Manage Identity and Access

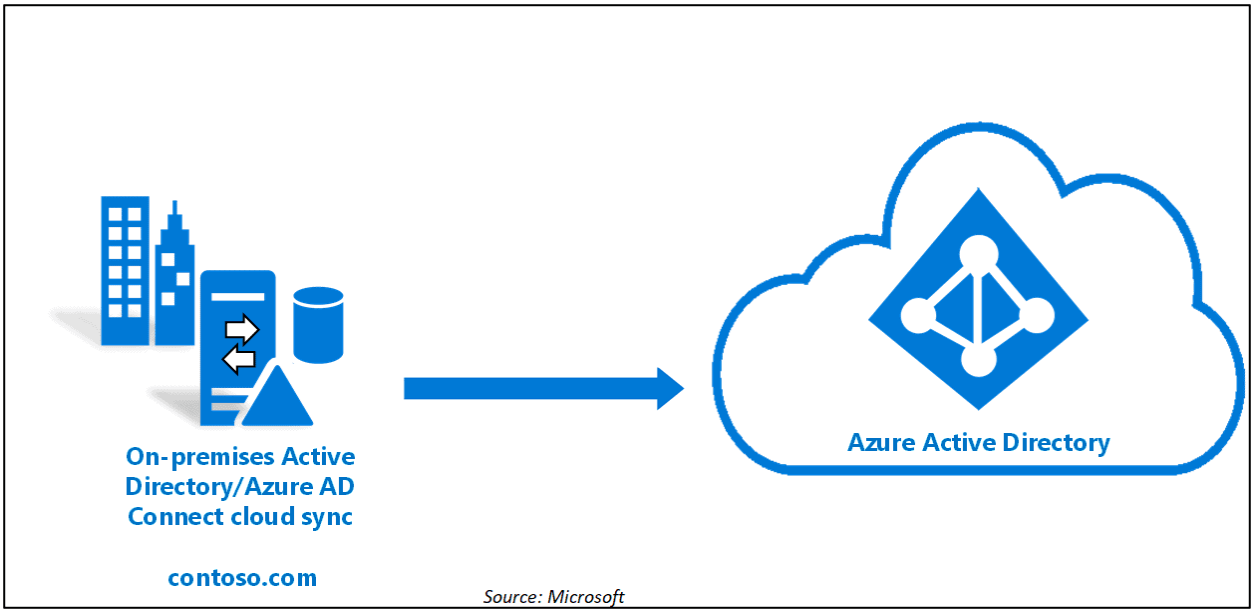
Q1. What's the relationship between Azure AD, Microsoft 365, and Azure?

- Azure Active Directory gives you a single identity and access to all web services. Whether you're using Microsoft 365, Azure, Intune, or another service, we've got you covered.
- User accounts in one or more Azure AD instances are created for all users that are set up to use web services. These accounts can be used to get free Azure AD features like cloud application access.
- Enterprise Mobility + Security, a premium Azure AD service, complements other web services like Microsoft 365 and Azure by providing full enterprise-scale management and security solutions.

Azure Active Directory

Azure Active Directory (Azure AD) is a Microsoft cloud-based identity and access management (Authenticating and Authorizing tool) service that enables your employees to sign in and access resources on the following sites:

- Microsoft 365, the Azure portal, and a slew of other SaaS services are just a few examples.
- Internal resources, such as an intranet and network apps, as well as cloud apps developed by your firm.

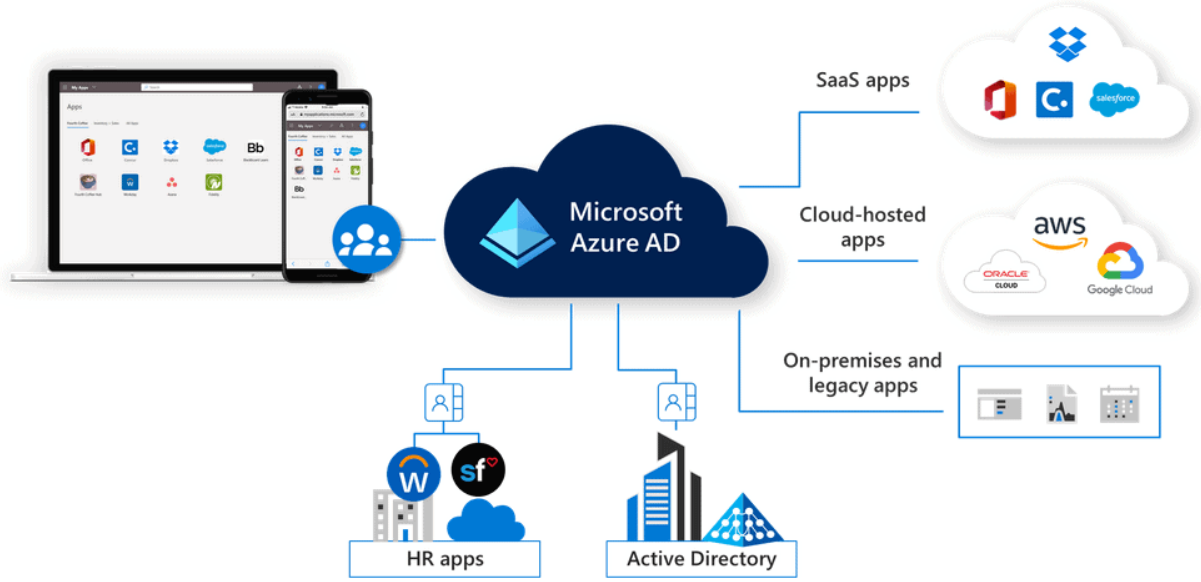


Source: Microsoft

Azure AD Features

Some of the important features of Azure AD are:

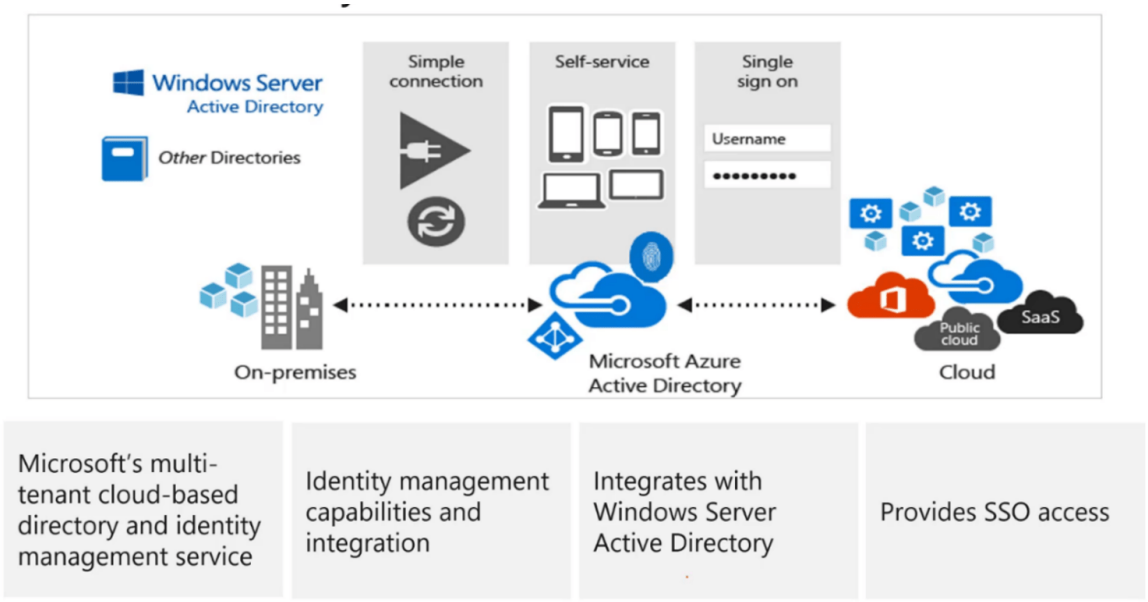
- **Management of applications:** Manage on-premises and cloud apps, as well as single sign-on, the MyApps site, and any SaaS apps.
- **Authentication**: You can be fairly granular with your authentication settings for improved security and control, whether it's giving self-service password change or MFA requirements.
- **Identity management:** Azure AD includes built-in governance tools that allow you to manage identity and access lifecycles and create privileged access conditions to keep your identity ecosystem healthy.



source:Microsoft

Azure AD vs ADDS

On-premises Active Directory has a hierarchical framework, unlike Azure AD, a cloud service that does not require infrastructure. In the below image, you can see that we have a concept of tenants in Azure AD, unlike forest, domains, and OU in ADDS (active directory domain services).



Source: Microsoft

Roles of Azure AD

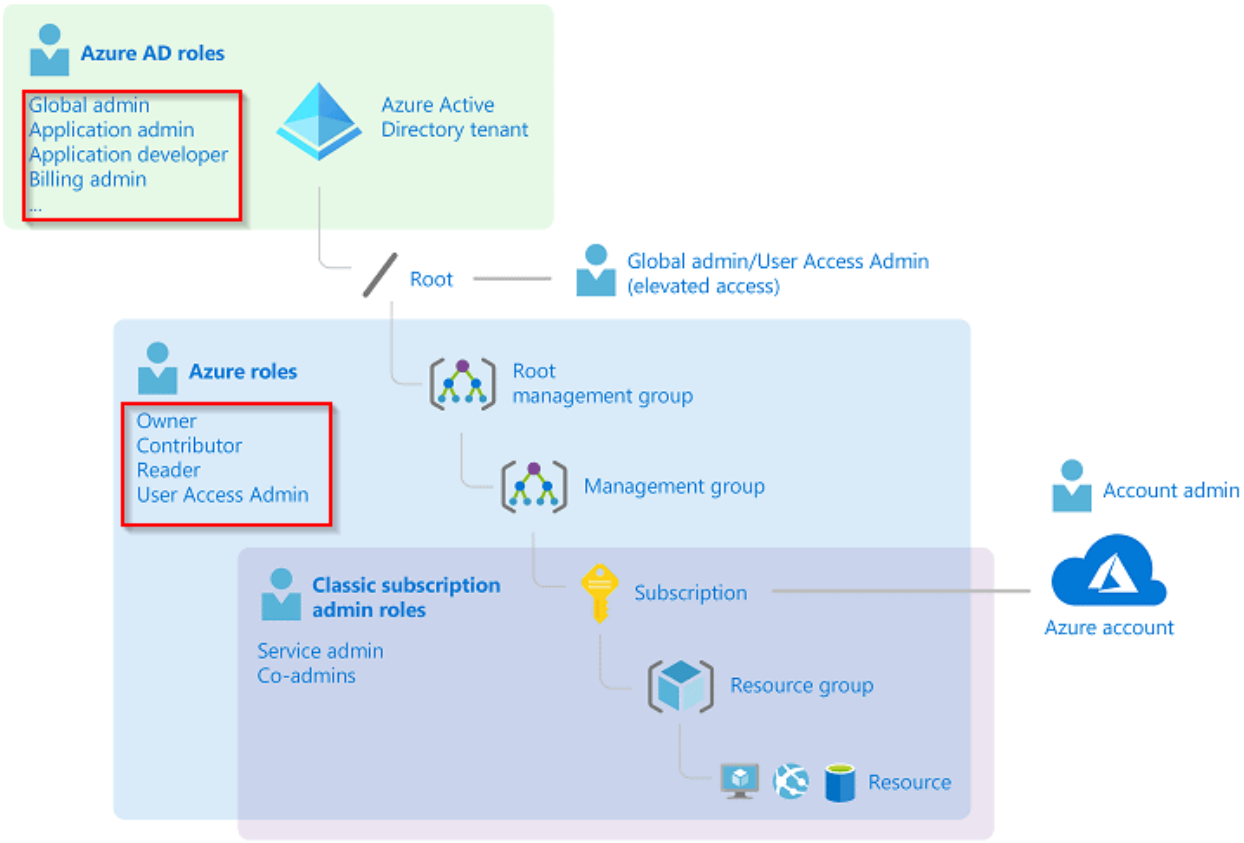
The term “role” refers to a person’s position on a team. You can choose a role in an organization based on your needs and responsibilities. Admins will usually assign you a role, and if you’re an admin, you should be familiar with the many roles available in Azure.

The following are some of the most important roles:

Built-in Role	Description
Global Administrator	Users with this role have access to all administrative features in Azure Active Directory
Security Administrator	Users with this role have permissions to manage security-related features in the Microsoft 365 Security Center, Security Center, Azure Active Directory Identity Protection, Azure Information Protection, and Office 365 Security & Compliance Center
Billing Administrator	Makes purchases, manages subscriptions, manages support tickets, and monitors service health
Global Reader	Users in this role can read settings and administrative information across Microsoft 365 services but can't take management actions.

Source: Microsoft

Q2. What are the differences between Owner and Global Administrator?
Ans. The Owner role for Azure resources is assigned to the individual who joins up for an Azure subscription by default. The Global Administrator role for the directory is assigned by default to the individual who registers up for an Azure subscription. All Azure AD directory functionalities are accessible to the Global Administrator.

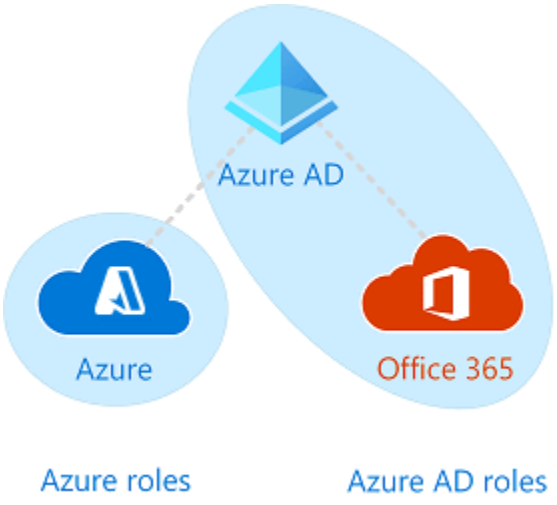


Source: Microsoft

Q3. Differences between Azure roles and Azure AD roles.

Azure roles	Azure AD roles
Manage access to Azure resources	Manage access to Azure Active Directory resources
Supports custom roles	Supports custom roles
Scope can be specified at multiple levels (management group, subscription, resource group, resource)	Scope can be specified at the tenant level (organization-wide), administrative unit, or on an individual object (for example, a specific application)
Role information can be accessed in Azure portal, Azure CLI, Azure PowerShell, Azure Resource Manager templates, REST API	Role information can be accessed in Azure admin portal, Microsoft 365 admin center, Microsoft Graph, AzureAD PowerShell

Q4. Do Azure roles and Azure AD roles overlap?
Ans. By default, Azure roles and Azure AD roles do not overlap, although some Azure AD roles, such as the Global Administrator and User Administrator roles, do span Azure AD and Microsoft 365.



If a Global Administrator chooses the Access management for Azure resources to switch in the Azure portal to elevate their access, the Global Administrator will be granted the User Access Administrator position (an Azure role) on all subscriptions for a tenancy.

The User Access Administrator position allows the user to grant access to Azure resources to other users.

Q5. Does Azure AD help me manage my on-premises infrastructure?
Ans. Yes, Azure AD Connect Health is included in the Azure AD Premium edition. Azure AD Connect Health allows you to keep track of your on-premises identity infrastructure and synchronization services and obtain insight into them.

Azure AD Identity Protection

Identity Protection is a tool that allows organizations to accomplish three key tasks:

- Automate the detection and remediation of identity-based risks.
- Investigate risks using data in the portal.
- Export risk detection data to your SIEM.

Q6. Why automation is important in security?
Ans. Each day, machine learning and heuristic systems provide risk scores for 18 billion login attempts for over 800 million distinct accounts, 300 million of which are discernibly done by adversaries (entities like criminal actors, hackers). This is a fair answer to why we need automation because manually, it is next to impossible to deal with this number of data.

Risk events

Each detected suspicious action is stored in a record called a risk event.

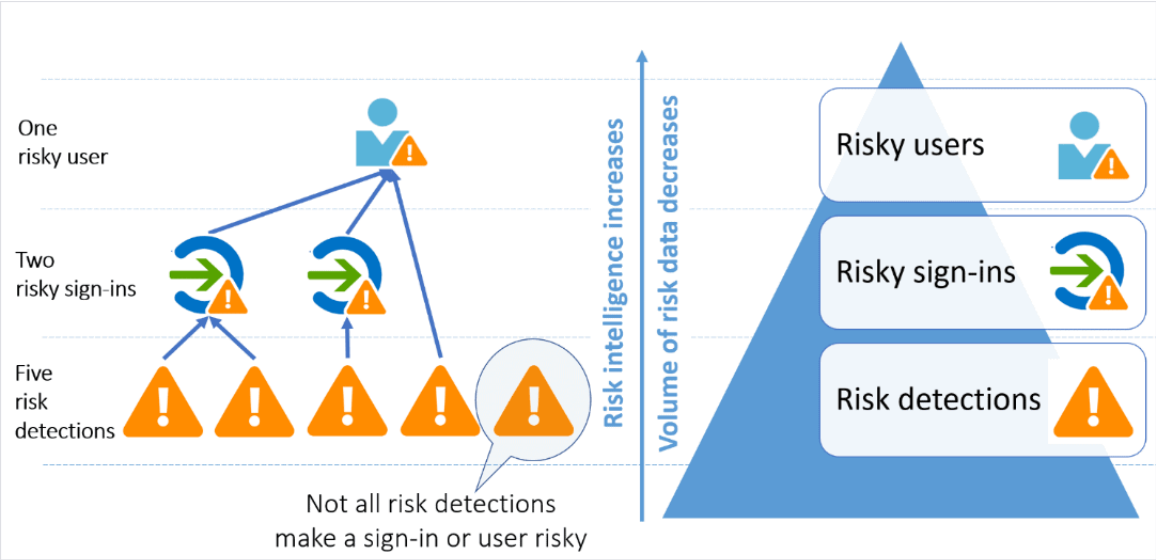
Identity Protection identifies risks of many types, including:

- Anonymous IP address use
- Atypical travel
- Malware linked IP address
- Unfamiliar sign-in properties
- Leaked credentials
- Password spray
- and more.

The risk signals can trigger remediation efforts such as requiring users to: perform Azure AD Multi-Factor Authentication, reset their password using a self-service password reset, or blocking until an administrator takes action.

Q7. What is the difference between the "Activity from anonymous IP address" and "Anonymous IP address" detections?
Ans. Azure AD Identity Protection is the source of the "Anonymous IP address" detection, while MCAS is used for the "Activity from anonymous IP address" detection (Microsoft Cloud App Security). While they have similar names and there may be some overlap in these signals, their back-end detections are different.
Microsoft Cloud App Security natively integrates with leading Microsoft solutions and is designed with security professionals in mind. It provides simple deployment, centralized management, and innovative automation capabilities.

Risk Investigation



Source: Microsoft

Administrators can review detections and take manual action on them if needed. There are three key reports that administrators use for investigations in Identity Protection:

- Risky users
- Risky sign-ins
- Risk detections

Identity Protection categorizes risk into three tiers: **low, medium, and high**.

Q8. Why can't I set my own risk levels for each risk detection?
Ans. Identity Protection risk levels are determined by the precision of detection and are aided by our supervised machine learning. Administrators can include/exclude specific individuals/groups from the User Risk and Sign-In Risk Policies to customize the experience users receive.

Identity Protection requires users to be a Security Reader, Security Operator, Security Administrator, Global Reader, or Global Administrator to access.

Role	Can do	Can't do
Global administrator	Full access to Identity Protection	
Security administrator	Full access to Identity Protection	Reset password for a user
Security operator	View all Identity Protection reports and Overview blade Dismiss user risk, confirm safe sign-in, confirm compromise	Configure or change policies Reset password for a user Configure alerts
Security reader	View all Identity Protection reports and Overview blade	Configure or change policies Reset password for a user Configure alerts Give feedback on detections

User risk policy & Sign-in risk

User risk is a calculation of the probability that an Identity has been compromised.

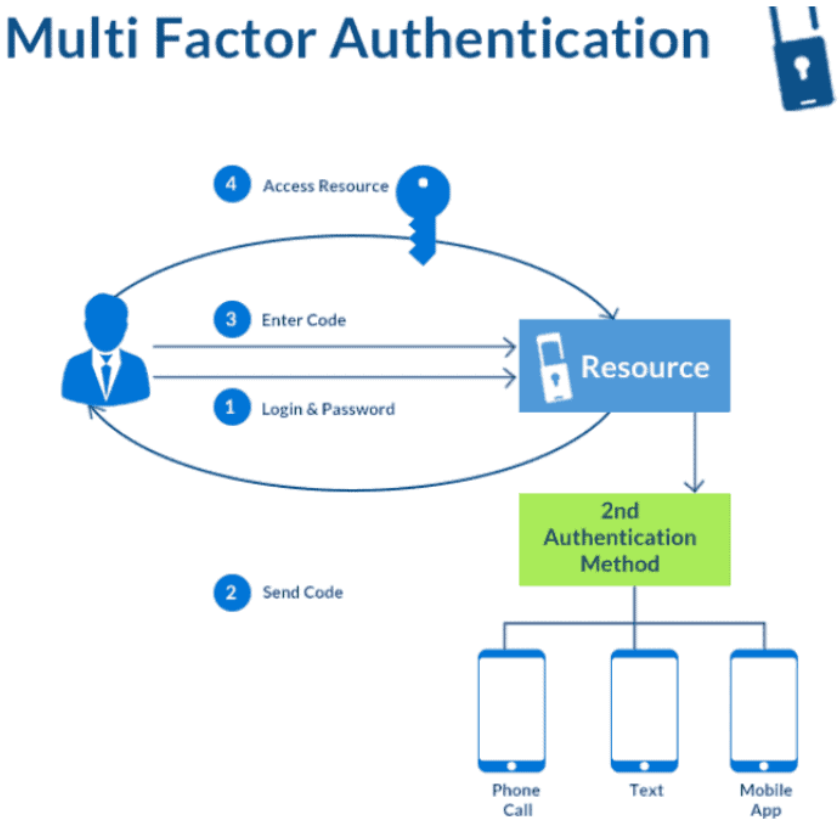
- Admins can decide based on the risk score signal to enforce organizational requirements.
- Admins can choose to block access, allow access or allow but required password change.
- Admins can choose to respond automatically based on a specific user's risk level.

Sign-in-risk represents the probability that even an authentication request isn't authorized by the identity owner.

- Applied to all browser traffic and sign-ins using modern authentication
- Provides the condition (risk level) and action (block or allow)
- Automatically responds to a specific risk level.

Azure Multifactor Authentication Concepts

Multi-factor authentication is a method in which a person is asked for an additional form of identification during the sign-in process, such as entering a code on their phone or providing a fingerprint scan.



Two or more of the following authentication methods are required for Azure AD Multi-Factor Authentication to work:

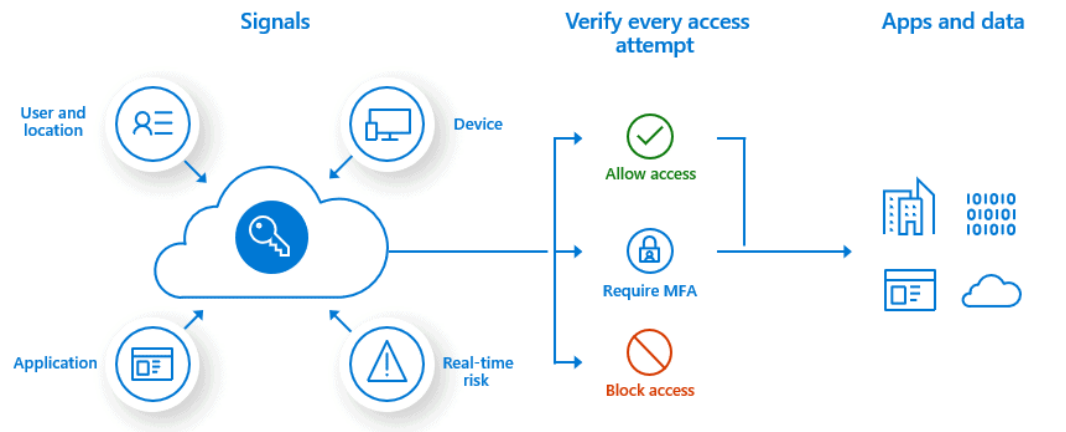
- Something you already know, such as a password.
- Something you possess, such as a trusted device that is difficult to copy, such as a phone or a hardware key.
- Biometrics, such as a fingerprint or a facial scan, is a way to identify who you are.

The following additional forms of verification can be used with Azure AD Multi-Factor Authentication:

- Microsoft Authenticator app
- OATH Hardware token (preview)
- OATH Software token
- SMS
- Voice call

Azure AD Conditional Access

Conditional Access is the tool used by Azure Active Directory to make decisions, and enforce organizational policies.

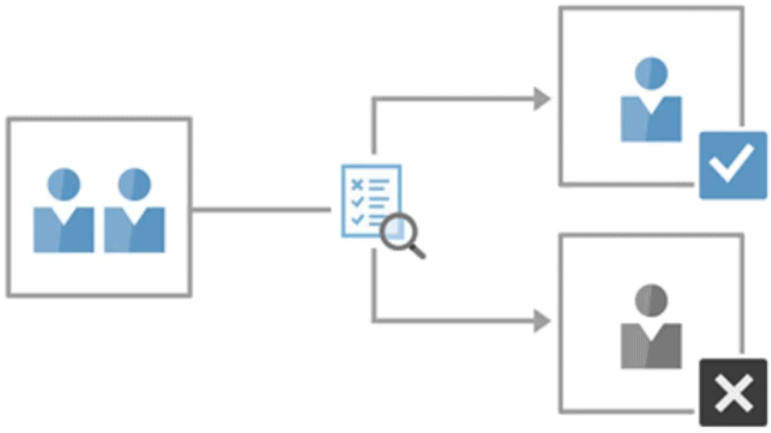


Source: Microsoft

At their most basic level, conditional access policies are if-then statements. A user must perform an action in order to gain access to a resource. For example, if a payroll manager wants to access the payroll program, he or she must use multi-factor authentication.

Access Review

Azure Active Directory (Azure AD) access reviews make it easier for businesses to manage group memberships, access to enterprise apps, and role assignments. User's access can be checked on a regular basis to verify that only authorized individuals have access.



Q9. Why are access reviews important?

Ans. Azure Active Directory allows you to collaborate with both internal and external users. Users can join groups, invite guests, connect to cloud apps, and work remotely from their work or personal

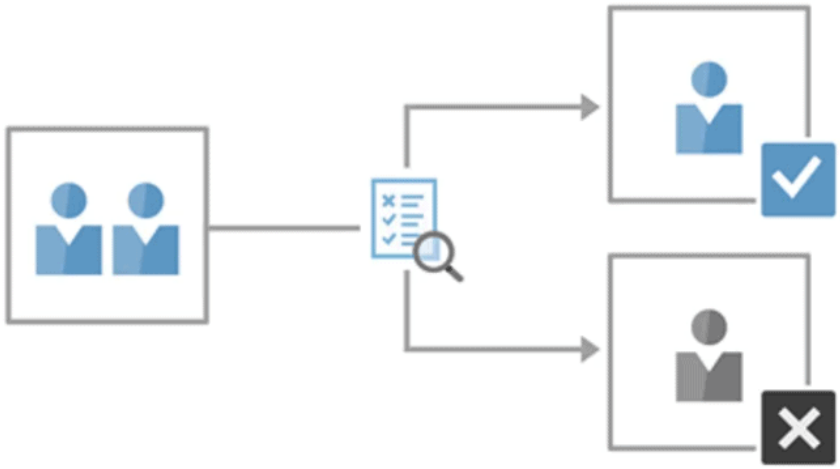
devices. The convenience of self-service has necessitated the development of better access management tools.

- As new employees join, how do you ensure they have the access they need to be productive?
- As people move teams or leave the company, how do you ensure that their old access is removed?
- Excessive access rights can lead to compromises.

Azure Policy

Azure Policy helps to enforce organizational standards and to assess compliance at scale.

Azure Policy compares the properties of Azure resources to business rules to evaluate them. Policy definitions are business rules that are defined in JSON format.



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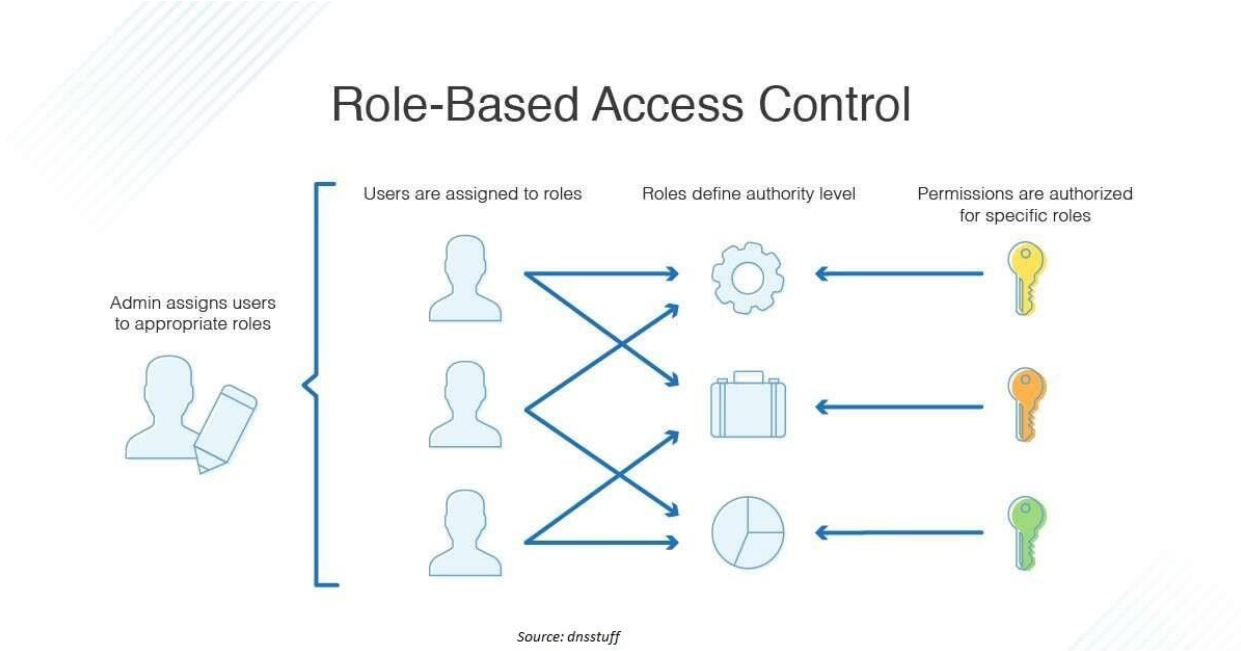
RBAC

Azure RBAC (role-based access control) allows you to govern who has access to Azure resources, what they can do with them, and what areas they have access to.



Q10. What can I do with Azure RBAC?

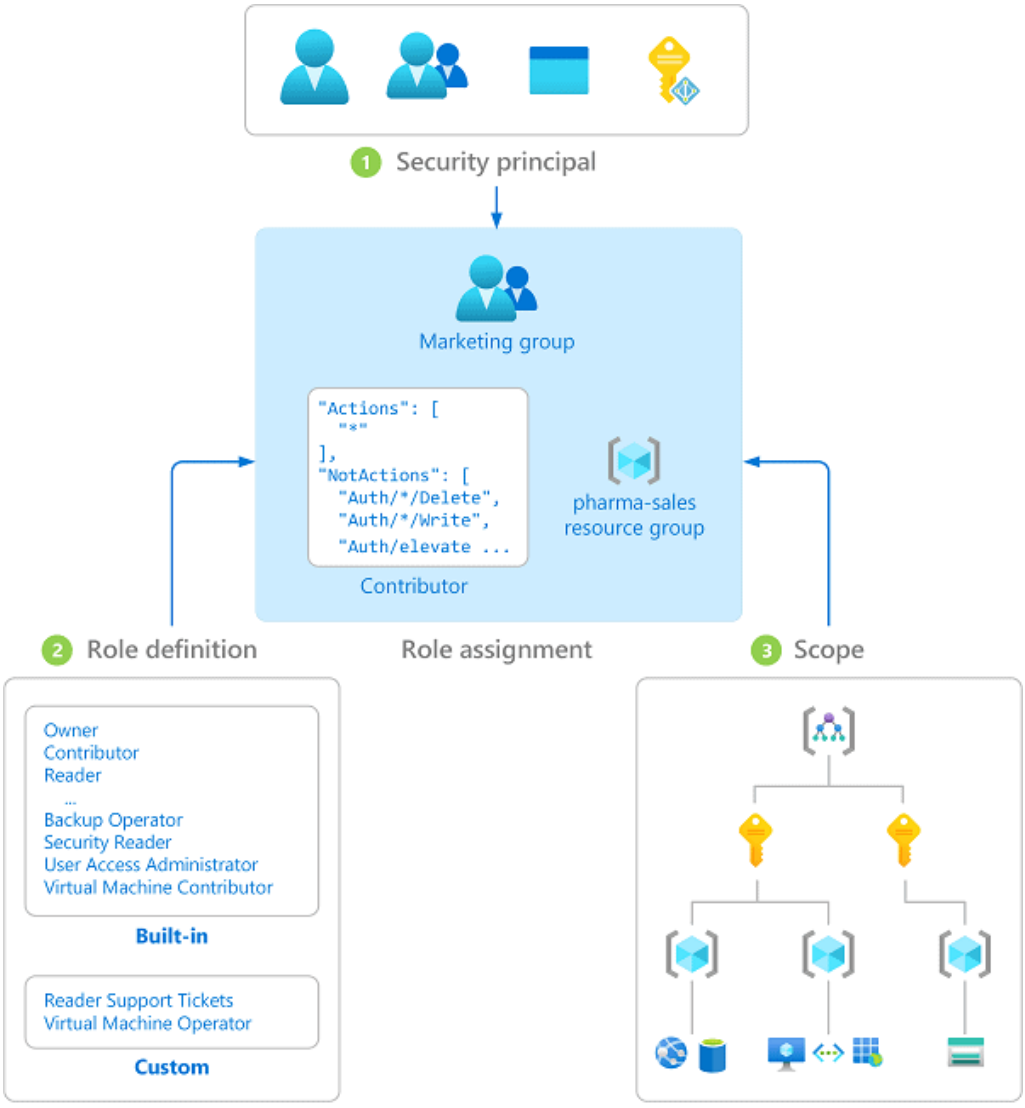
Ans. Here are some examples of what Azure RBAC can be used for:

- Allow one person to administer virtual machines and another to control virtual networks in a subscription.
- Permit a DBA group to handle SQL databases that are part of a subscription.
- Allow a person to control all virtual machines, websites, and subnets in a resource group.
- Allow a resource group's resources to be accessed by an application.

Role Assignments

A role assignment is the process of granting access to a user, group, service principal, or managed identity at a specific scope by attaching a role definition to them.

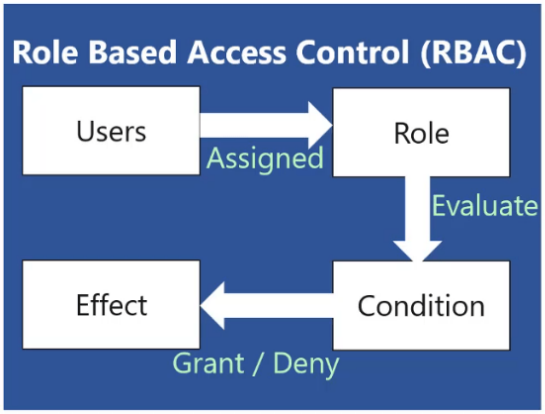
- Create a role assignment to grant access, and remove a role assignment to revoke access.

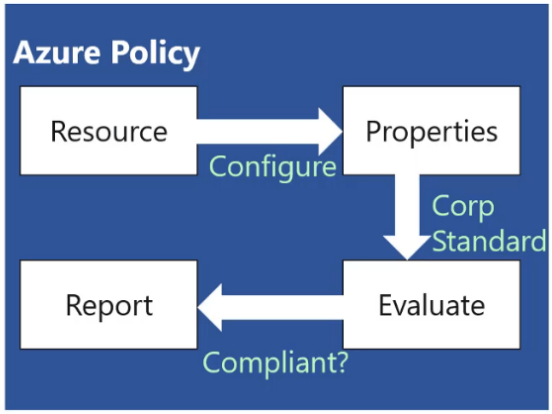


Source: Microsoft

RBAC vs. Policy

Azure RBAC manages who has access to Azure resources, what area they have access to, and what they can do with those resources.





Identity management is the process of controlling, authenticating, and authorizing security principals i.e services, applications, users, groups, etc.

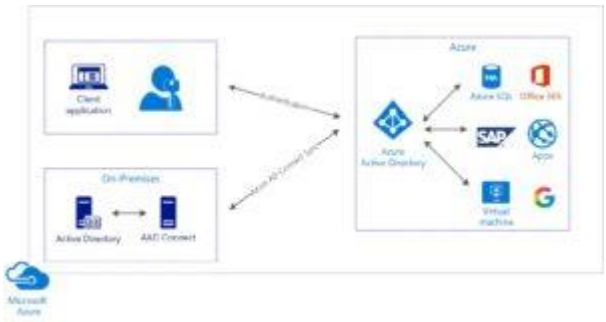
Azure provides security through additional levels of validation, monitoring suspicious activity through advanced security reporting, auditing, and alerting helps mitigate potential security issues. The security services offered by Azure are:

Azure Active Directory

1. Azure AD is Microsoft's **cloud-based** identity and access management service which is a **directory of users** in Azure.
2. It creates and manages a single identity for each user across the enterprise, keeping users, groups, and devices in sync.
3. Provides SSO(Single sign-on) access to applications, including thousands of pre-integrated SaaS apps.
4. Enables application access security by enforcing rules-based **Multi-Factor Authentication** for both on-premises & cloud applications.
5. Provisions secure remote access to on-premises web applications through **Azure AD Application Proxy**.
6. **Azure AD device registration** provides the device with an identity that it uses to authenticate the device when a user signs in.

Azure AD Application Proxy provides remote access and SSO for many types of on-premises web applications with thousands of SaaS applications that Azure AD supports.
Azure AD B2C is a global, identity management service for consumer-facing applications with millions of identities and is highly available. It can be integrated across mobile and web platforms. The consumers can sign in to all the applications through customizable experiences.

Note: SSO means being able to access all the applications and resources that you need to do business, by signing in only once using a single user account.



Azure Multi-Factor Authentication

1. It is a method of authentication that requires the use of **more than one verification method**
2. It adds a **critical second layer** of security to user sign-ins and transactions.
3. It offers a range of **verification options**: phone calls, text messages, mobile app notifications, verification codes, and third-party OAuth tokens.