azure</a>               |

## Hybrid + multicloud

 Expand table

| Resource provider | Description | Azure service |
|-------------------|-------------|---------------|
|-------------------|-------------|---------------|

|   |   |  |
|---|---|--|
| <a href="#">Microsoft.AzureStack</a>              | Build and run innovative hybrid applications across cloud boundaries. | <a href="#">Azure Stack</a>                  |
| <a href="#">Microsoft.AzureStackHCI</a>           |   | <a href="#">Azure Stack HCI</a>              |
| <a href="#">Microsoft.ExtendedLocation</a>        |   | <a href="#">Custom locations</a>             |
| <a href="#">Microsoft.HybridCompute</a>           |   | <a href="#">Azure Arc</a>                    |
| <a href="#">Microsoft.HybridConnectivity</a>      |   |  |
| <a href="#">Microsoft.HybridContainerService</a>  |   |  |
| <a href="#">Microsoft.Kubernetes</a>              |   | <a href="#">Azure Arc-enabled Kubernetes</a> |
| <a href="#">Microsoft.KubernetesConfiguration</a> |   | <a href="#">Azure Arc-enabled Kubernetes</a> |
| <a href="#">Microsoft.ResourceConnector</a>       |   |  |

## Next steps

- [Match resource provider to service](#)
- [Azure built-in roles](#)
- [Cloud Adoption Framework: Resource access management in Azure](#)

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