



# Azure AD ワークブック

**Daniel Wood**

プログラム マネージャー

Azure AD Identity Security

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# Azure AD ワークブック を一般的な攻撃パ ターンの理解に役立て ることの重要性

01. Azure AD ワークブックのアクセス方法
02. パート 1:変更されたアプリケーションとサービス プリンシパルの資格情報と認証方法
03. パート 2:変更されたフェデレーション設定
04. パート 3:サービス プリンシパルに付与された新しいアクセス許可
05. パート 4:サービス プリンシパル メンバーシップに対して行われた変更の概要

01.

**Azure portal** に  
サインインします。

02.

**[Azure Active  
Directory] > [監視] >  
[ワークブック]** に移動します。

03.

トラブルシューティングのセクションにあ  
る **Sensitive Operations  
Report** を開きます。

01.

# 変更されたアプリケーションと サービスプリンシパルの資格情 報と認証方法

- External Identities
- Roles and administrators
- Administrative units
- Enterprise applications
- Devices
- App registrations
- Identity Governance
- Application proxy
- Licenses
- Azure AD Connect
- Custom domain names
- Mobility (MDM and MAM)
- Password reset
- Company branding
- User settings
- Properties
- Security
- Monitoring**
- Sign-ins
- Audit logs
- Provisioning logs (Preview)
- Logs
- Diagnostic settings
- Workbooks**
- Usage & insights
- Troubleshooting + Support
- Virtual assistant (Preview)
- New support request

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## Modified Application and Service Principal Credentials/Authentication Methods

Applications and service principals can have multiple authentication methods that are simultaneously valid. It's important to monitor updates to your service principal authentication methods in case bad actors are adding new rogue credentials to allow themselves to authenticate as that service principal.

TimeRange: Last 60 days Operation name: All Credential: All Actor: All Exclude actor: None

### Number of application and service principals updated by authentication method (Last 60 days)

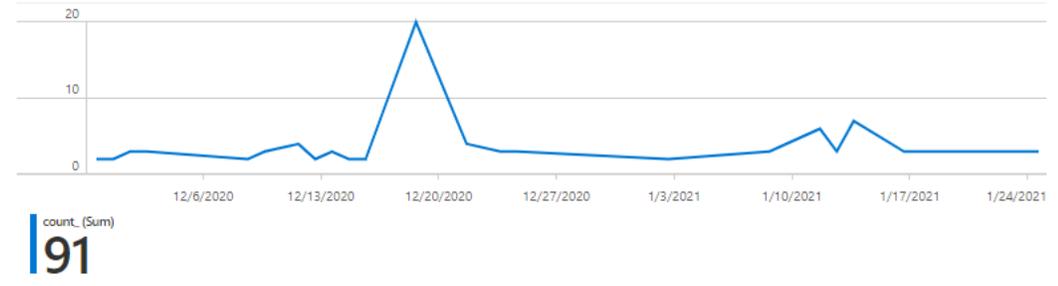


### Top actors updating authentication methods (Last 60 days)

Search

Actor	Actor_Type	ServicePrincipalsChanged
Managed Service Identity	App	12
jeffs@woodgrove.ms	User	3
joeyc@woodgrove.ms	User	3
Azure AD Application Proxy	App	2
Domain Controller Services	App	1
Azure ESTS Service	App	1

### Updates to service principal authentication methods over time



### Recent updates to application/service principal authentication methods

Search

TimeGenerated	OperationName	Actor	Actor_Type	Service_Principal_Name	credential	Service_Principal_ID
1/25/2021, 2:03:34 AM	Add service principal credentials	Managed Service Identity	App	woodgrovechecklist	Other/not logged	1af2f52c-f74f-4a86-8eec-d...
1/25/2021, 2:03:34 AM	Add service principal credentials	Managed Service Identity	App	woodgrovechecklist	AsymmetricX509Cert	1af2f52c-f74f-4a86-8eec-d...
1/25/2021, 2:03:34 AM	Add service principal credentials	Managed Service Identity	App	woodgrovechecklist	Other/not logged	1af2f52c-f74f-4a86-8eec-d...
1/24/2021, 1:03:46 PM	Add service principal credentials	Managed Service Identity	App	woodgrove-app	Other/not logged	dcfce8f2-17b4-4139-8d97-

01.

# 変更されたアプリケーション とサービスプリンシパルの資 格情報と認証方法

アプリとサービスプリンシパルに追加されたすべての新しい資格情報（資格情報の種類を含む）

上位のアクターとそれぞれが行った資格情報変更の量

すべての資格情報変更のタイムライン

02.

## 変更されたフェデレーション設定

# Woodgrove | Workbooks | Sensitive Operations Report

Azure Active Directory

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- Sign-ins
- Audit logs
- Provisioning logs (Preview)
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- Modified application and service principal credentials/authentication methods
- New permissions granted to service principals
- Directory role and group membership updates to service principals

## Modified federation settings

This section monitors when a user or application modifies the federation settings on the domain. For example, this alert will trigger when a new Active Directory Federated Service (ADFS) TrustedRealm object, such as a signing certificate, is added to the domain. Modification to domain federation settings should be rare. Confirm the added or modified target domain/URL is legitimate administrator behavior.

- To understand why an authorized user may update settings for a federated domain in Office 365, Azure, or Intune, see: <https://docs.microsoft.com/office365/troubleshoot/active-directory/update-federated-domain-office-365>.
- For details on security realms that accept security tokens, see the ADFS Proxy Protocol (MS-ADFSPP) specification: [https://docs.microsoft.com/openspecs/windows\\_protocols/ms-adsfpp/e7b9ea73-1980-4318-96a6-da559486664b](https://docs.microsoft.com/openspecs/windows_protocols/ms-adsfpp/e7b9ea73-1980-4318-96a6-da559486664b).

TimeRange: Last 60 days Operation: All InitiatingUserOrApp: All

TimeGenerated	OperationName	InitiatingUserOrApp	AADOperationType	targetDisplayName	TargetResources	Result	UserAgent
12/18/2020, 8:59:57 PM	Set federation settings on domain	jeffs@woodgrove.ms	Update	woodgrove.net	[{"displayName":"woodgrove.net","administrativeUnits":[]},...	success	
12/7/2020, 3:37:54 PM	Add verified domain	joeyc@woodgrove.ms	Add	Unknown	[{"displayName":"Unknown","administrativeUnits":[],"mod...	failure	Mozilla/5.0 (Windows NT 10...
12/7/2020, 3:12:05 PM	Add verified domain	joeyc@woodgrove.ms	Add	Unknown	[{"displayName":"Unknown","administrativeUnits":[],"mod...	failure	Mozilla/5.0 (Windows NT 10...
12/7/2020, 3:11:40 PM	Add unverified domain	joeyc@woodgrove.ms	Add	pre2.woodrove.ms	[{"displayName":"pre2.woodrove.ms","administrativeUnits...	success	Mozilla/5.0 (Windows NT 10...
12/7/2020, 3:10:58 PM	Add verified domain	joeyc@woodgrove.ms	Add	Unknown	[{"displayName":"Unknown","administrativeUnits":[],"mod...	failure	Mozilla/5.0 (Windows NT 10...

02.

## 変更されたフェデレーション設定

既存のドメイン フェデレーション信頼  
に対して行われた変更

新しいドメインや信頼の追加

03.

サービスプリンシパルに付与され  
た新しいアクセス許可

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- Audit logs
- Provisioning logs (Preview)
- Logs
- Diagnostic settings
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## New permissions granted to service principals

This section monitors for changes to OAuth 2.0 permissions granted to Service Principals. For example, this alert will trigger when a Service Principal is granted Application (AppOnly) permissions to read mail through the Microsoft Graph API. When this occurs, the Service Principal is added to an App Role with a value of Mail.Read.

An attacker could elevate their privileges by using a compromised account to grant new permissions to a Service Principal they control, or by tricking a user into granting permissions. Investigations should focus on high privilege permissions that either grant access to sensitive data, or represent opportunities for lateral movement by attackers.

The first view in this section focuses specifically on Application permissions, which generally (but not always) represent higher risk. The second view is broader- it includes Delegated (App+User) permissions grants and additional audit events.

TimeRange: Last 60 days ▼ ClientApp: All ▼ Resource: All ▼

### New Application (AppOnly) permissions added to service principals

Resource	↑↓ ClientApp	↑↓ Role_Added	↑↓ Explanation	↑↓ InitiatingUserOrApp	↑↓ TimeGenerated	↑↓
▼ Office 365 Exchange Online (4)						
> "JeffTestCreds2" (4)						
▼ Microsoft Graph (4)						
▼ "JeffTestCreds2" (3)						
	"JeffTestCreds2"	"Application.Read.All"	"Read all applications"	jeffs@woodgrove.ms	12/20/2020, 1:54:46 PM	
	"JeffTestCreds2"	"Mail.Send"	"Send mail as any user"	jeffs@woodgrove.ms	12/22/2020, 11:56:24 AM	
	"JeffTestCreds2"	"Mail.ReadWrite"	"Read and write mail in all mailboxes"	jeffs@woodgrove.ms	12/22/2020, 11:56:24 AM	
> "Mimorony AuthTS API" (1)						
▼ Office 365 SharePoint Online (1)						
> "JeffTestCreds2" (1)						

TimeRange: Last 48 hours ▼ Operation: All ▼ InitiatingUserOrApp: All ▼

### Recent app permissions activity

TimeGenerated	↑↓ InitiatingUserOrApp	↑↓ OperationName	↑↓ ClientApp	↑↓ Resource	↑↓ Result	↑↓
1/26/2021, 4:25:23 PM	jerryw@woodgrove.ms	Consent to application	CCE Test	Not logged	success	

04.

## サービス プリンシパル メンバーシップ に対して行われた変更の概要

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- Devices
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- Company branding
- User settings
- Properties
- Security
- Monitoring**
- Sign-ins
- Audit logs
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## Sensitive Operations Report - Apps, Service Principals and Federation Settings

Workspace: All ▼

This workbook is intended to help identify suspicious application and service principal activity that may indicate compromises in your environment. [Learn more](#) about best practices to protect M365 from attacks.

- Modified application and service principal credentials/authentication methods
- New permissions granted to service principals

### Directory role and group membership updates to service principals

This section monitors for Service Principals being as members of Directory Roles (admin roles) or Groups. For example, this alert will trigger when a Service Principal is added to the Company Administrator or Application Administrator role.

An attacker could elevate their privileges by adding a Service Principal they control to a high privileged role or a group that is used to protect access to sensitive resources. Investigations should focus on administrator rules and Groups that either grant access to sensitive data or represent opportunities for lateral movement by attackers.

TimeRange: Last 60 days ▼ Operation: Add member to role ^ InitiatingUserOrApp: All ▼

TimeGenerated	InitiatingUser	Items	ServicePrincipalDisplayName	GroupOrRoleNameAddedTo
12/22/2020, 11:49:13 AM	jeffs@woo	All	JeffTestCreds2	"Application Administrator"
12/22/2020, 11:52:28 AM	jeffs@woo	Add member to role	Risky App	"Global Administrator"
12/20/2020, 7:46:25 PM	jeffs@woo	Add eligible member to role	JeffTestCreds2	"Security Operator"

Select

- All
- Add member to role
- Add eligible member to role
- Add scoped member to role
- Add member to group

Modified federation settings

Solorigate の概要

## 次のステップ°

01 この場所にある Solorigate ビデオ シリーズを見る

02 Microsoft Security にアクセスして最新情報を入手する:

[www.microsoft.com/ja-jp/security/business](https://www.microsoft.com/ja-jp/security/business)

03 ブログを読む:

[www.microsoft.com/security/blog/](https://www.microsoft.com/security/blog/)

<https://aka.ms/solorigate>

