Microsoft

SC-300T00A: Microsoft Identity and Access Administrator

Microsoft

Implement access management for apps

Outline

- What is an app?
- Plan and design the integration of enterprise apps for single sign-on (SSO)
- Implement, and monitor the integration of enterprise apps
- Implement app registrations

Learning objectives

After completing this module, you will be able to:

1. Configure and implement identity solutions for applications in Azure.
2. Compare and contrast managed identities and service principals.
3. Register and manage both apps and enterprise apps.

Microsoft

Explore a cloud app

August 2023

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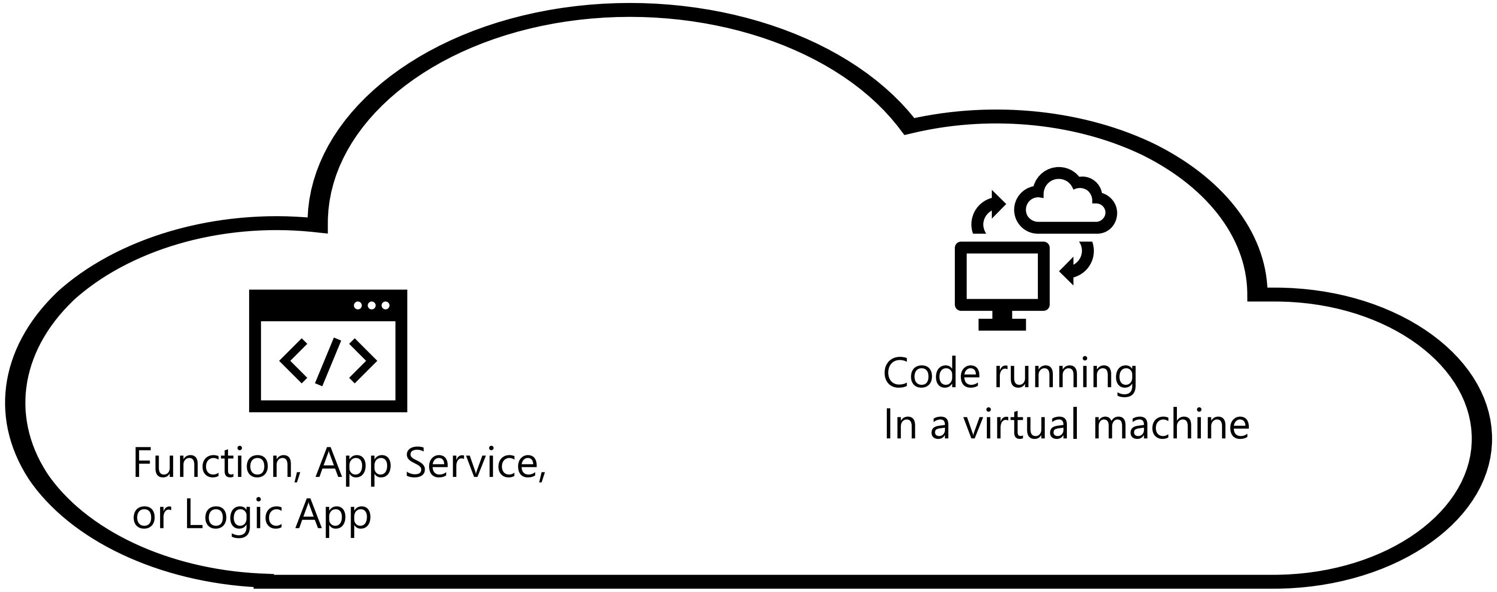
After completing this section, you will be able to:

1. Explain the benefits of registering apps in Microsoft Entra ID.
2. Compare and contrast single and multitenant apps.
3. Describe what happens and the primary settings when an app is registered.
4. Describe the relationship between application objects and service principals.

Benefits of registering an app

- Restrict which users and how they log into an application.
- Configure the scope permissions and API permissions available to the app.
- Configure and store secrets within the Microsoft identity platform.
- Enable custom branding of the application login.

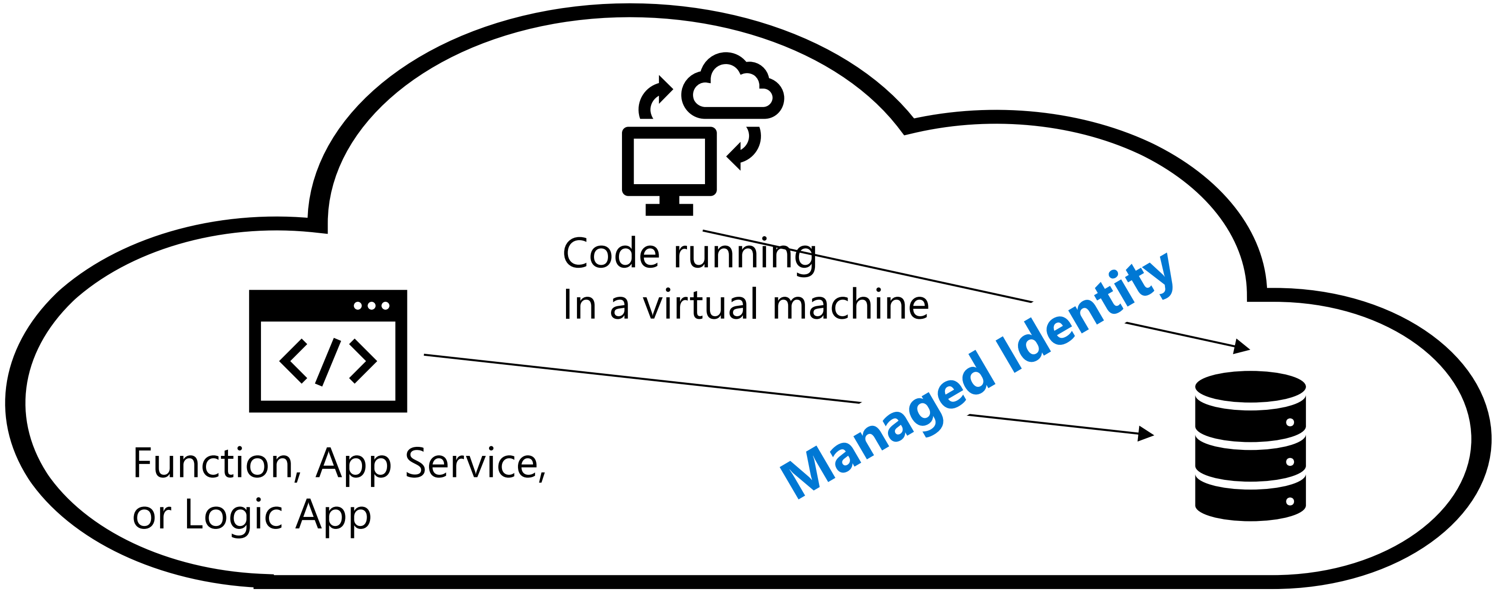
What is an app?



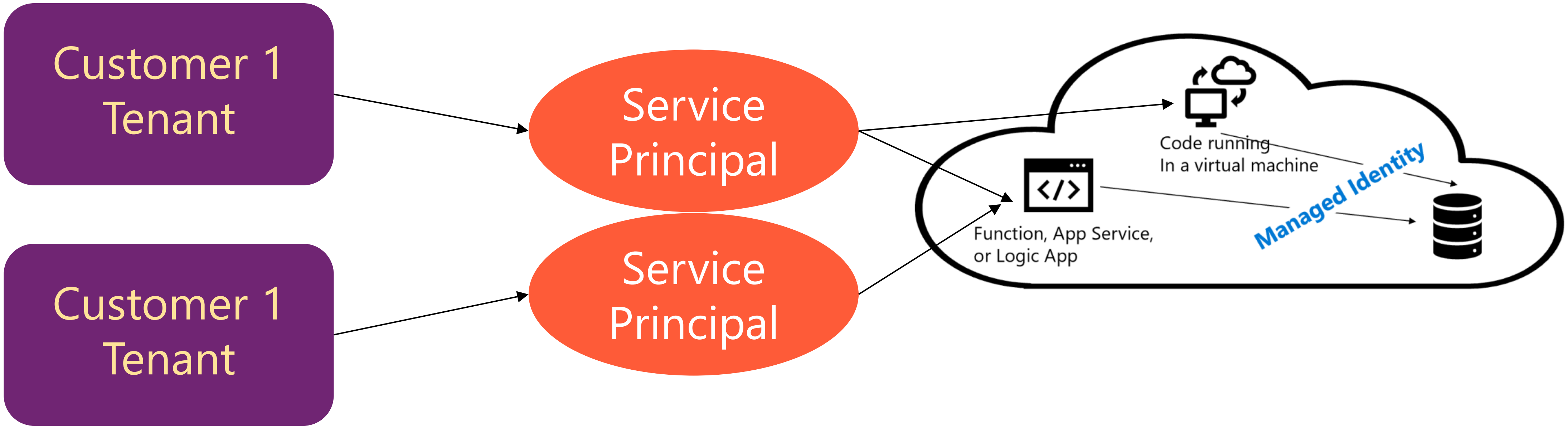
Function, App Service, or Logic App

Code running In a virtual machine

What if an app needs access to Azure resources?

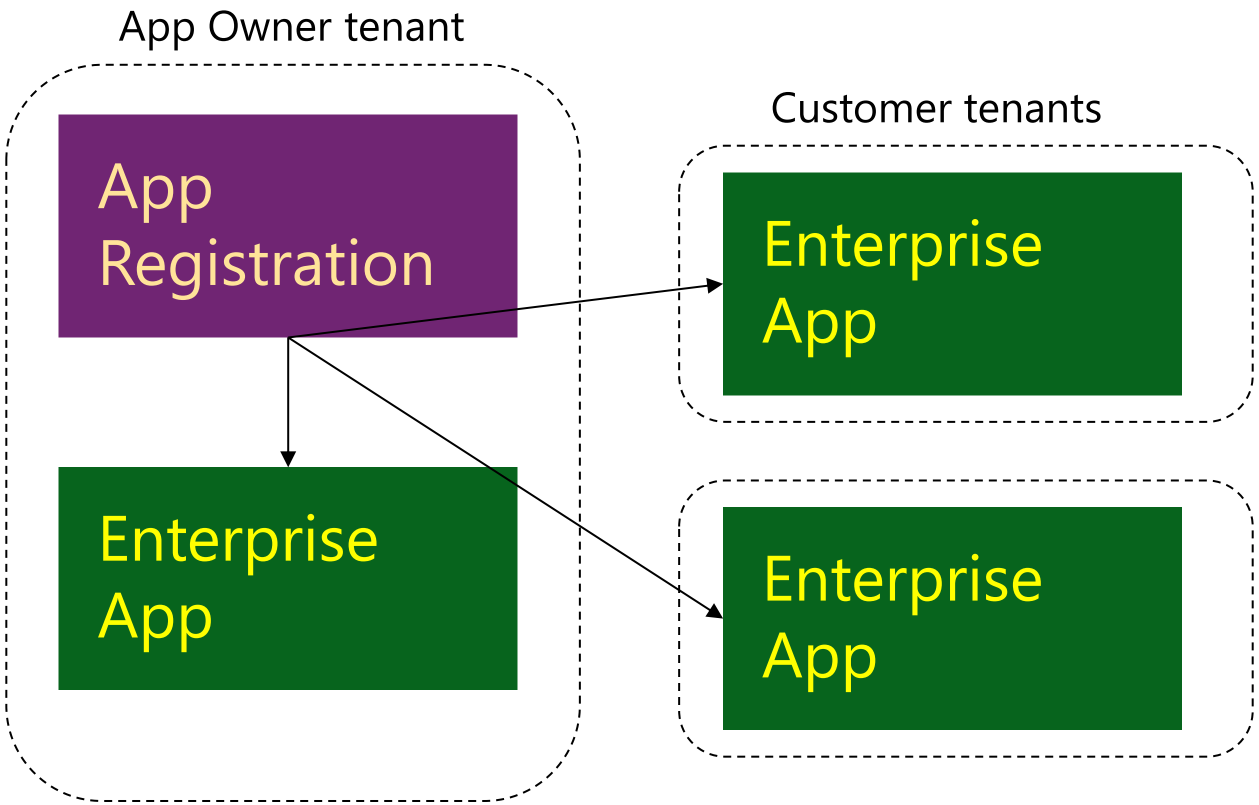


What if people from other tenants need access to your app?



- Service principals are used:
    - Each tenant registers the app (creates a service principal)
    - Requires a key or certificate for authentication

Register an App in Microsoft Entra ID



Global

- Unique application ID
- Redirect URI
- Branding
- API permissions
- Role definitions

Tenant-specific service principal

- Reference to application
  - + unique object ID
- User / group assignments
- Role assignments
- Visibility in portals

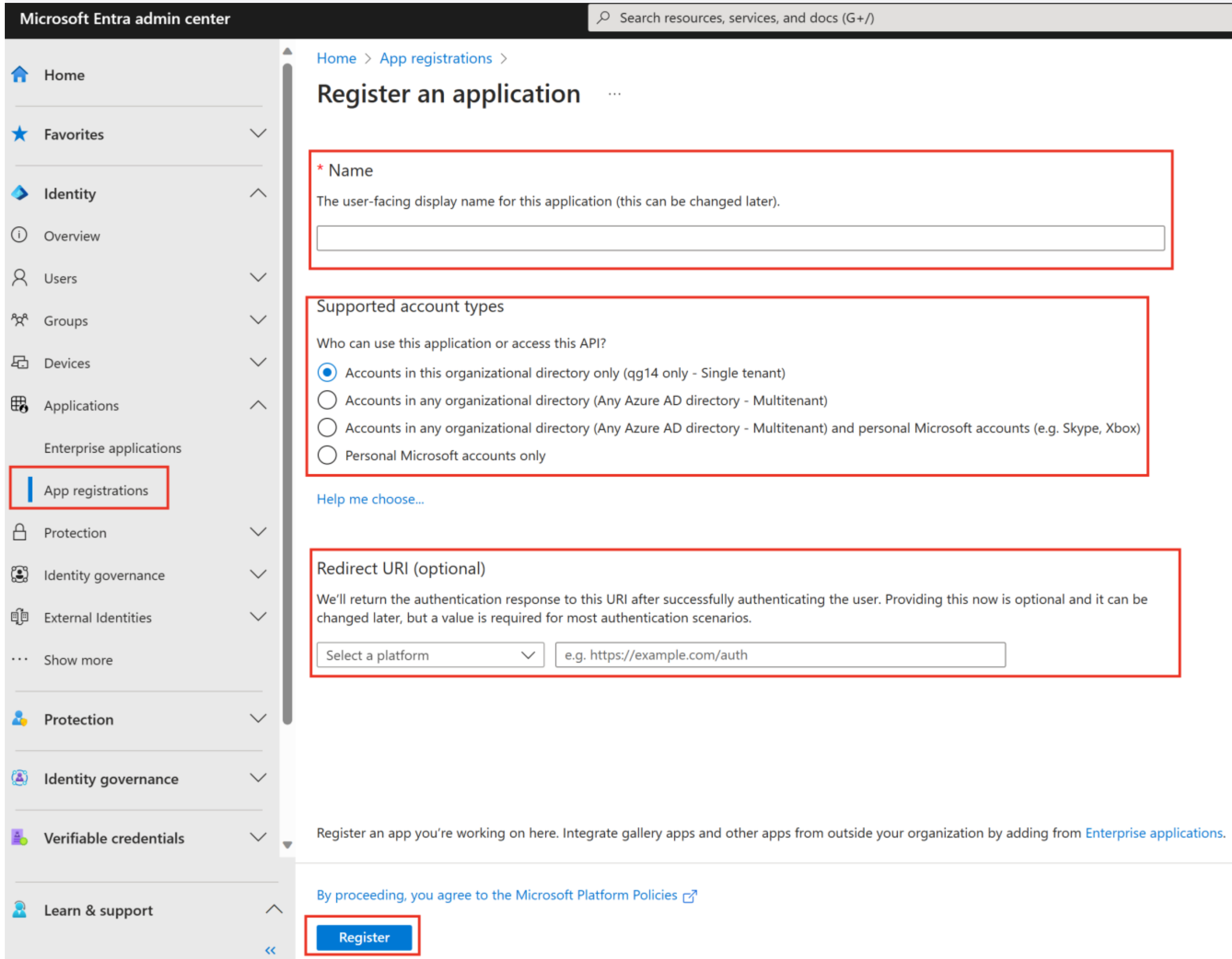
Single tenant versus multitenant apps

Audience	Single or Multi-tenant	Who can sign in
Accounts in this directory only	Single tenant	All user and guest accounts in your directory.
Accounts in any Microsoft Entra directory	Multi-tenant	All users and guests with a work or school account from Microsoft can use your application or API.
Accounts in any Microsoft Entra directory and personal Microsoft accounts (such as Skype, Xbox, Outlook.com)	Multitenant and Microsoft Accounts	All users with a work or school, or personal Microsoft account can use your application or API. Includes schools, businesses using Microsoft 365, and services like Xbox and Skype.

Create an app registration

Values needed for app registration

- App name
  - What the user sees
- Account types that can log into the app
  - Single or multitenant
- URI
  - Where application is running after authentication



* Name

The user-facing display name for this application (this can be changed later).

Supported account types

Who can use this application or access this API?

● Accounts in this organizational directory only (qg14 only - Single tenant)
○ Accounts in any organizational directory (Any Azure AD directory - Multitenant)
○ Accounts in any organizational directory (Any Azure AD directory - Multitenant) and personal Microsoft accounts (e.g. Skype, Xbox)
○ Personal Microsoft accounts only

Help me choose...

Redirect URI (optional)

We'll return the authentication response to this URI after successfully authenticating the user. Providing this now is optional and it can be changed later, but a value is required for most authentication scenarios.

Select a platform | e.g. https://example.com/auth

Register an app you're working on here. Integrate gallery apps and other apps from outside your organization by adding from Enterprise applications.

By proceeding, you agree to the Microsoft Platform Policies

Application object versus service Principal

Application Object

- How the service can issue tokens to access the application
- The resources that the application might need to access
- The actions that the application can take
- Contains the application ID

Service Principal

- A reference back to an application object through the application ID property
- Records of local user and group application role assignments
- Records of local user and admin permissions granted to the application
- Records of local policies including Conditional Access policy
- Records of alternate local settings for an application

Plan and design the integration of enterprise apps for SSO

Objectives

1. Discover apps by using MDCA or ADFS app report
2. Configure app connectors in MDCA
3. Design and implement access management for apps
4. Design and implement app management roles
5. Configure preintegrated (gallery) SaaS apps
6. Implement and manage policies for OAuth apps (in MDCA)

Discover apps by using MDCA or ADFS app report

What is CASB and Microsoft Defender for Cloud Apps (MDCA)?

CASB—Cloud Access Security Broker

A security tool placed between a cloud service (like an app) and the user to interject enterprise security policies before the cloud-based resource is accessed.

MDCA—Microsoft Defender for Cloud Apps (formerly Cloud App Security)

Microsoft implementation of a CASB service to protect data, services, and applications with enterprise policies. It provides supplemental reporting and analytics services.

Microsoft Defender for Cloud Apps capabilities

- Shadow IT discovery—find and manage cloud apps
- Information protection—protect information as it travels
- Threat protection—look for unusual behavior
- Compliance assessment—assess against regulatory requirements

Microsoft Defender for Cloud Apps

Cloud Access Security Broker (CASB)

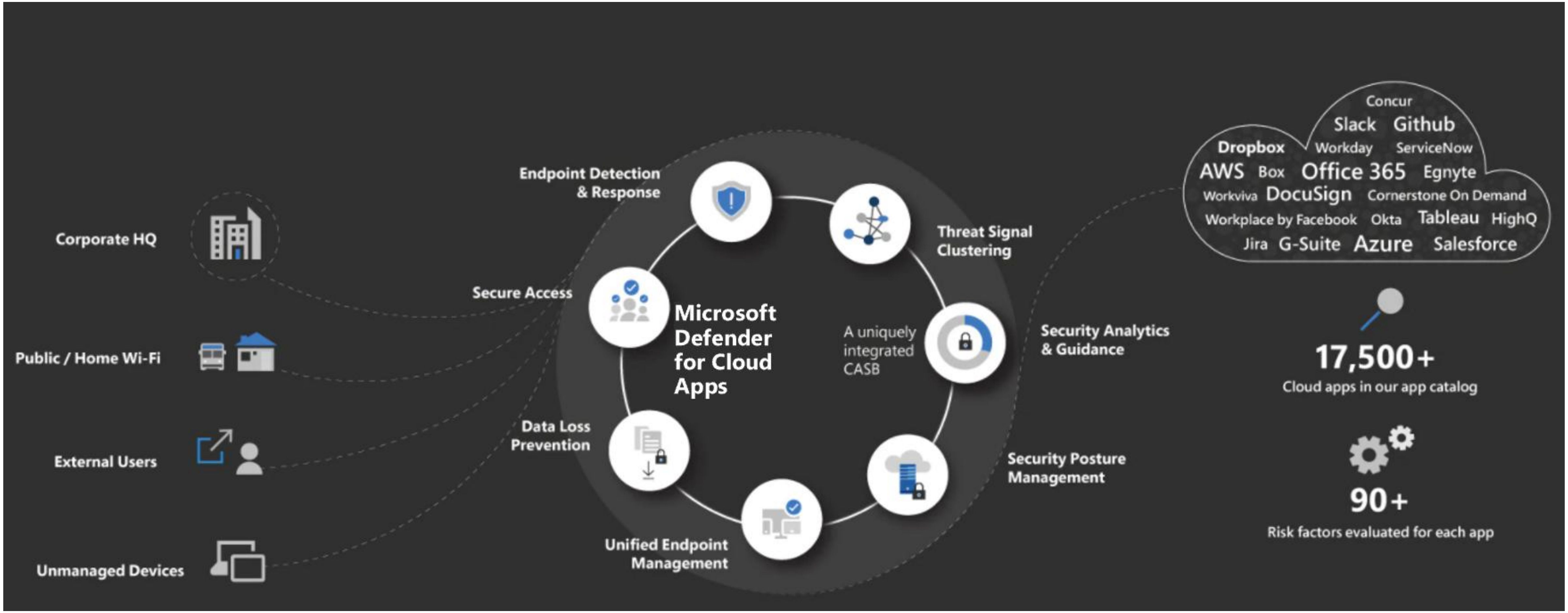
Several different deployment modes:

- Log collection
- API connectors
- Reverse proxy

Providing admins with:

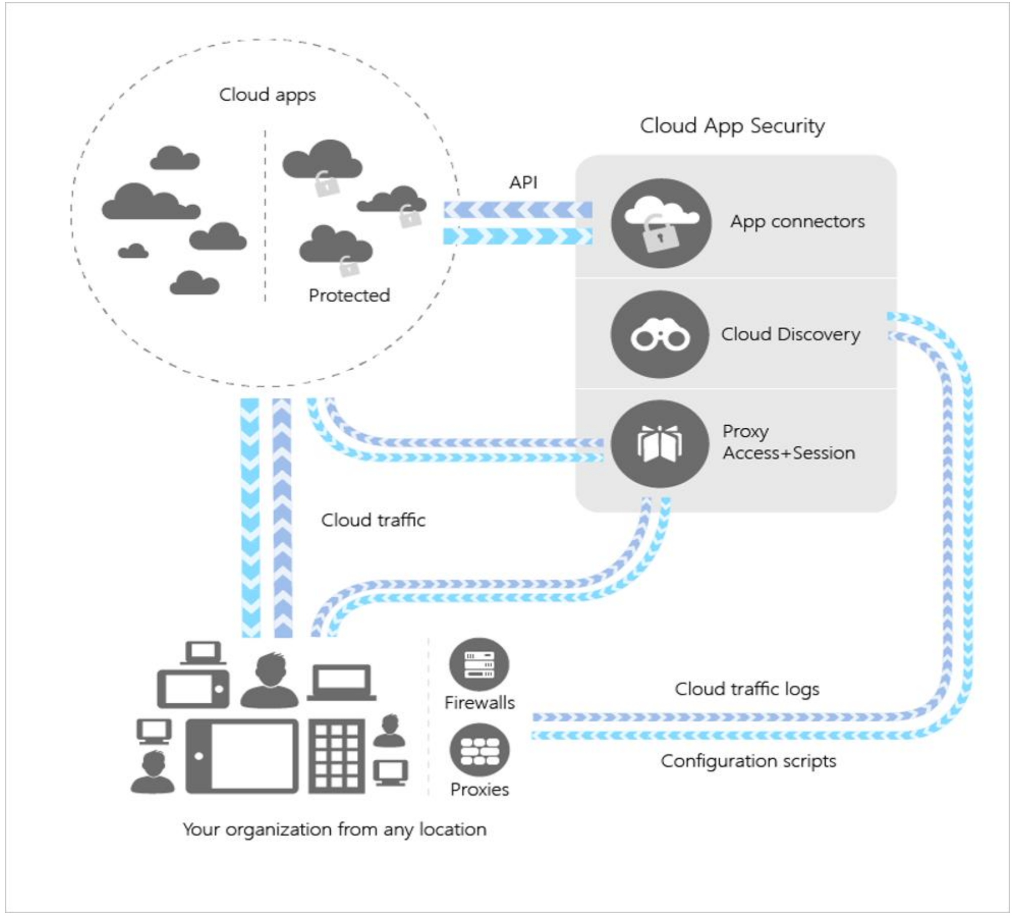
- Rich visibility
- Data control
- Sophisticated analytics
- Identification of cyberthreats

Microsoft Defender for Cloud Apps—process flow

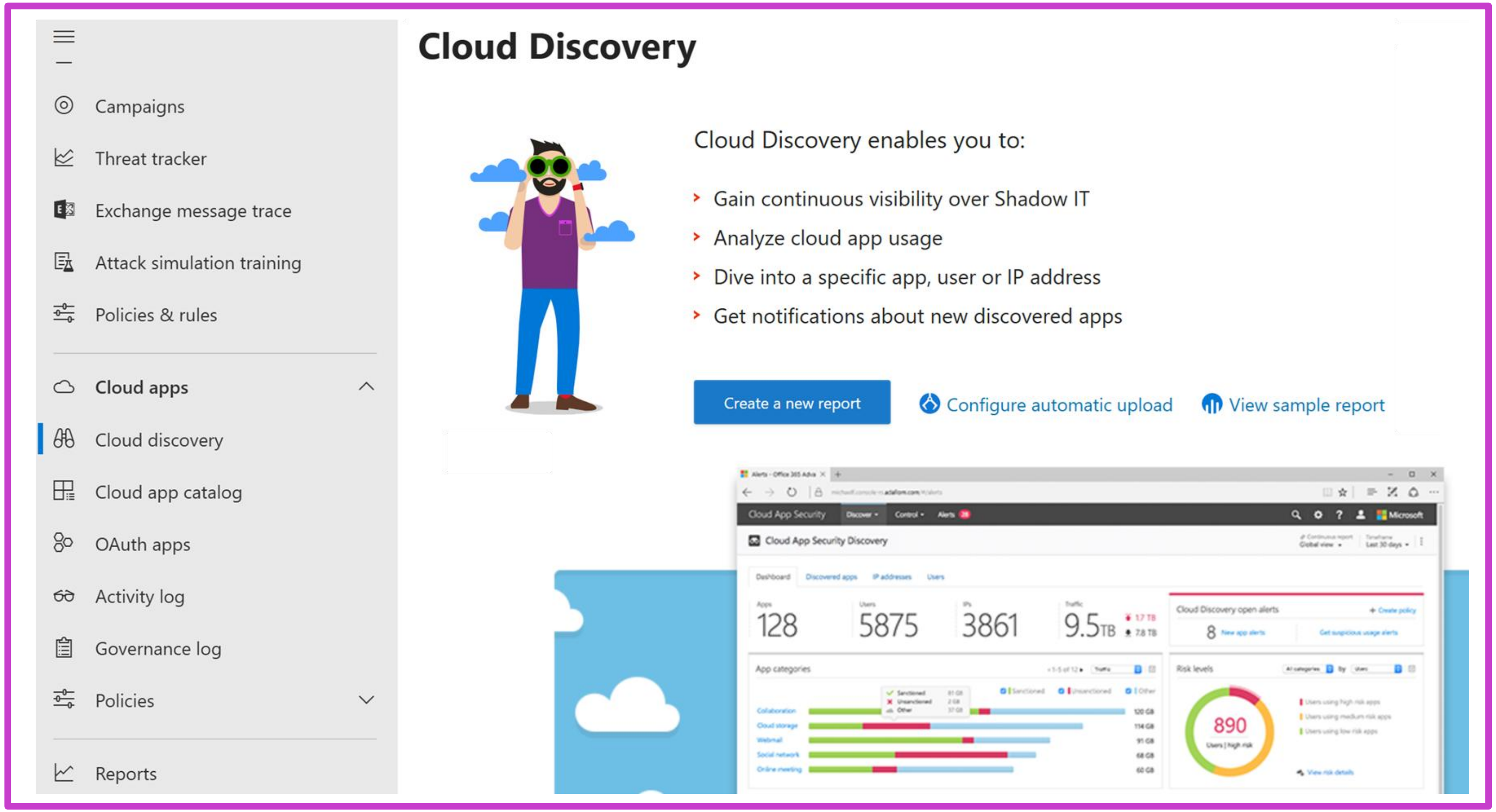


Microsoft Defender for Cloud Apps architecture

- **Cloud Discovery**
  Find apps
- **Sanctioning**
  Allow/deny apps
- **Connectors**
  Extend protection into the app
  with APIs
- **Conditional Access** –
  Set access requirements
- **Policy control** – Define user behavior with apps



Set up Cloud Discovery with Microsoft Defender for Cloud Apps



Campaigns

Threat tracker

Exchange message trace

Attack simulation training

Policies & rules

Cloud apps

Cloud discovery

Cloud app catalog

OAuth apps

Activity log

Governance log

Policies

Reports

Cloud Discovery

Cloud Discovery enables you to:

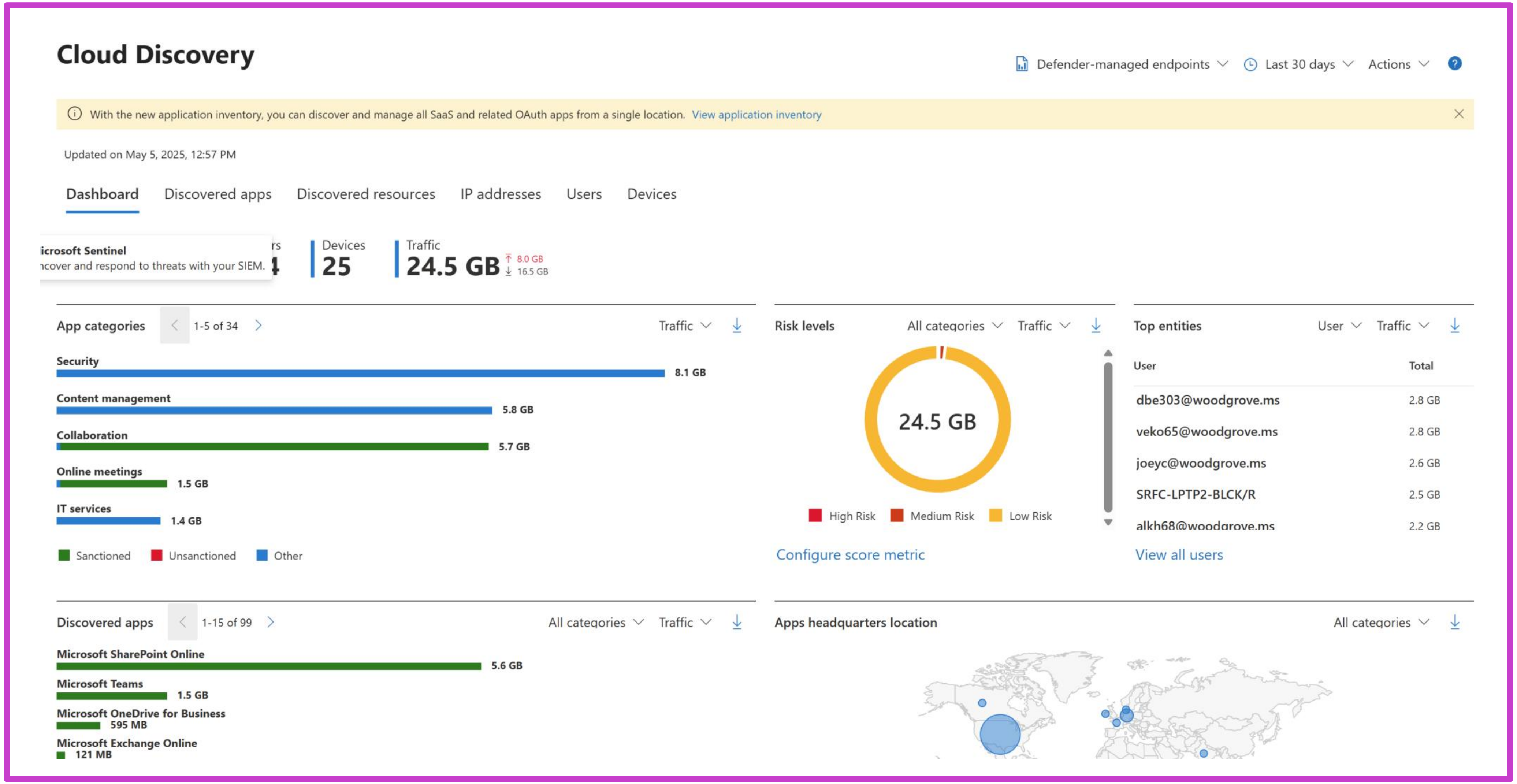
- Gain continuous visibility over Shadow IT
- Analyze cloud app usage
- Dive into a specific app, user or IP address
- Get notifications about new discovered apps

Create a new report

Configure automatic upload

View sample report

MDCA—discovering apps with Cloud Discovery



Cloud Discovery

ⓘ With the new application inventory, you can discover and manage all SaaS and related OAuth apps from a single location. View application inventory ✕

Updated on May 5, 2025, 12:57 PM

licrosoft Sentinel
ncover and respond to threats with your SIEM.

rs 4 | Devices 25 | Traffic 24.5 GB ↑ 8.0 GB ↓ 16.5 GB

App categories 1-5 of 34 — Traffic

Category	Traffic
Security	8.1 GB
Content management	5.8 GB
Collaboration	5.7 GB
Online meetings	1.5 GB
IT services	1.4 GB

🟩 Sanctioned 🟥 Unsanctioned 🟦 Other

Risk levels — All categories — Traffic

24.5 GB

🟥 High Risk 🟥 Medium Risk 🟨 Low Risk

Configure score metric

Top entities — User — Traffic

User	Total
dbe303@woodgrove.ms	2.8 GB
veko65@woodgrove.ms	2.8 GB
joeyc@woodgrove.ms	2.6 GB
SRFC-LPTP2-BLCK/R	2.5 GB
alkh68@woodgrove.ms	2.2 GB

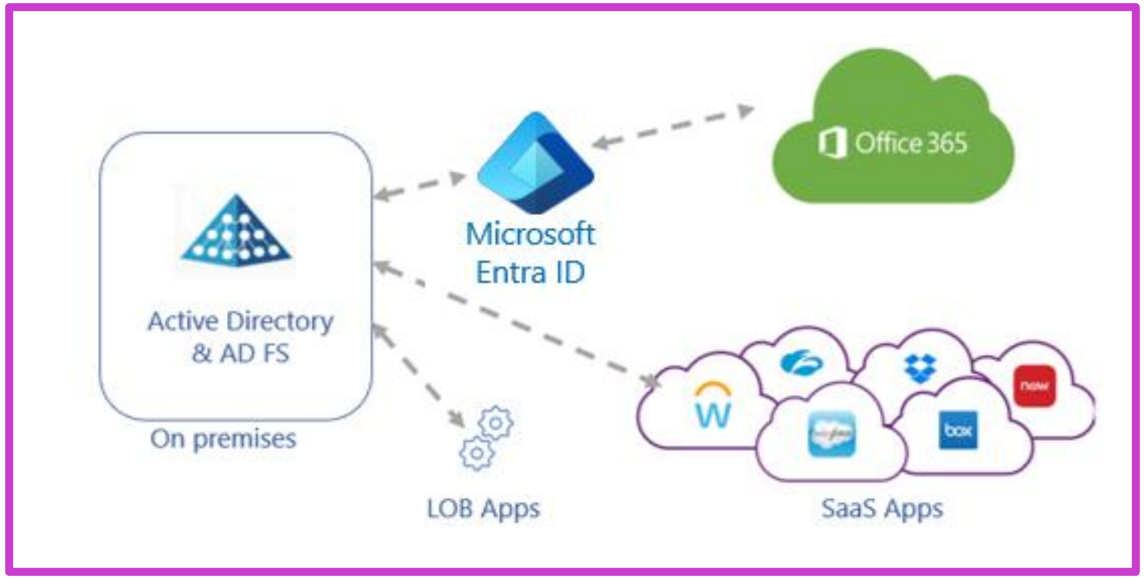
View all users

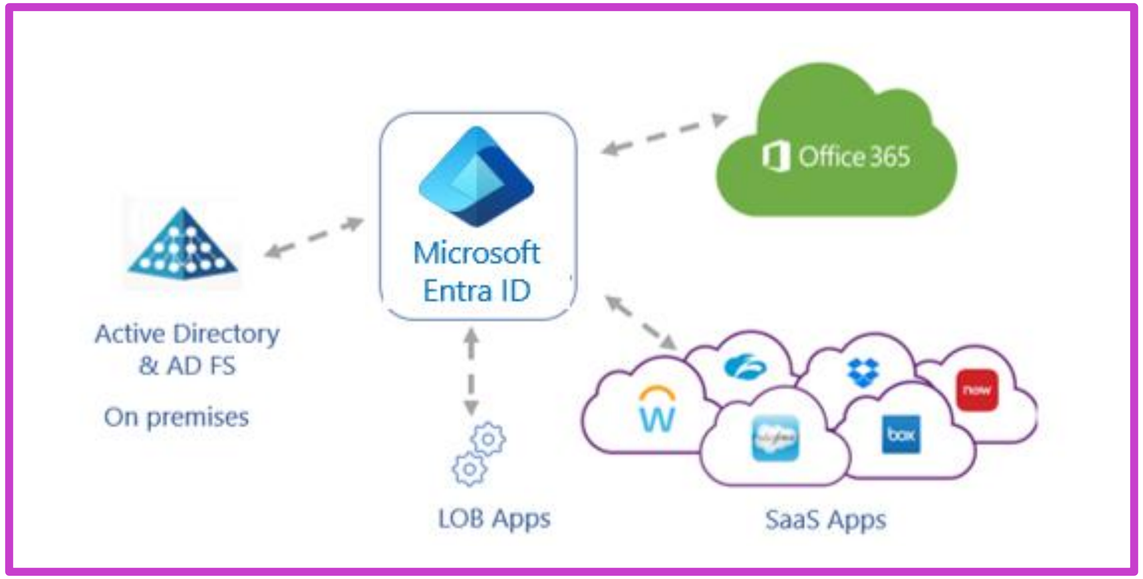
Discovered apps 1-15 of 99 — All categories — Traffic

App	Traffic
Microsoft SharePoint Online	5.6 GB
Microsoft Teams	1.5 GB
Microsoft OneDrive for Business	595 MB
Microsoft Exchange Online	121 MB

Apps headquarters location — All categories

Active Directory Federation Services





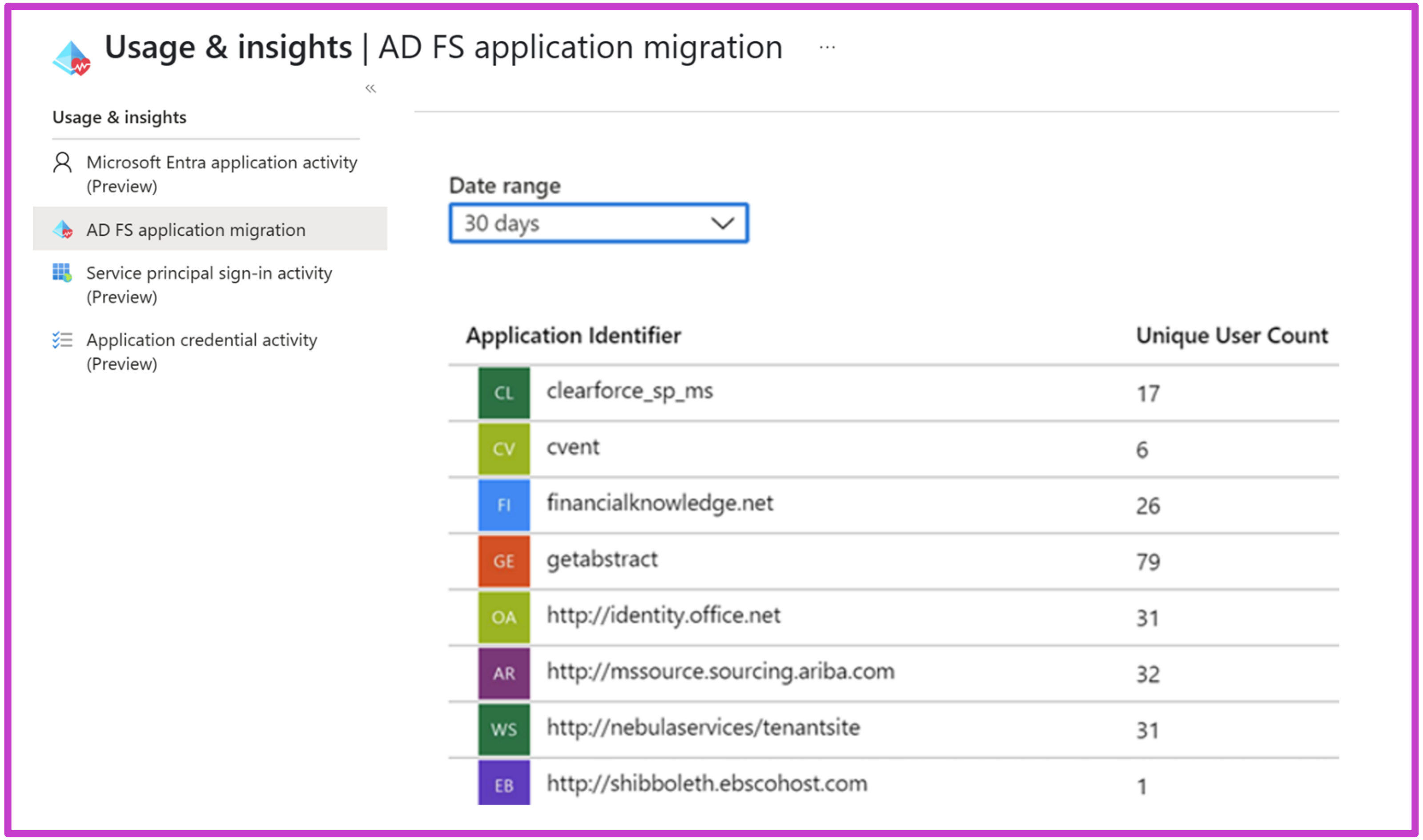
AD FS extends single sign-on (SSO) functionality between trusted business partners without requiring users to sign in separately to each application.

To increase application security, your goal is to have a single set of access controls and policies across your on-premises and cloud environments.

Discover apps that can be migrated

There are two types of applications to migrate

- SaaS applications—procured by the organization
- Line-of-business applications—developed by the organization



Usage & insights | AD FS application migration
Usage & insights
Microsoft Entra application activity (Preview)
AD FS application migration
Service principal sign-in activity (Preview)
Application credential activity (Preview)

Date range: 30 days

Application Identifier		Unique User Count
CL	clearforce_sp_ms	17
CV	cvent	6
FI	financialknowledge.net	26
GE	getabstract	79
OA	http://identity.office.net	31
AR	http://mssource.sourcing.ariba.com	32
WS	http://nebulaservices/tenantsite	31
EB	http://shibboleth.ebscohost.com	1

Configure connectors to apps in MDCA

What is an app connector in Defender for Cloud Apps?

Capability
Connect to API provided by the app creator
Enables greater visibility into the apps
All communication over secure HTTPS
Common connector API limitations: • Throttling • API limits • Dynamic time-shifting • API windows
Services vary by app

Apps with MDCA connectors

Connectors:

- Atlassian
- Azure
- AWS
- Box
- DocuSign
- Dropbox
- GitHub
- Google Workspace
- Many others

How app connectors work in MDCA

Defender for Cloud Apps is deployed with system admin privileges to allow full access to all objects in your environment.

The app connector flow is as follows:

- Defender for Cloud Apps scans and saves authentication permissions.
- Defender for Cloud Apps requests the user list. The first time the request is done, it may take some time until the scan completes. After the user scan is over, Defender for Cloud Apps moves on to activities and files. As soon as the scan starts, some activities will be available in Defender for Cloud Apps.
- After completion of the user request, Defender for Cloud Apps periodically scans users, groups, activities, and files. All activities will be available after the first full scan.

Common services offered by app connector

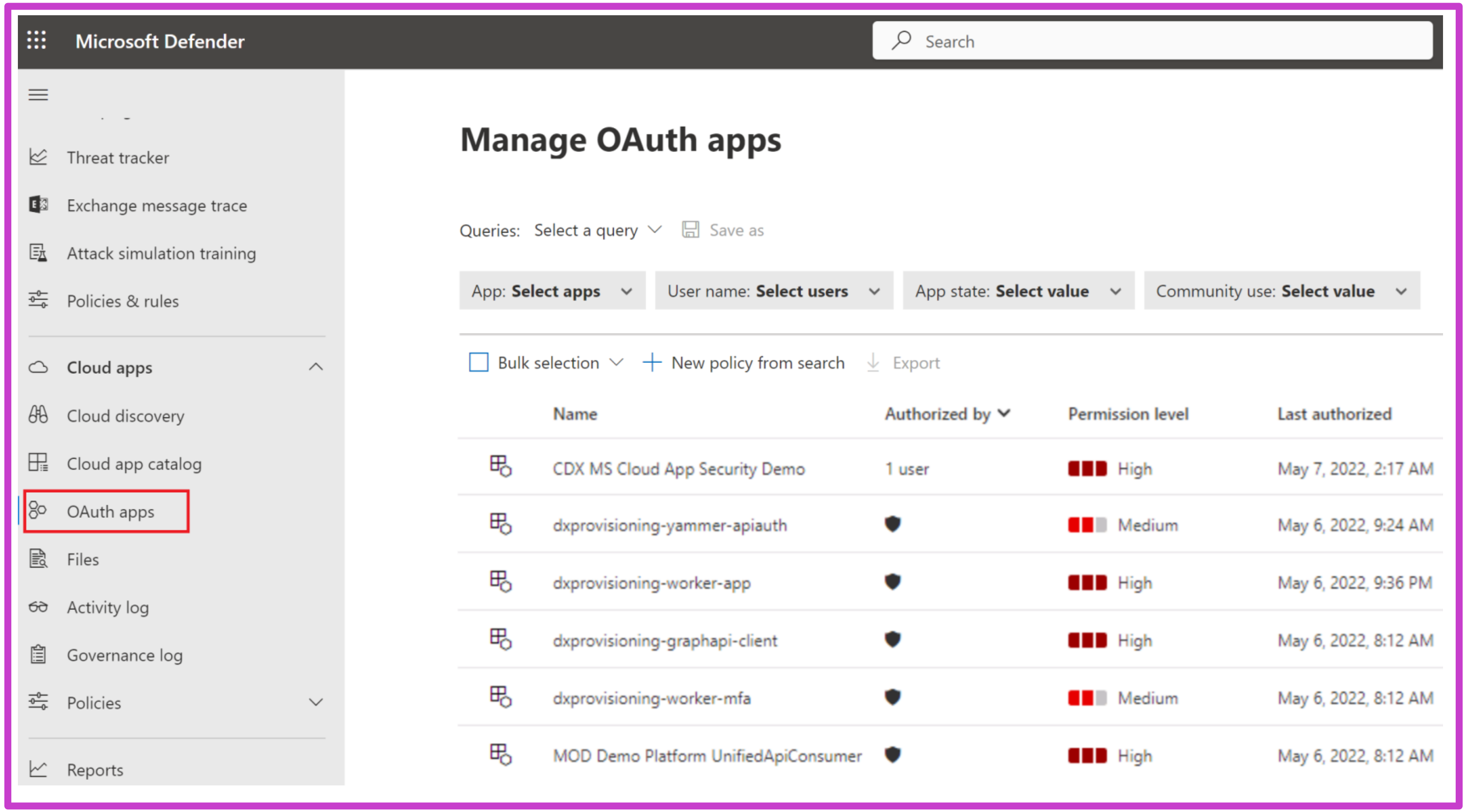
Connections may take some time depending on the size of the tenant, the number of users, and the size and number of files that need to be scanned. Depending on the app to which you’re connecting, API connection enables the following items:

- Account information—visibility into users, accounts, profile information, status (suspended, active, disabled) groups, and privileges.
- Audit trail—visibility into user activities, admin activities, sign-in activities.
- Account governance—ability to suspend users, revoke passwords, and so on.
- App permissions—visibility into issued tokens and their permissions.
- App permission governance—ability to remove tokens.
- Data scan—scanning of unstructured data using two processes—periodically (every 12 hours) and in real-time scan (triggered each time a change is detected).
- Data governance—ability to quarantine files, including files in trash, and overwrite files.

Implement and manage policies for OAuth apps

Create a new OAuth app policy

1. Launch **Microsoft Defender for Cloud Apps** at https://security.microsoft.com.
2. Under **Cloud Apps**, select **OAuth apps**.
3. Filter the apps according to your needs.
   - For example, you can view all apps that request Permission to Modify calendars in your mailbox.
4. Select the **New policy** from search button.



Manage OAuth apps

Queries: Select a query ⌄ Save as

App: **Select apps** ⌄ User name: **Select users** ⌄ App state: **Select value** ⌄ Community use: **Select value** ⌄

□ Bulk selection ⌄ + New policy from search ↓ Export

Name	Authorized by	Permission level	Last authorized
CDX MS Cloud App Security Demo	1 user	High	May 7, 2022, 2:17 AM
dxprovisioning-yammer-apiauth		Medium	May 6, 2022, 9:24 AM
dxprovisioning-worker-app		High	May 6, 2022, 9:36 PM
dxprovisioning-graphapi-client		High	May 6, 2022, 8:12 AM
dxprovisioning-worker-mfa		Medium	May 6, 2022, 8:12 AM
MOD Demo Platform UnifiedApiConsumer		High	May 6, 2022, 8:12 AM

Design and implement access management for apps

Microsoft Entra ID—enterprise applications

Microsoft Entra ID → enterprise applications

Gallery of thousands of preintegrated applications

- Many of the applications your organization uses are already in the gallery
- Add your own business apps

After an application is added to your Microsoft Entra tenant, you can:

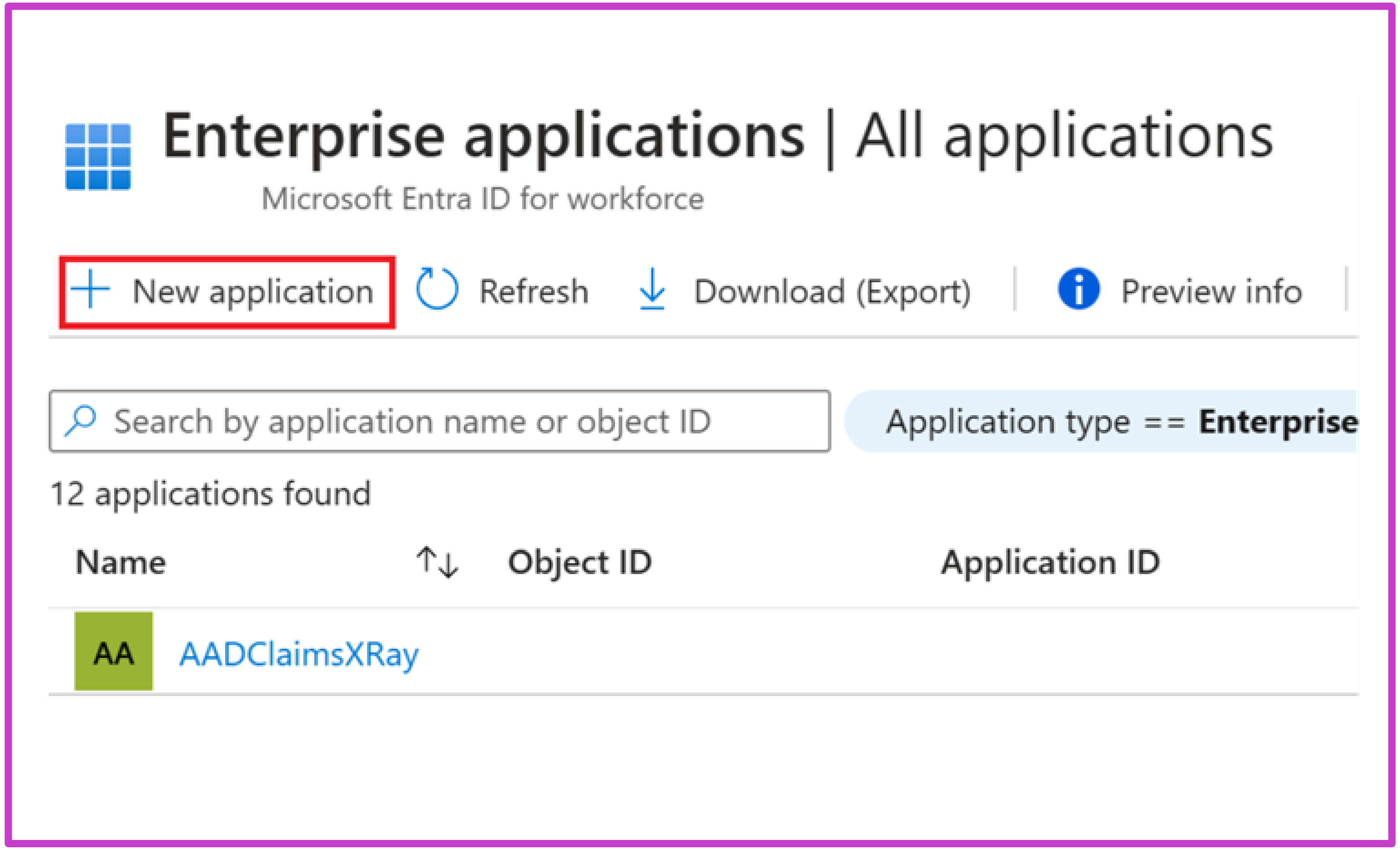
- Configure properties for the app
- Manage user access to the app with a Conditional Access policy
- Configure single sign-on

Exercise: Implement access management for apps

Add an app to your Microsoft Entra tenant:

Add an Enterprise app and assign your administrator account

Launch this Exercise in GitHub



Enterprise applications | All applications

Microsoft Entra ID for workforce

Search by application name or object ID

Application type == **Enterprise**

12 applications found

Name	Object ID	Application ID
AA AADClaimsXRay		

Design and implement app management roles

Delegate application register and management

- By restricting who can register applications and manage them
- By assigning one or more owners to an application
- By assigning a built-in administrative role that grants access to manage configuration in Microsoft Entra ID for all applications
- By creating a custom role defining specific permissions, and assigning it

Built in admin application roles

Application administrator

Includes the ability to manage all aspects of enterprise applications; including registrations and application proxy settings.

Cloud application administrator

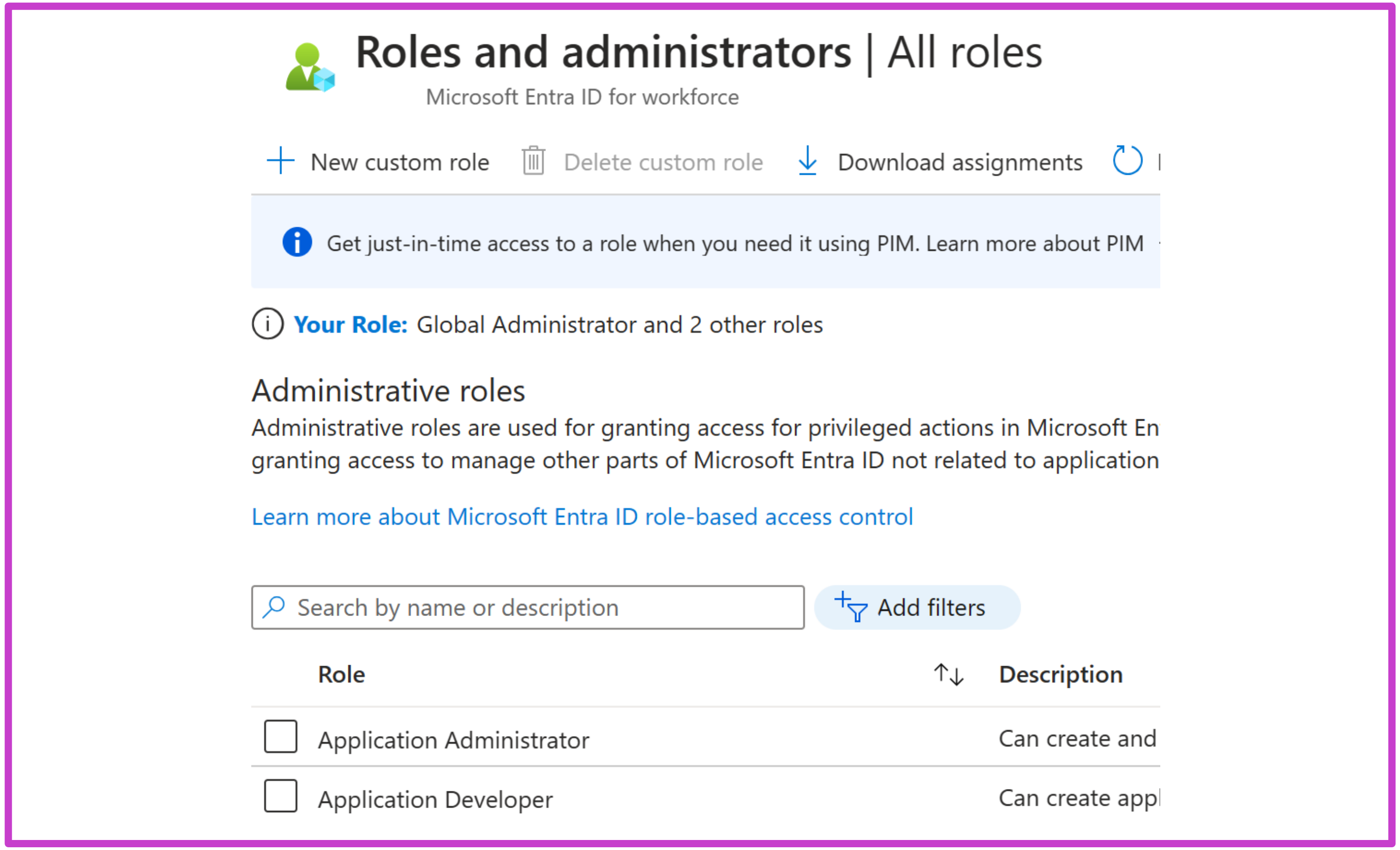
Includes the ability to manage most aspects of enterprise applications, but **excludes the ability to manage application proxy settings.**

Exercise: Create a new custom role to grant access to manage app registrations

A custom role can be assigned at organization-wide scope or at the scope of a single Microsoft Entra ID object.

Create a new custom role that can be used to grant access to manage app registrations.

[Launch this Exercise in GitHub]()



Roles and administrators | All roles

Microsoft Entra ID for workforce

Get just-in-time access to a role when you need it using PIM. Learn more about PIM

Your Role: Global Administrator and 2 other roles

Administrative roles

Administrative roles are used for granting access for privileged actions in Microsoft En
granting access to manage other parts of Microsoft Entra ID not related to application

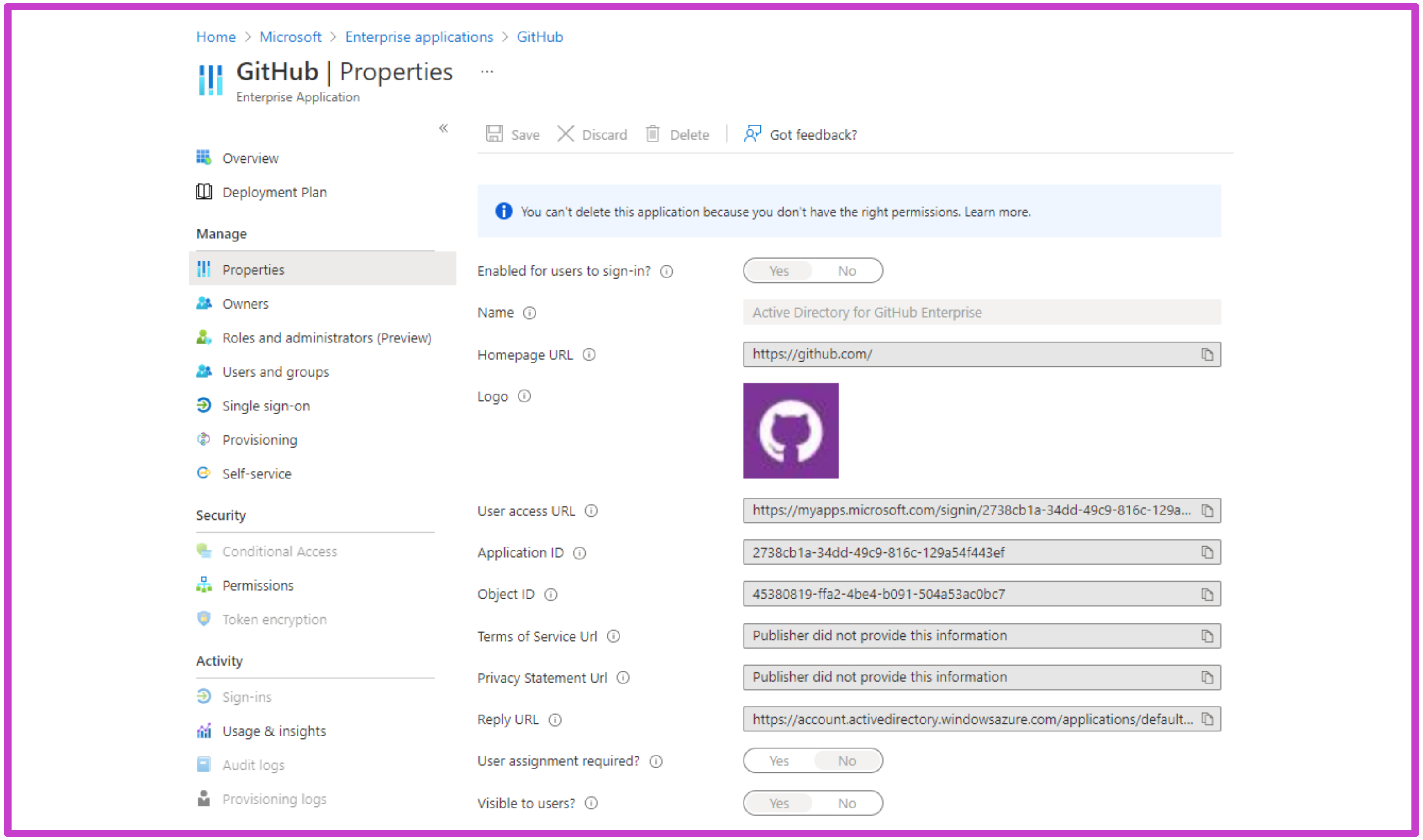
Learn more about Microsoft Entra ID role-based access control

	Role	Description
□	Application Administrator	Can create and
□	Application Developer	Can create appl

Configure preintegrated (gallery) SaaS apps

Enterprise application properties

- Give the application a name
- Pick the URL that opens for users
- Name/Homepage URL
- ApplicationID/ObjectID
- Terms of Service/Privacy Statement



You can't delete this application because you don't have the right permissions. Learn more.

Enabled for users to sign-in?	[✓ Yes] No
Name	Active Directory for GitHub Enterprise
Homepage URL	https://github.com/
Logo	
User access URL	https://myapps.microsoft.com/signin/2738cb1a-34dd-49c9-816c-129a...
Application ID	2738cb1a-34dd-49c9-816c-129a54f443ef
Object ID	45380819-ffa2-4be4-b091-504a53ac0bc7
Terms of Service Url	Publisher did not provide this information
Privacy Statement Url	Publisher did not provide this information
Reply URL	https://account.activedirectory.windowsazure.com/applications/default...
User assignment required?	Yes [✓ No]
Visible to users?	[✓ Yes] No

Configure app properties

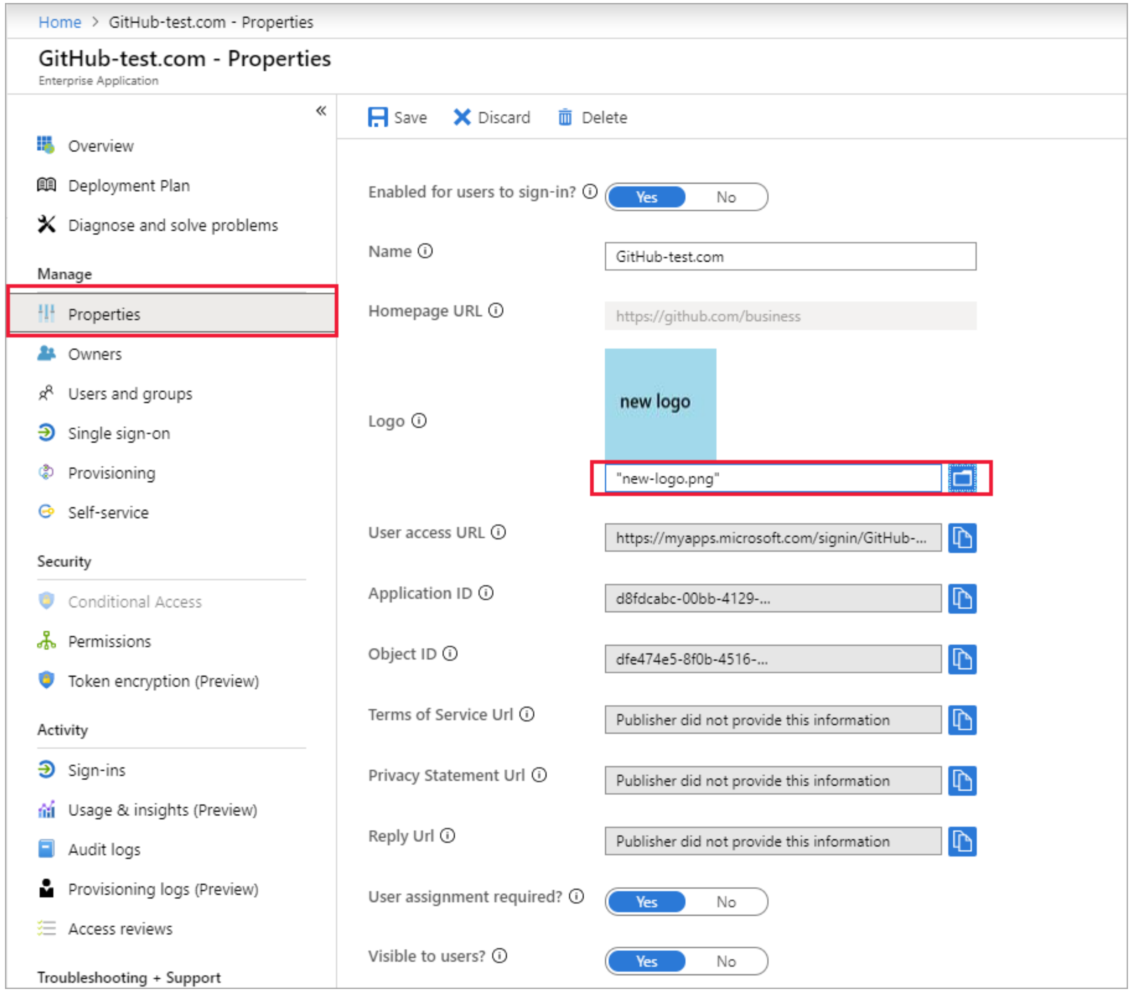
Enabled for users to sign in?

User assignment required?

Visible to users?

Enabled for users to sign in?	User assignment required?	Visible to users?	Behavior for users who have either been assigned to the app or not.
Yes	Yes	Yes	• Assigned users can see the app and sign in. • Unassigned users cannot see the app and cannot sign in.
Yes	Yes	No	• Assigned users cannot see the app but they can sign in. • Unassigned users cannot see the app and cannot sign in.
Yes	No	Yes	• Assigned users can see the app and sign in. • Unassigned users cannot see the app but can sign in.

Custom logo



GitHub-test.com - Properties

Enterprise Application

Enabled for users to sign-in? [✓ Yes] No

Name: GitHub-test.com

Homepage URL: https://github.com/business

Logo: "new-logo.png"

User access URL: https://myapps.microsoft.com/signin/GitHub-...

Application ID: d8fdcabc-00bb-4129-...

Object ID: dfe474e5-8f0b-4516-...

Terms of Service Url: Publisher did not provide this information

Privacy Statement Url: Publisher did not provide this information

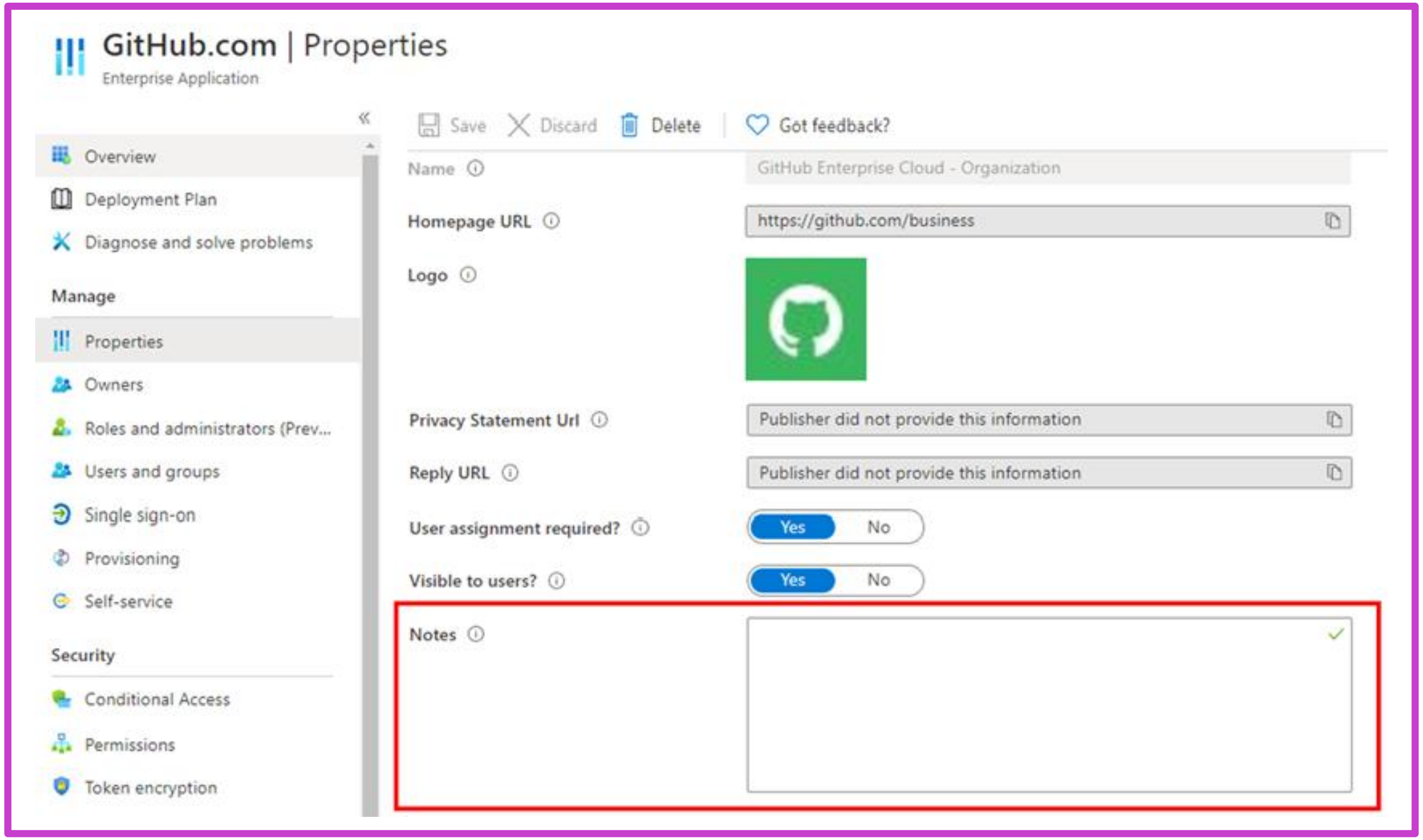
Reply Url: Publisher did not provide this information

User assignment required? [✓ Yes] No

Visible to users? [✓ Yes] No

Add notes

Add any information that is relevant for the management of the application



GitHub.com | Properties

Enterprise Application

Name: GitHub Enterprise Cloud - Organization

Homepage URL: https://github.com/business

Logo

Privacy Statement Url: Publisher did not provide this information

Reply URL: Publisher did not provide this information

User assignment required? [✓ Yes] No

Visible to users? [✓ Yes] No

Notes

Summary

In this section, you learned how to:

- Discover apps by using MDCA or ADFS app report.
- Design and implement access management for apps.
- Design and implement app management roles.
- Configure preintegrated (gallery) SaaS apps.

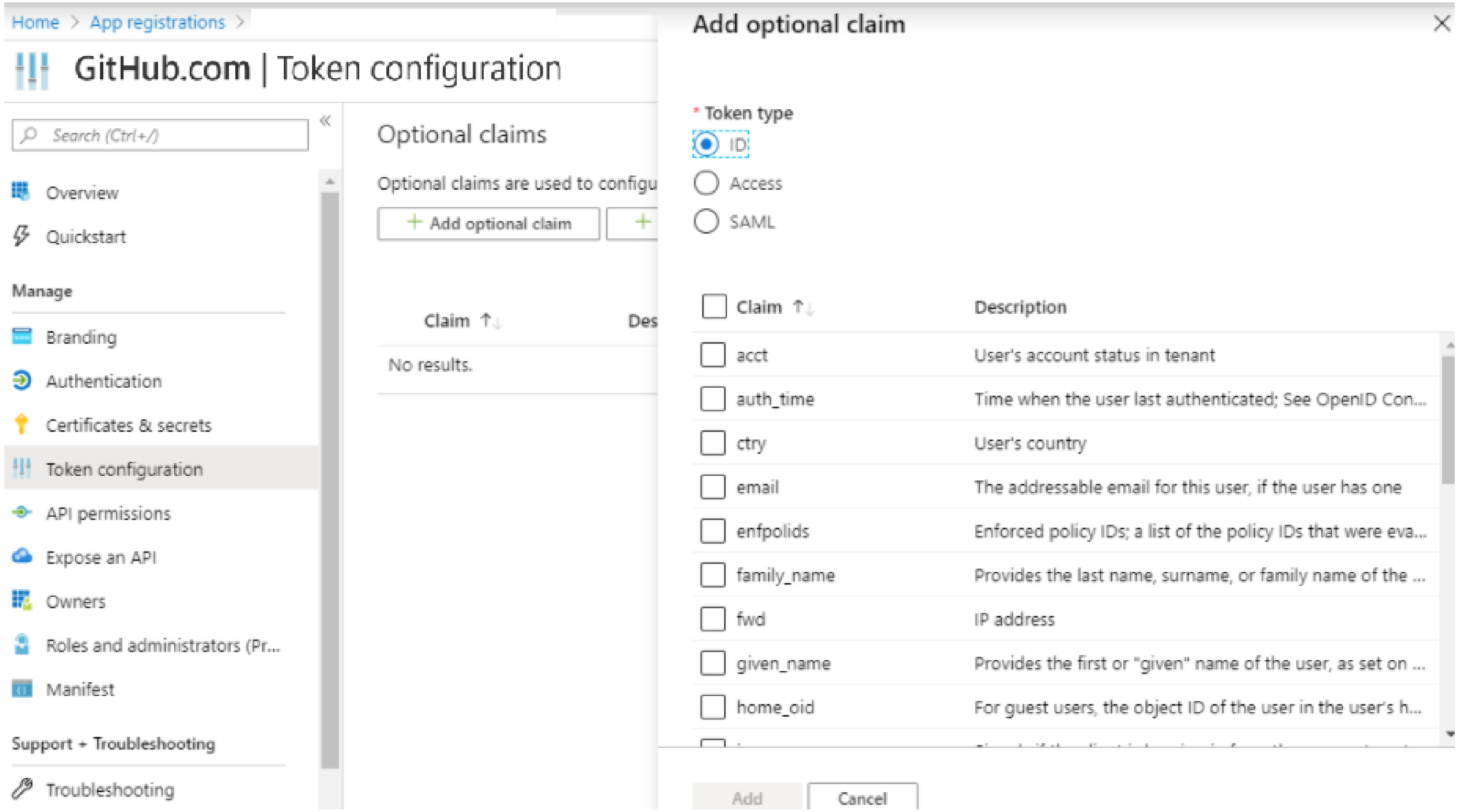
Implement and monitor the integration of enterprise apps for SSO

Learning objectives

1. Implement token customizations
2. Implement and configure consent settings
3. Integrate on-premises apps by using Microsoft Entra application proxy
4. Integrate custom SaaS apps for SSO
5. Implement application user provisioning
6. Monitor and audit access/sign-on to Microsoft Entra ID integrated enterprise applications
7. Create and manage application collections (in My Apps)

Implement token customizations

Token configuration – claims – SAML-based SSO



Optional claims

Optional claims are used to configu

Claim ↑↓	Des
No results.	

Add optional claim

* Token type

● ID
○ Access
○ SAML

□ Claim ↑↓	Description
□ acct	User's account status in tenant
□ auth_time	Time when the user last authenticated; See OpenID Con...
□ ctry	User's country
□ email	The addressable email for this user, if the user has one
□ enfpolids	Enforced policy IDs; a list of the policy IDs that were eva...
□ family_name	Provides the last name, surname, or family name of the ...
□ fwd	IP address
□ given_name	Provides the first or "given" name of the user, as set on ...
□ home_oid	For guest users, the object ID of the user in the user's h...

Implement and configure consent settings

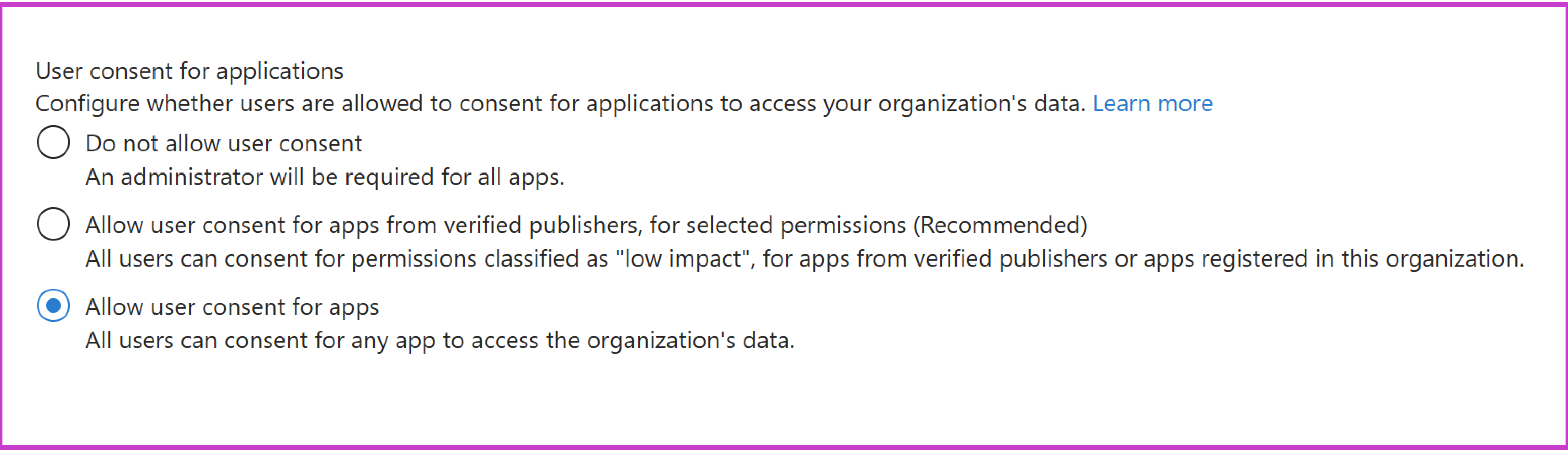
Why is consent important?

A user or admin must grant permissions to an app before it can access company data.

Users can allow apps access to specific information, like a mailbox, but not access to organization servers.

Users may not think through ramifications of granting access; they just want to use an app to do a task

What are Consent Settings?



User consent for applications

Configure whether users are allowed to consent for applications to access your organization's data. Learn more

○ Do not allow user consent
An administrator will be required for all apps.

○ Allow user consent for apps from verified publishers, for selected permissions (Recommended)
All users can consent for permissions classified as "low impact", for apps from verified publishers or apps registered in this organization.

● Allow user consent for apps
All users can consent for any app to access the organization's data.

- Before an application can access the organization’s data, a user must grant the application permissions to do so
- All users can consent to applications for permissions that do not require administrator consent
- By allowing users to grant apps access to data, users can acquire useful applications and be productive

User consent settings

Disable user consent

Users cannot grant permissions to applications. Requires an admin to grant.

Users can consent to apps from verified publishers

Users can only consent to apps that were published by a verified publisher.

Users can consent to all apps

Users can consent to any permission.

Custom app consent policy

Users can consent to custom app consent policies.

Integrate on-premises apps by using Microsoft Entra application proxy

What is Application Proxy?

A feature to allow users to access on-premises application.

Proxy service runs in the cloud and has an App Proxy connector running on-premises.

Securely passes sign-on tokens from Microsoft Entra ID to the application.

Value of Application Proxy

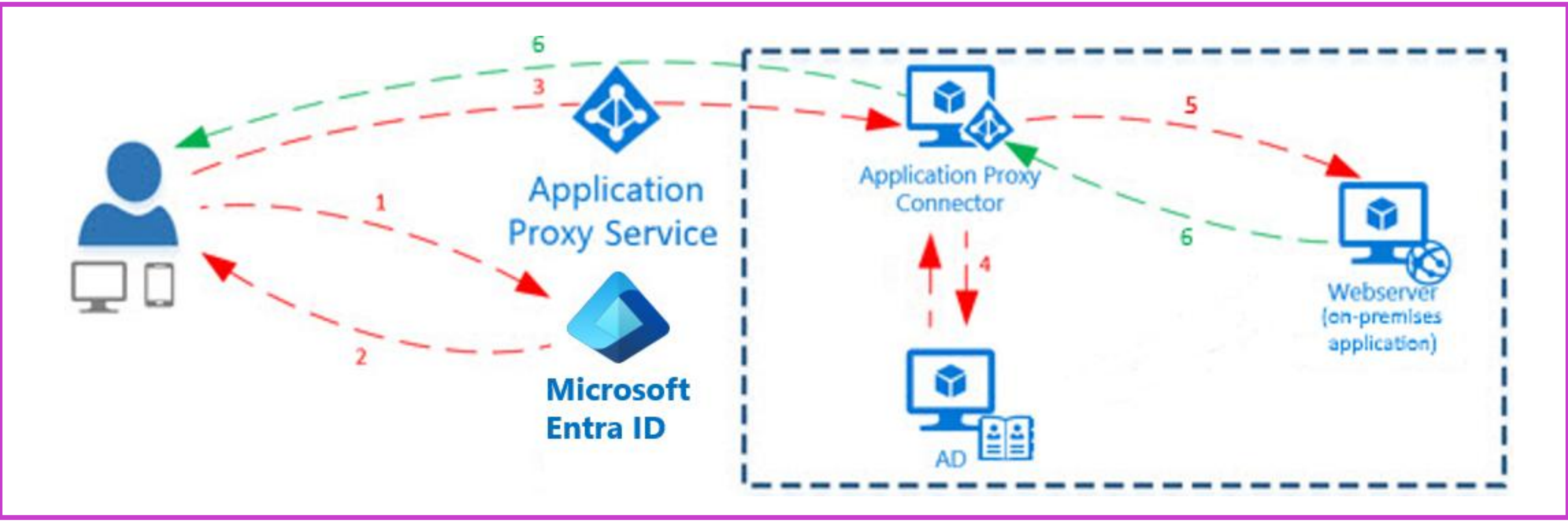
Protocol translation to/from modern authentication

Example: Convert Kerberos token to a modern auth token

Use seamless single sign-on to remove user action to log in multiple times

Allows apps to stay on-premises (for whatever reason), but still be securely available to the user

Application Proxy



6
3
Application Proxy Service
1
2
Microsoft Entra ID
Application Proxy Connector
5
6
4
AD
Webserver (on-premises application)

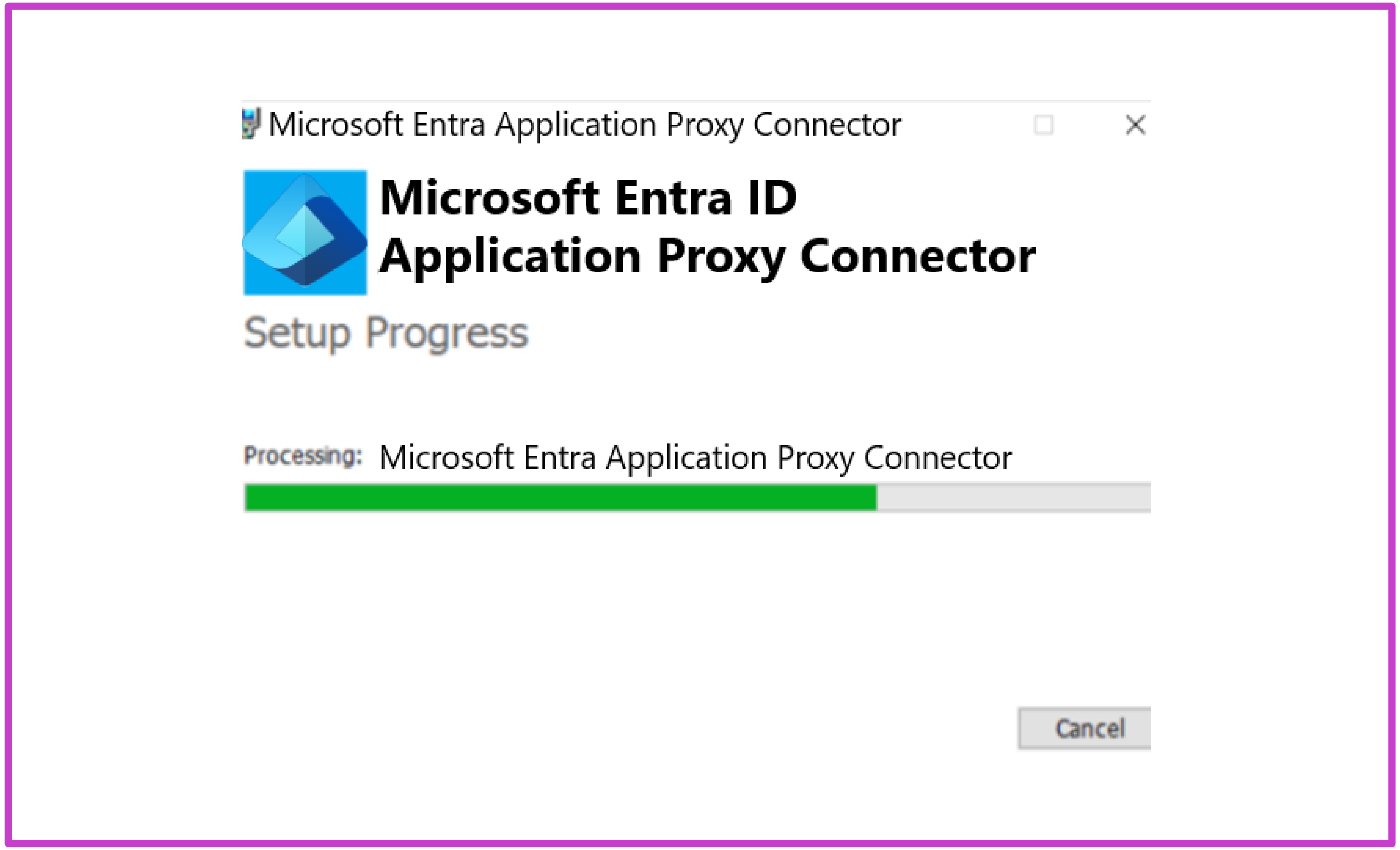
Application Proxy is a feature of Microsoft Entra ID that enables users to access on-premises web applications from a remote client.

Exercise: Add an on-premises application for remote access through Application Proxy in Microsoft Entra ID

Interactive guide

Enable integrated windows authentication to on-premises applications with Microsoft Entra application proxy.

Visit this interactive guide in Microsoft Learn



Microsoft Entra Application Proxy Connector

Microsoft Entra ID Application Proxy Connector

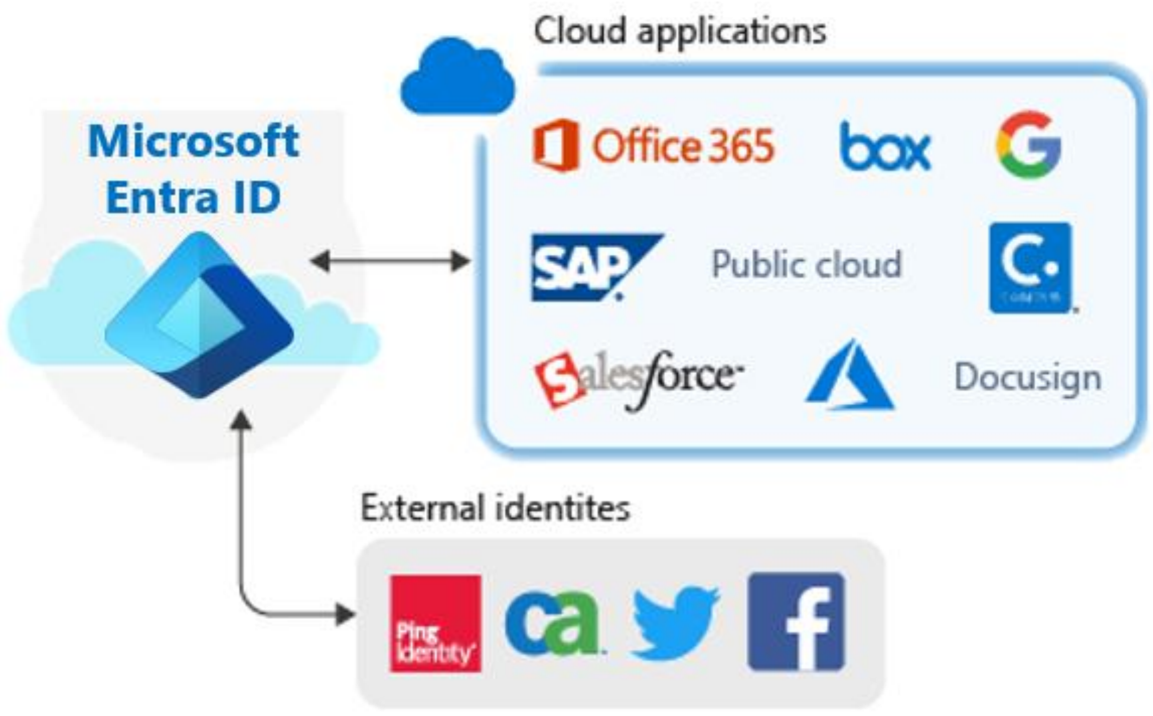
Setup Progress

Processing: Microsoft Entra Application Proxy Connector

Integrate custom SaaS apps for SSO

SSO for SaaS apps

- You can use Microsoft Entra ID as your identity system for just about any app. Many apps are already preconfigured and can be set up with minimal effort. These pre-configured apps are published in the Microsoft Entra App Gallery.
- You can manually configure most apps for single sign-on if they aren't already in the gallery. Microsoft Entra ID provides several SSO options: SAML-based SSO and OIDC-based SSO.



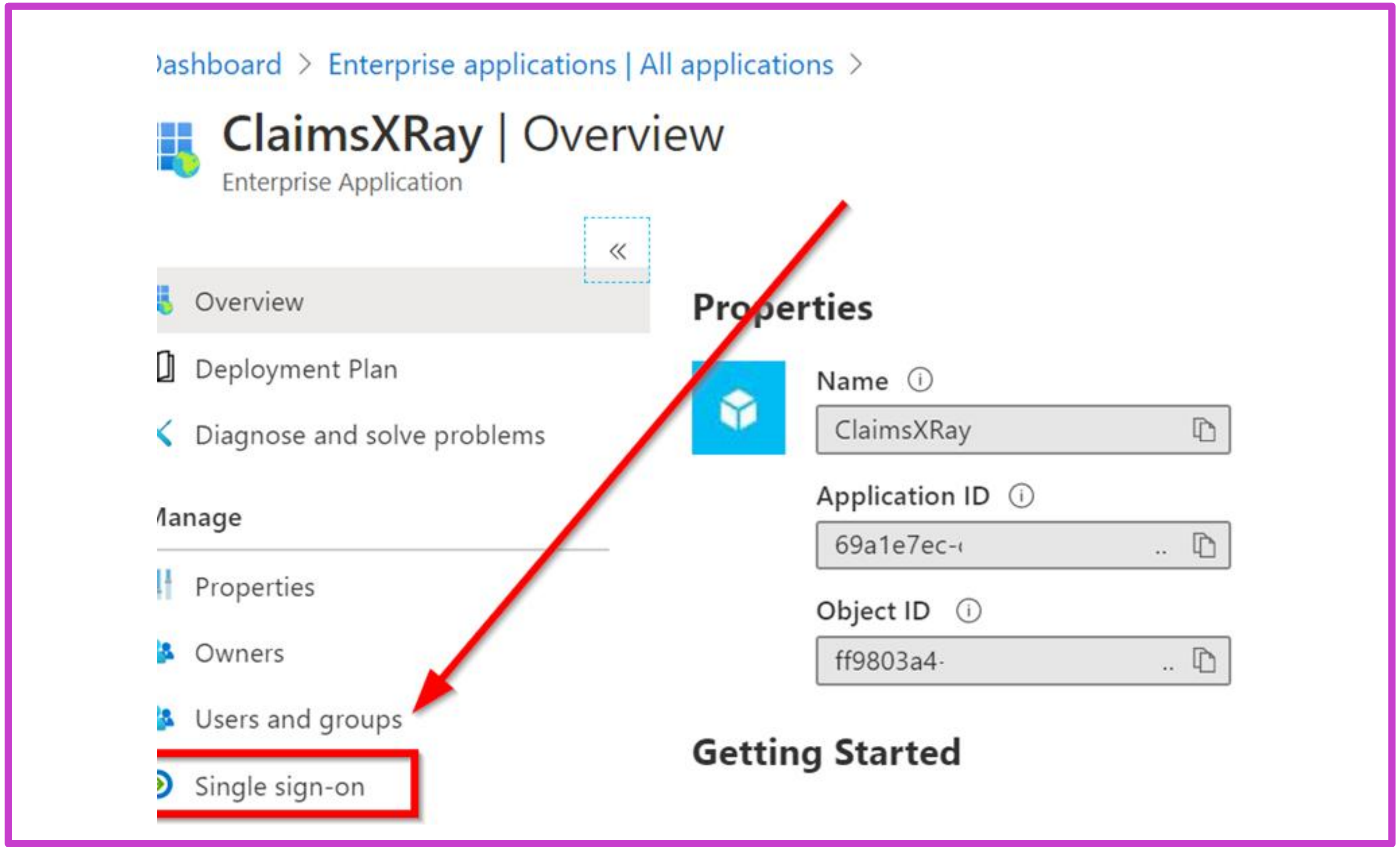
SaaS App Integration Tutorials
https://learn.microsoft.com/en-us/azure/active-directory/saas-apps/tutorial-list

Exercise: Troubleshoot SAML single sign-on for custom SaaS apps

Interactive guide

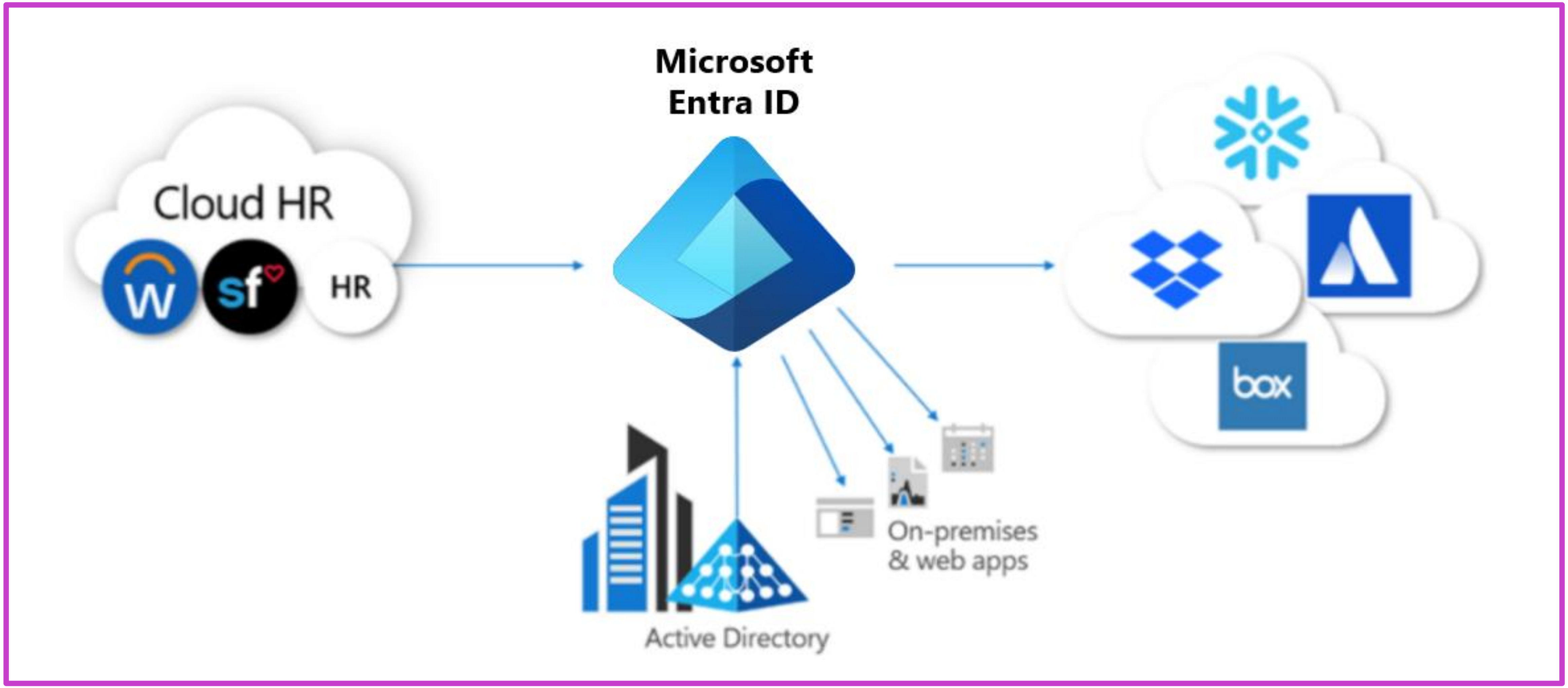
Integrate an application in Microsoft Entra ID providing the single sign-on experience

Visit this interactive guide

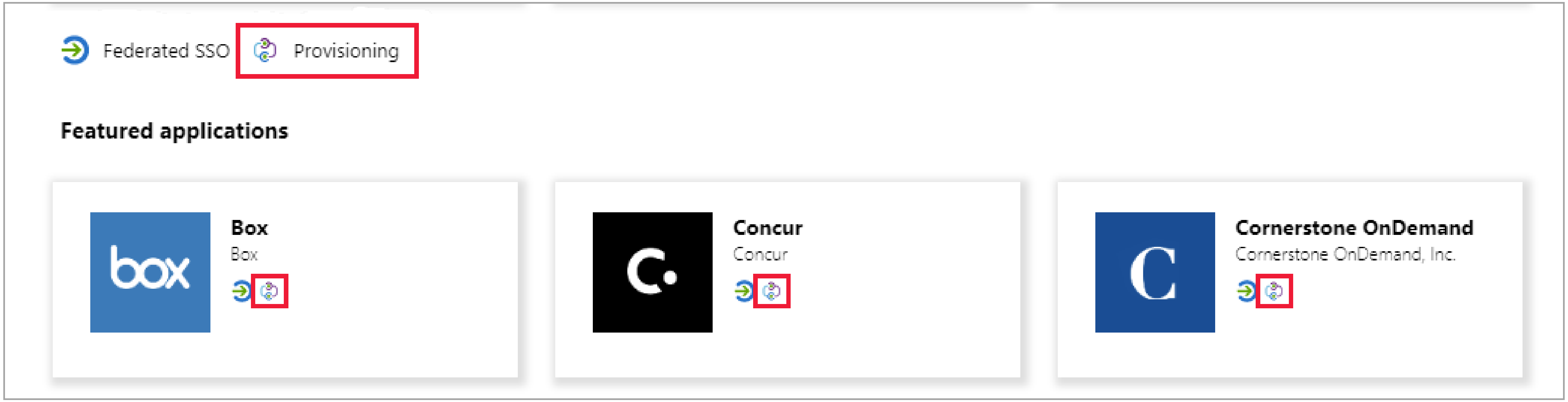


Implement application user provisioning

Application user provisioning



Manual vs. automatic provisioning



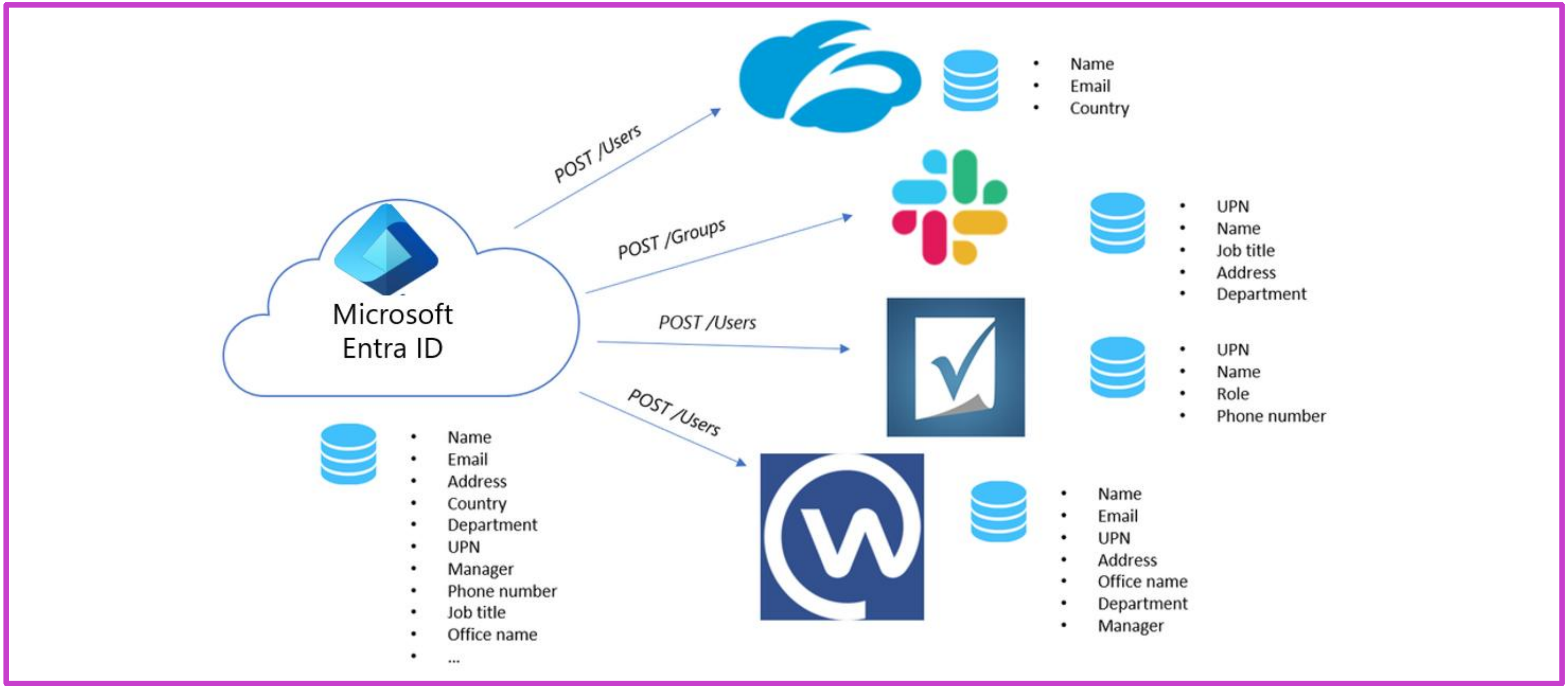
Manual provisioning

As yet, there is no automatic Microsoft Entra provisioning connector for the app yet. User accounts must be created manually.

Automatic provisioning

A Microsoft Entra provisioning connector has been developed for this application.

SCIM provisioning overview



- Name
- Email
- Country

- UPN
- Name
- Job title
- Address
- Department

- UPN
- Name
- Role
- Phone number

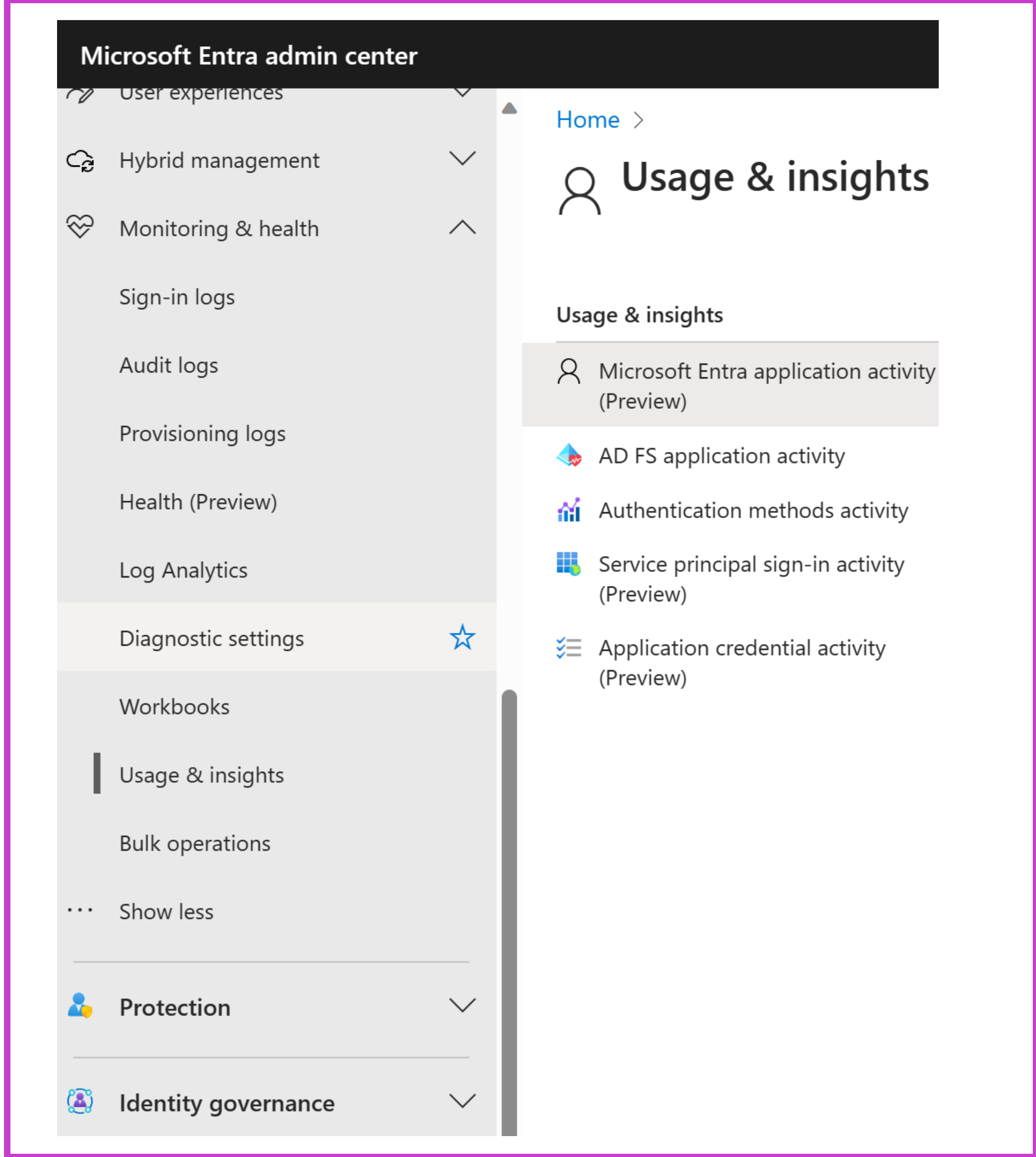
- Name
- Email
- UPN
- Address
- Office name
- Department
- Manager

- Name
- Email
- Address
- Country
- Department
- UPN
- Manager
- Phone number
- Job title
- Office name
- ...

Monitor and audit access/sign-on to Microsoft Entra integrated enterprise applications

Usage and insight reports

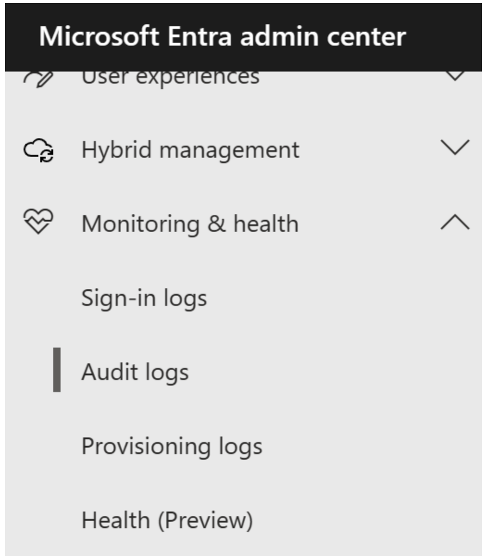
- What are the most used applications in the organization?
- What applications have the most failed sign-ins?
- What are the top sign-in errors for each application?

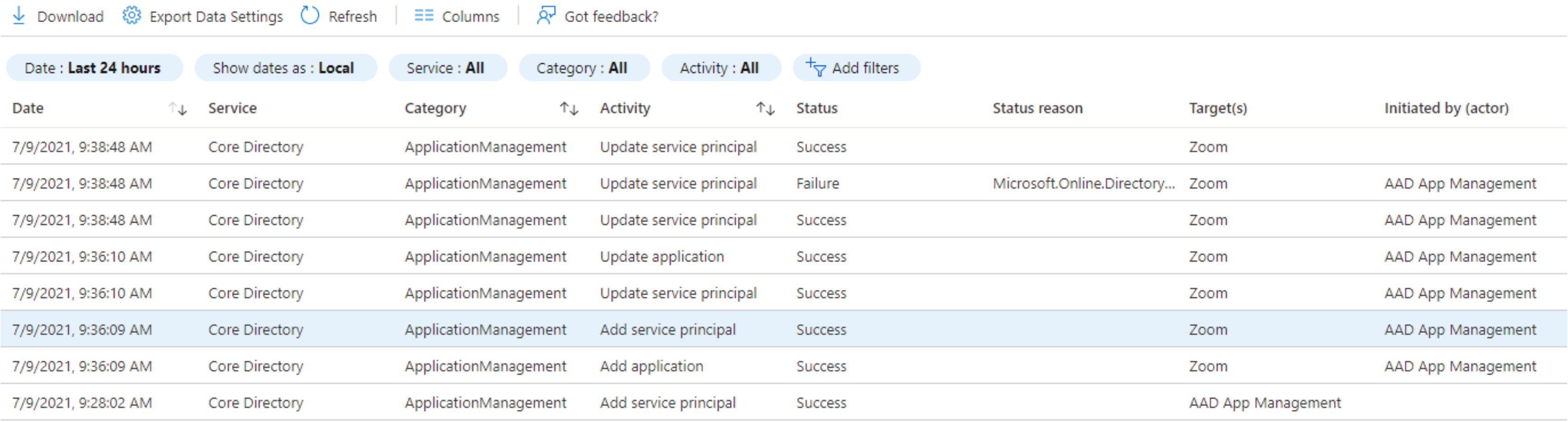


Audit Logs (in Microsoft Entra ID)

Record of system activities for compliance

- The date and time of the occurrence
- The service that logged the occurrence
- The category and name of the activity (what)
- The status of the activity (success or failure)
- The initiator/actor (who) of an activity





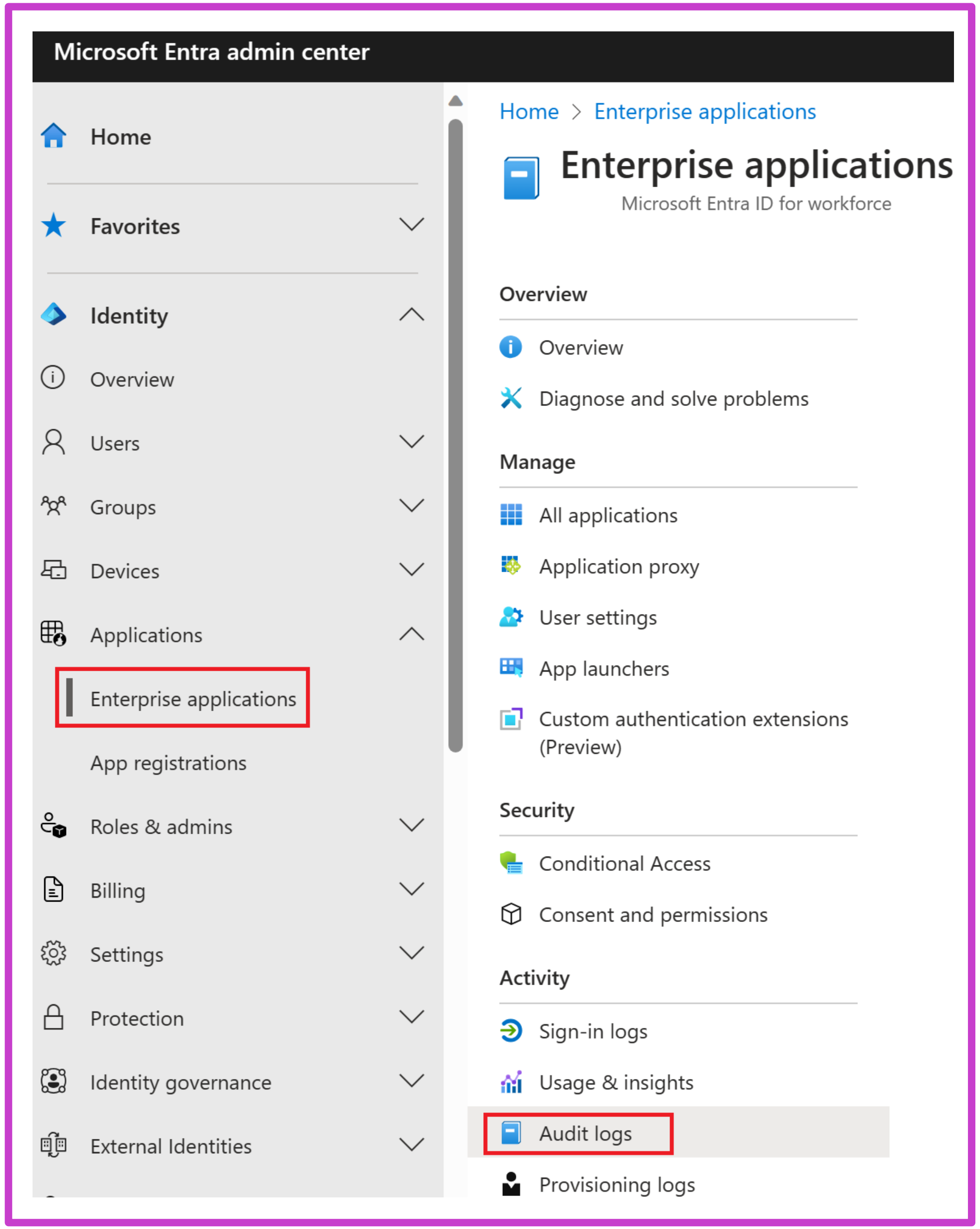
Date : **Last 24 hours** Show dates as : **Local** Service : **All** Category : **All** Activity : **All**

Date	Service	Category	Activity	Status	Status reason	Target(s)	Initiated by (actor)
7/9/2021, 9:38:48 AM	Core Directory	ApplicationManagement	Update service principal	Success		Zoom	
7/9/2021, 9:38:48 AM	Core Directory	ApplicationManagement	Update service principal	Failure	Microsoft.Online.Directory...	Zoom	AAD App Management
7/9/2021, 9:38:48 AM	Core Directory	ApplicationManagement	Update service principal	Success		Zoom	AAD App Management
7/9/2021, 9:36:10 AM	Core Directory	ApplicationManagement	Update application	Success		Zoom	AAD App Management
7/9/2021, 9:36:10 AM	Core Directory	ApplicationManagement	Update service principal	Success		Zoom	AAD App Management
7/9/2021, 9:36:09 AM	Core Directory	ApplicationManagement	Add service principal	Success		Zoom	AAD App Management
7/9/2021, 9:36:09 AM	Core Directory	ApplicationManagement	Add application	Success		Zoom	AAD App Management
7/9/2021, 9:28:02 AM	Core Directory	ApplicationManagement	Add service principal	Success		AAD App Management	

Enterprise applications audit logs

Application-based audit reports

- What applications have been added or updated?
- What applications have been removed?
- Has a service principal for an application changed?
- Have the names of applications been changed?
- Who gave consent to an application?



Create and manage application collections

Create app collections

Create an admin application collection

1. Go to Microsoft Entra ID then select Enterprise Applications.
2. Under Manage, select App Launchers.
3. Select New collection.
4. In the New collection page, enter a Name and Description.
5. Select the Applications tab. Select + Add application to open the Add applications page.
6. Select all the applications you want to add.
7. When you’re finished adding applications, select Add.
8. Select the Owners tab. Select + Add users and groups.
9. Select Review + Create. The properties for the new collection appear.

Create a collection using the My Apps portal

1. Open the My Apps portal.
2. Select the ellipsis (…) on the apps screen.
3. Choose Manage collections.
4. Select Create collection.
5. Select the + Add apps option to add all the apps you want in the collection.
6. After picking your apps, select the Add selected apps button.
7. Give the collection a name and choose Create collection.

Summary

In this section, you learned how to:

- Implement token customizations
- Implement and configure consent settings
- Integrate on-premises apps by using Microsoft Entra Application Proxy
- Integrate custom SaaS apps for SSO
- Implement application user provisioning
- Monitor and audit access/Sign-On to Microsoft Entra ID integrated enterprise applications

Implement app registrations

Learning objectives

1. Plan your line-of-business application registration strategy
2. Implement application registrations
3. Configure application permissions
4. Implement application authorization
5. Manage and monitor applications with app governance

Plan your line-of-business application registration strategy

Why do applications integrate with Microsoft Entra ID?

Add applications to Microsoft Entra ID to leverage one or more of the services it provides, including:

- Application authentication and authorization
- User authentication and authorization
- Single sign-on (SSO) using federation or password
- User provisioning and synchronization
- OAuth authorization services
- Application publishing and proxy
- Directory schema extension attributes
- Role-based access control

Application objects and service principals

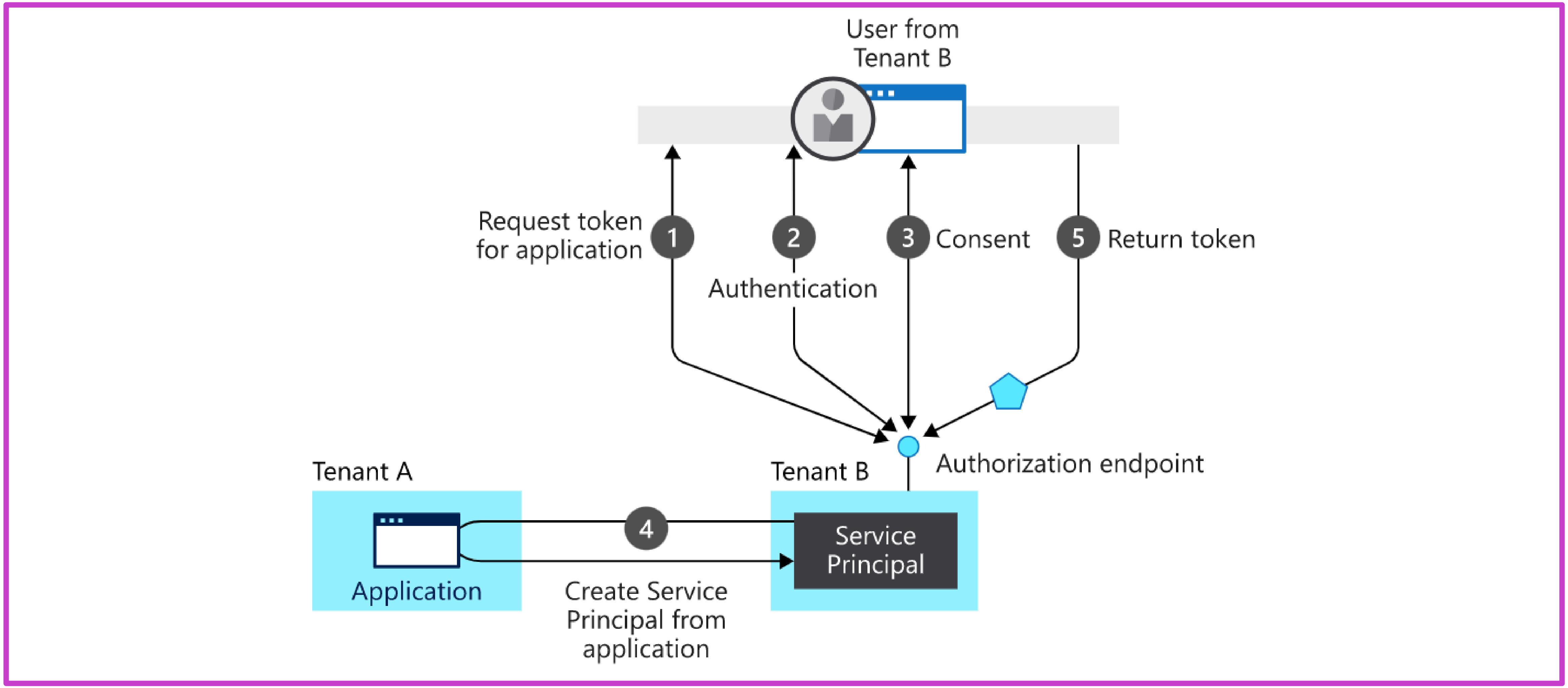
Application objects:

- Define and describe the application to Microsoft Entra ID, enabling it to know how to issue tokens based on its settings
- Will only exist in their tenant

Service principals

- Govern an application connecting to Microsoft Entra ID
- Can be considered the instance of the application in your tenant

New app registration

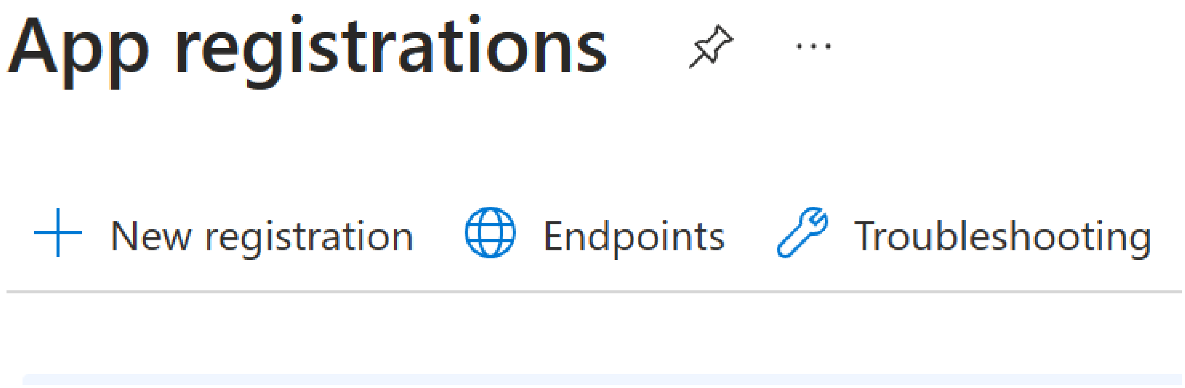


Who has permission to add applications to my Microsoft Entra instance?

- By default, all users in your directory have rights to register application objects they are developing, and they have discretion over which applications they share or give access to their organizational data through consent.
- When the first user in your directory signs into an application and grants consent, that will create a service principal in your tenant; otherwise, the consent grant information will be stored on the existing service principal.

Implement application registrations

Demo: Register and application



After your app is registered:

1. Add a redirect URI
2. Configure platform settings
3. Add credentials
4. Add a certificate and a client secret
5. Register the web API
6. Add a scope

Configure application permissions

Application permissions

Applications that integrate with Microsoft identity platform follow an authorization model that gives users and administrators control over how data can be accessed. Permissions for tasks like these can be controlled:

- Read a user’s calendar
- Write to a user’s calendar
- Send mail as a user

Permissions and consent: permission types

Delegated permissions

- Used by apps that have a signed-in user present
- Either the user or an administrator consents to the permissions that the app requests

Application permissions

- Used by apps that run without a signed-in user present
- Only an administrator can consent to application permissions

OpenID connect scopes

OpenID

By using this permission, an app can receive a unique identifier for the user in the form of the sub claim.

Email

The email claim is included in a token only if an email address is associated with the user account

Profile

It gives the app access to a large amount of information about the user.

Offline access

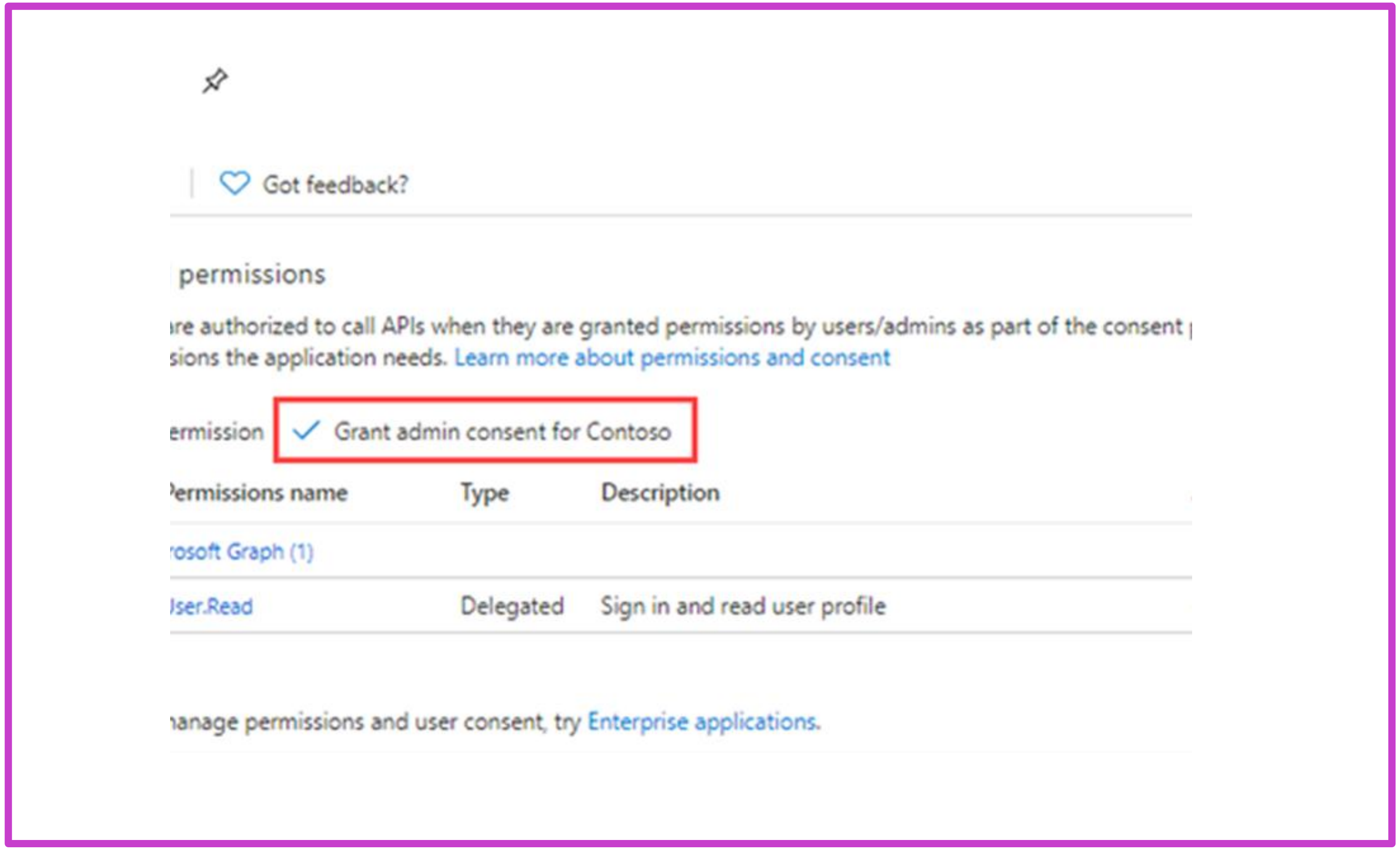
The app can receive refresh tokens from the Microsoft identity platform token endpoint.

Exercise: Grant tenant-wide admin consent to an application

Grant admin consent in app registrations

For applications your organization has developed, or for those that are registered directly in your Microsoft Entra tenant, you can grant tenant-wide admin consent from app registrations in the Microsoft Entra admin center.

[Launch this Exercise in GitHub]



permissions

ıre authorized to call APIs when they are granted permissions by users/admins as part of the consent
sions the application needs. Learn more about permissions and consent

ermission

'ermissions name	Type	Description
rosoft Graph (1)		
Jser.Read	Delegated	Sign in and read user profile

ıanage permissions and user consent, try Enterprise applications.

Implement application authorization

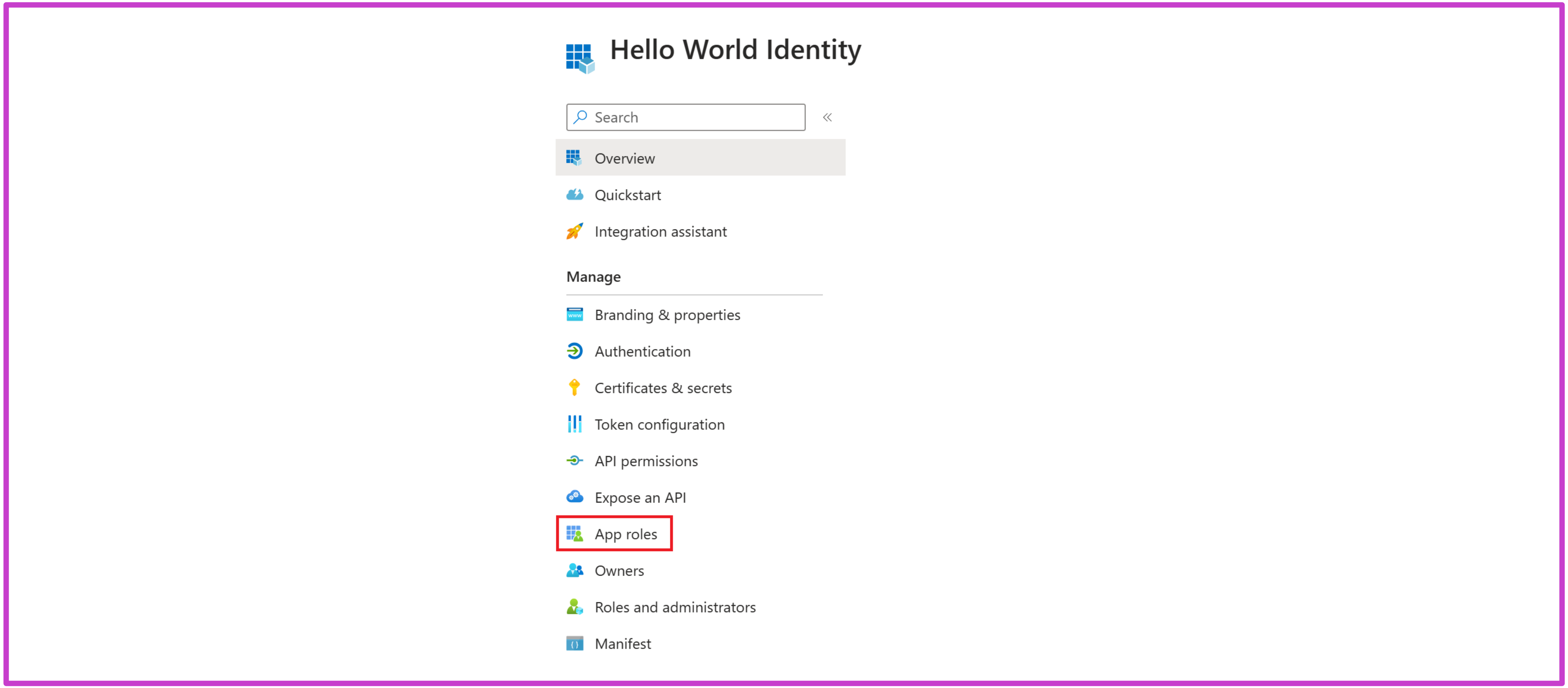
Application roles

Application roles are used to assign permissions to users. You define app roles by using the Microsoft Entra admin center. When a user signs into the application, Microsoft Entra ID emits a roles claim for each role that the user has been granted individually and from their group membership.

There are two ways to declare app roles by using the Microsoft Entra admin center:

- App roles UI
  - Found on the App Registration/App roles
- App manifest editor

Demo: Add app roles to an application



Summary

Now that you have reviewed this section, you should be able to:

- Plan your line-of-business application registration strategy.
- Implement application registrations.
- Configure application permissions.
- Implement application authorization.

Summary

Plan and design single sign-on for apps

- MDCA and ADFS application location
- App discover
- App management roles
- Add on-premises app management

Implement app registration

- Design and app registration strategy
- Register your applications
- Configure app permissions
- Assign app authorization

Implement and monitor enterprise apps

- Consent settings
- Monitor enterprise applications
- Application collections
- Add on-premises app management

Labs

Lab	Brief description	Length
17. App discovery	Use Defender for Cloud Apps application discovery and enforce a restriction.	15 minutes
18. App access policies	Configure app access policies in Defender for Cloud Apps.	10 minutes
19. Register an application	Registering your application establishes a trust relationship between your app and the Microsoft identity platform.	10 minutes
20. Implement access management for apps.	Add an enterprise app and assign your administrator account.	5 minutes
21. Grant tenant wide access to an app	For applications registered directly in your Microsoft Entra tenant, grant tenant-wide admin consent from app registrations in the Microsoft Entra admin center.	10 minutes

Learning path recap

In this learning path, you learned how to:

Configure and implement identity solutions for applications in Azure.

Compare and contrast managed identities and service principals.

Register and manage both apps and enterprise apps.

End of presentation