Microsoft

Skoroszyty usługi Azure AD

Daniel Wood

Kierownik programowy

Zabezpieczenia tożsamości w usłudze Azure AD

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Seria filmów wideo o ataku Solorigate

Znaczenie korzystania ze skoroszytu usługi Azure AD w celu ułatwienia dostrzeżenia typowych wzorców ataku

Microsoft Security

01. Jak uzyskać dostęp do skoroszytu usługi Azure AD

02. Część 1. Zmodyfikowana aplikacja oraz poświadczenia usługi i metody uwierzytelniania

03. Część 2. Zmodyfikowane ustawienia federacyjne

04. Część 3. Nowe uprawnienia przyznane jednostkom usług

05. Część 4. Omówienie zmian w członkostwie jednostek usług

01.

Zaloguj się w witrynie **Azure Portal**.

02.

Przejdź do pozycji **Azure Active Directory > Monitorowanie > Skoroszyty**

03.

W sekcji Rozwiązywanie problemów otwórz **Raport dotyczący operacji wrażliwych**

01.

Zmodyfikowana aplikacja oraz poświadczenia jednostek usług/metod uwierzytelniania

Woodgrove | Workbooks | Sensitive Operations Report

Azure Active Directory

External Identities
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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

Workbooks | Edit

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)

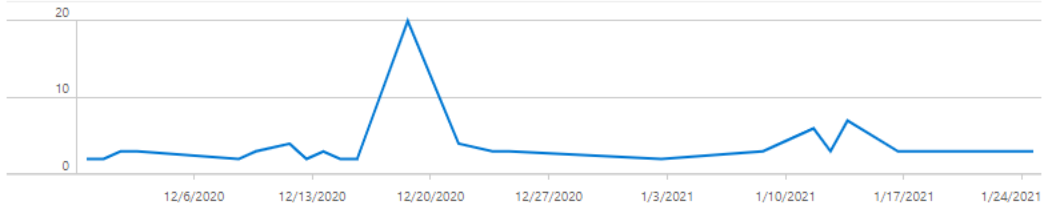
AsymmetricX509Cert	Other/not logged	Password	X509CertAndPassword
15	23	6	1

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



count_ (Sum)
91

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	dcbce8f2-17b4-4139-8d97-

01.

Zmodyfikowana aplikacja oraz poświadczenia usługi i metody uwierzytelniania

Zupełnie nowe poświadczenia dodane do aplikacji i jednostek usług, w tym typ poświadczeń

Główni aktorzy i liczba wprowadzonych przez nich modyfikacji poświadczeń

Oś czasu dla wszystkich zmian poświadczeń

02.

Zmodyfikowane ustawienia federacyjne

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External Identities
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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
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Workbooks | Edit

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

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-adfspp/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.

Zmodyfikowane ustawienia federacyjne

Zmiany wprowadzone w relacjach zaufania federacji istniejącej domeny

Dodanie nowych domen i relacji zaufania

03.

Nowe uprawnienia przyznane jednostkom usług

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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

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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

Search

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.

Omówienie zmian w członkostwie jednostek usług

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External Identities
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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

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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

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

Select
- [ ] All

Items
- [x] Add member to role
- [ ] Add eligible member to role
- [ ] Add scoped member to role
- [ ] Add member to group

TimeGenerated	InitiatingU	ServicePrincipalDisplayName	GroupOrRoleNameAddedTo
12/22/2020, 11:49:13 AM	jeffs@woo	JeffTestCreds2	"Application Administrator"
12/22/2020, 11:52:28 AM	jeffs@woo	Risky App	"Global Administrator"
12/20/2020, 7:46:25 PM	jeffs@woo	JeffTestCreds2	"Security Operator"

Modified federation settings

Omówienie ataku Solorigate

Następne kroki

01 Obejrzyj serię filmów wideo o ataku Solorigate w tej lokalizacji

02 Zobacz rozwiązania zabezpieczające firmy Microsoft, aby uzyskać najnowsze informacje: www.microsoft.com/en-us/security/business

03 Przeczytaj wpisy w blogu: www.microsoft.com/security/blog/

https://aka.ms/solorigate

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