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# Azure permissions

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

## Storage

 Expand table

Resource provider	Description	Azure service
<a href="#">Microsoft.ClassicStorage</a>		Classic deployment model storage
<a href="#">Microsoft.DataShare</a>	A simple and safe service for sharing big data with external organizations.	<a href="#">Azure Data Share</a>

Microsoft.ElasticSan		Azure Elastic SAN
Microsoft.NetApp	Enterprise-grade Azure file shares, powered by NetApp.	Azure NetApp Files
Microsoft.Storage	Get secure, massively scalable cloud storage for your data, apps, and workloads.	Storage
Microsoft.StorageCache	File caching and Lustre file system capabilities for high-performance computing (HPC).	Azure HPC Cache Azure Managed Lustre
Microsoft.StorageSync		Storage

## Web and Mobile

 Expand table

Resource provider	Description	Azure service
Microsoft.CertificateRegistration	Allow an application to use its own credentials for authentication.	App Service Certificates
Microsoft.DomainRegistration		App Service
Microsoft.Maps	Simple and secure location APIs provide geospatial context to data.	Azure Maps
Microsoft.Media	Encode, store, and stream video and audio at scale.	Media Services
Microsoft.SignalRService	Add real-time web functionalities easily.	Azure SignalR Service
microsoft.web	Quickly create and deploy mission critical web apps at scale.	App Service Azure Functions

## Containers

 Expand table

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


## Databases

 Expand table

Resource provider	Description	Azure service
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<a href="#">Microsoft.Cache</a>	Power applications with high-throughput, low-latency data access.	<a href="#">Azure Cache for Redis</a>
<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> <a href="#">Azure SQL Managed Instance</a> <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, made easy.	<a href="#">Data Factory</a>
<a href="#">Microsoft.DataLakeAnalytics</a>	Distributed analytics service that makes big data easy.	<a href="#">Data Lake Analytics</a>
<a href="#">Microsoft.DataLakeStore</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
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Microsoft.AgFoodPlatform		Microsoft Azure Data Manager for Agriculture
Microsoft.BotService	Intelligent, serverless bot service that scales on demand.	Azure Bot Service
Microsoft.CognitiveServices	Add smart API capabilities to enable contextual interactions.	Cognitive Services
Microsoft.HealthBot		Azure AI Health Bot
Microsoft.MachineLearningServices	Enterprise-grade machine learning service to build and deploy models faster.	Machine Learning
Microsoft.Search	Leverage search services and get comprehensive results.	Azure AI Search

## Internet of Things

 Expand table


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


<a href="#">Microsoft.ApiManagement</a>	Easily build and consume Cloud APIs.	<a href="#">API Management</a>
<a href="#">Microsoft.AppConfiguration</a>	Fast, scalable parameter storage for app configuration.	<a href="#">Azure App Configuration</a>
<a href="#">Microsoft.Communication</a>		<a href="#">Azure Communication Services</a>
<a href="#">Microsoft.EventGrid</a>	Get reliable event delivery at massive scale.	<a href="#">Event Grid</a>
<a href="#">Microsoft.EventHub</a>	Receive telemetry from millions of devices.	<a href="#">Event Hubs</a>
<a href="#">Microsoft.HealthcareApis</a>		<a href="#">Azure API for FHIR</a>
<a href="#">Microsoft.HealthDataAIServices</a>		<a href="#">Azure Health Data Services</a>
<a href="#">Microsoft.Logic</a>	Automate the access and use of data across clouds without writing code.	<a href="#">Logic Apps</a>
<a href="#">Microsoft.ModSimWorkbench</a>		<a href="#">Azure Modeling and Simulation Workbench</a>
<a href="#">Microsoft.NotificationHubs</a>	Send push notifications to any platform from any back end.	<a href="#">Notification Hubs</a>
<a href="#">Microsoft.Relay</a>	Expose services that run in your corporate network to the public cloud.	<a href="#">Azure Relay</a>
<a href="#">Microsoft.ResourceNotifications</a>		<a href="#">Azure Event Grid</a>
<a href="#">Microsoft.ServiceBus</a>	Connect across private and public cloud environments.	<a href="#">Service Bus</a>
<a href="#">Microsoft.ServicesHub</a>		<a href="#">Services Hub</a>

## 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
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Microsoft.AppComplianceAutomation		App Compliance Automation Tool for Microsoft 365
Microsoft.DataProtection		Data Protection
Microsoft.KeyVault	Safeguard and maintain control of keys and other secrets.	Key Vault
Microsoft.Security	Protect your enterprise from advanced threats across hybrid cloud workloads.	Security Center
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
Microsoft.DataBox	Move stored or in-flight data to Azure quickly and cost-effectively.	Azure Data Box
Microsoft.DataBoxEdge	Appliances and solutions for data transfer to Azure and edge compute.	Azure Stack Edge
Microsoft.DataMigration	Simplify on-premises database migration to the cloud.	Azure Database Migration Service
Microsoft.Migrate	Easily discover, assess, right-size, and migrate your on-premises VMs to Azure.	Azure Migrate
Microsoft.OffAzure		Azure Migrate

## 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.OperationsManageme nt</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> <a href="#">Azure RBAC</a> <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.	



Microsoft.Maintenance		Azure Maintenance Azure Update Manager
Microsoft.ManagedServices		Azure Lighthouse
Microsoft.Management	Use management groups to efficiently apply governance controls and manage groups of Azure subscriptions.	Management Groups
Microsoft.PolicyInsights	Summarize policy states for the subscription level policy definition.	Azure Policy
Microsoft.Portal	Build, manage, and monitor all Azure products in a single, unified console.	Azure portal
Microsoft.RecoveryServices	Hold and organize backup data for various Azure services such as IaaS VMs (Linux or Windows) and Azure SQL databases.	Site Recovery
Microsoft.ResourceGraph	Powerful tool to query, explore, and analyze your cloud resources at scale.	Azure Resource Graph
Microsoft.ResourceHealth	Diagnose and get support for service problems that affect your Azure resources.	Azure Service Health
Microsoft.Resources	Deployment and management service for Azure that enables you to create, update, and delete resources in your Azure subscription.	Azure Resource Manager
Microsoft.Solutions	Find the solution to meet the needs of your application or business.	Azure Managed Applications
Microsoft.Workloads		SAP on Azure

## Hybrid + multicloud

 Expand table

Resource provider	Description	Azure service
Microsoft.AzureStack	Build and run innovative hybrid applications across cloud boundaries.	Azure Stack
Microsoft.AzureStackHCI		Azure Stack HCI
Microsoft.ExtendedLocation		Custom locations
Microsoft.HybridCompute		Azure Arc
Microsoft.HybridConnectivity		
Microsoft.HybridContainerService		
Microsoft.Kubernetes		Azure Arc-enabled Kubernetes
Microsoft.KubernetesConfiguration		Azure Arc-enabled Kubernetes
Microsoft.ResourceConnector		

# Next steps

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

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