

Azure Sentinel

Pete Bryan

Kỹ sư Cấp cao

Trung tâm Thông tin về Mối đe dọa của Microsoft

18/02/2021

Cách Microsoft Azure Sentinel trợ giúp tìm kiếm hoạt động tấn công trong toàn doanh nghiệp

- 01.** Cách tìm kiếm các cuộc tấn công Solorigate
- 02.** Sử dụng nhật ký Sự kiện Windows và Azure Sentinel
- 03.** Để ý dữ liệu thô trong Azure Sentinel và Bộ bảo vệ Microsoft dành cho Điểm cuối
- 04.** Để ý các dấu hiệu đánh cắp mã thông báo SAML của chứng chỉ
- 05.** Cảnh báo của Bộ bảo vệ Microsoft 365 & Sentinel
- 06.** Sử dụng sổ làm việc Azure Sentinel và GitHub

Home > Azure Sentinel workspaces >

Azure Sentinel | Overview 🖨️

Selected workspace: 'cybersecuritysoc'

🔍 Search (Ctrl+/)

⏮️ Refresh ⌚ Last 14 days ▾

General

Overview

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News & guides

Threat management

Incidents

Workbooks

Hunting

Notebooks (Preview)

Entity behavior

Threat intelligence (Preview)

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Entity Settings (Preview)

Watchlist (Preview)

Playbooks

Community

Settings

50M ↗ 13.1M

Events

1.2K ↗ 520

Alerts

1.6K ↗ 936

Incidents

Incidents by status

New (1.6K)

Active (6)

Closed (True Positive) (1)

Closed (False Positive) (1)

Events and alerts over time

Events

Alerts

ALERTS 1.2K

AZUREDIAGNO... 18.2M

COMMONSECU... 8.4M

INSIGHTSMETR... 3.8M

OTHERS (55) 19.7M

Potential malicious events

POTENTIAL MALICIOUS EVENTS

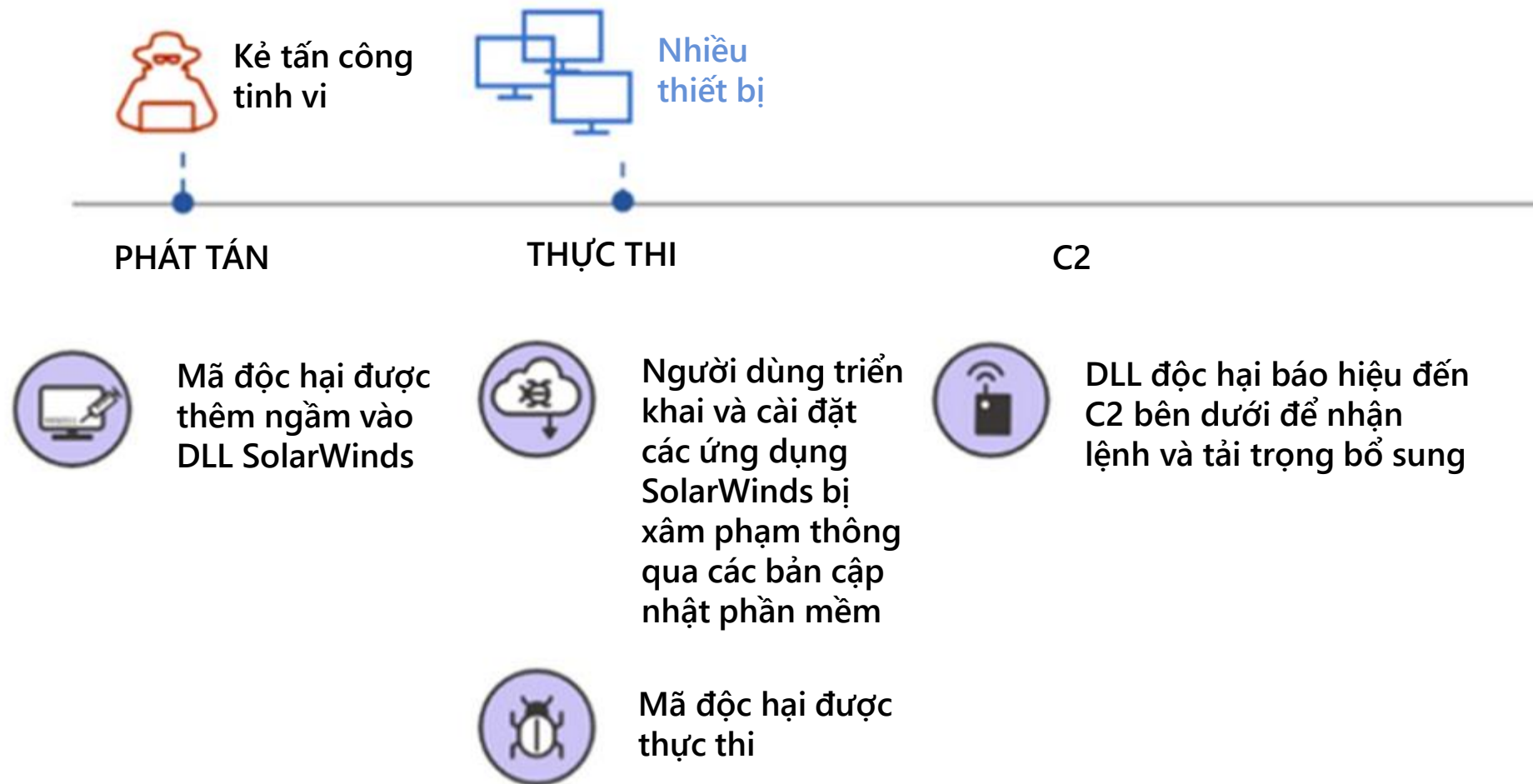
Recent incidents

Low	DDoS Attack mitigated for Public IP	1 Aler
High	DDoS Attack detected for Public IP	1 Aler
Medium	TI map IP entity to AzureActivity (enriched)	1 Aler
Medium	Time series anomaly detection for total v...	5 Aler
Low	DDoS Attack mitigated for Public IP	1 Aler

Data source anomalies

DnsEvents

AzureDiagnostics



Biểu đồ cuộc tấn công vào chuỗi cung ứng Solorigate

Microsoft Azure (Preview)

Report a bug

Search resources, services, and docs (G+)

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Home > Azure Sentinel workspaces > Azure Sentinel

Azure Sentinel | Logs

Selected workspace: 'cybersecuritysoc'

Search (Ctrl+/)

New Query 1*

CyberSecuritySOC

Tables

Queries

Filter

Search

Filter

Group by: Solution

Collapse all

Favorites

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Azure Monitor for VMs

Azure Sentinel

Azure Sentinel UEBA

DNS Analytics (Preview)

LogManagement

Network Performance Monitor

Security and Audit

SecurityCenterFree

SQL Vulnerability Assessment

WindowsEventForwarding

Custom Logs

Functions

Run

Time range : Last 24 hours

Save

Copy link

New alert rule

Export

Pin to dashboard

Format query

(union isfuzzy=true

(

SecurityEvent

| where EventID == '4688'

| where NewProcessName has 'SolarWinds'

| extend MachineName = Computer , Process = NewProcessName

),

(

DeviceProcessEvents

| where InitiatingProcessFolderPath has 'SolarWinds'

| extend MachineName = DeviceName , Process = InitiatingProcessFolderPath

)

)

| summarize StartTime = min(TimeGenerated), EndTime = max(TimeGenerated), make_set(Process) by MachineName

Results

Chart

Columns

Add bookmark

Display time (UTC+00:00)

Group columns

Completed. Showing results from the last 24 hours.

00:00.5

4 records

	MachineName	StartTime [UTC]	EndTime [UTC]	set_Process
>	SolWinds1	12/14/2020, 11:14:21.000 AM	12/14/2020, 11:21:41.000 AM	["c:\\program files (x86)\\solarwinds\\orion\\erlang\\erts-10.1\\bin\\erl.exe", "c:\\program files (x86)\\sc...
>	SolWinds2	12/15/2020, 2:05:32.000 AM	12/15/2020, 2:05:32.000 AM	["c:\\program files (x86)\\solarwinds\\orion\\sqlexpress\\mssql14.solarwinds_orion\\mssql\\binn\\fdlau
>	SolWinds3	12/7/2020, 4:48:29.000 PM	12/7/2020, 4:48:29.000 PM	["c:\\program files (x86)\\solarwinds\\orion\\sqlexpress\\mssql14.solarwinds_orion\\mssql\\binn\\fdlau
>	SolWinds4	12/9/2020, 10:08:42.000 PM	12/9/2020, 10:08:42.000 PM	["c:\\program files (x86)\\solarwinds\\orion\\sqlexpress\\mssql14.solarwinds_orion\\mssql\\binn\\fdlau

Page 1 of 1

50 items per page

1 - 4 of 4 items

🕒 00:03.4 📄 0 records ⌵

i No query was selected
Type a query and place the cursor anywhere in the query.
A query can contain line breaks, but no blank lines.

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Home > Azure Sentinel workspaces > Azure Sentinel

Azure Sentinel | Logs

Selected workspace: 'cybersecuritysoc'

Search (Ctrl+ /)

New Query 1*

CyberSecuritySOC

Run

Time range: Last 24 hours

Save

Copy link

New alert rule

Export

Pin to dashboard

Format query

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Filter

Group by: Solution

Collapse all

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WindowsEventForwarding

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Functions

8 (union isfuzzy=true

9 (Event

10 | where Source == "Microsoft-Windows-Sysmon"

11 | where EventID in (17,18)

12 | extend EvData = parse_xml(EventData)

13 | extend EventDetail = EvData.DataItem.EventData.Data

14 | extend NamedPipe = EventDetail.[5].["#text"]

15 | extend ProcessDetail = EventDetail.[6].["#text"]

16 | where NamedPipe contains '583da945-62af-10e8-4902-a8f205c72b2e'

17 | extend Account = UserName

18 | project-away EventDetail, EvData

19),

20 (

21 SecurityEvent

22 | where (EventID == '5145' and AccessList has '%"4418' and RelativeTargetName contains '583da945-62af-10e8-4902-a8f205c72b2e')

23 or (EventID == "4688" and FilePath =~ "c:\\windows\\syswow64\\netsetupsvc.dll" or NewProcessName =~ "c:\\windows\\syswow64\\netsetupsvc.

24 dll")),

25 (DeviceProcessEvents

26 | where FolderPath =~ "c:\\windows\\syswow64\\netsetupsvc.dll"))

27 | summarize FirstSeen = min(TimeGenerated), Processes=make_set(NewProcessName) by Computer, IPAddress

Results

Chart

Columns

Add bookmark

Display time (UTC+00:00)

Group columns

Completed. Showing results from the last 24 hours.

00:00.5

2 records

Computer

IpAddress

FirstSeen [UTC]

Processes

Computer

SolWinds1

IpAddress

10.7.1.15

FirstSeen [UTC]

2020-12-16T07:54:01Z

Processes

["c:\\windows\\syswow64\\netsetupsvc.dll"]

Page 1 of 1

50 items per page

1 - 2 of 2 items

[Feedback](#)
[Queries](#)
[Query explorer](#)
[Settings](#)
[Help](#)

 Settings

 Format query

- Functions

🕒 05:54.7 📄 0 records ⌵

i No query was selected
Type a query and place the cursor anywhere in the query.
A query can contain line breaks, but no blank lines.

Alerts > **ADFS private key extraction attempt**

ADFS private key extraction attempt

windows10-atp-x1.atp.local Risk level ■ ■ ■ High atp\mind0xp

ALERT STORY

[4280] SecurityHealthSystray.exe

[7448] OneDrive.exe /background

File create

dump_em_all.exe

🚩 Suspicious file dropped ■ ■ ■ Medium ● New ● Detected

[7956] dump_em_all.exe

Image load

dump_em_all.exe

🚩 Suspicious file dropped ■ ■ ■ Medium ● New ● Detected

dump_em_all.exe ran an LDAP query

LDAP Search query (&((thumbnailphoto=*))((objectClass=contact)((cn=CryptoPolicy)))

Distinguished name CN=ADFS,CN=Microsoft,CN=Program Data,DC=ATPDC=local

Action time Jan 10, 2021, 7:09:02 PM

🚩 **ADFS private key extraction attempt** ■ ■ ■ High ● New ● Detected

[7936] WerFault.exe -u -p 7956 -s 1428

Details

ADFS private key extraction attempt

■ ■ ■ High New

See in timeline Link to another incident Assign to me

Manage alert

Classify this alert True alert False alert

Status New

Classification Select classification...

Alert details

Incident Multi-stage incident involving Execution & Credential access on one endpoint (open in Microsoft 365 Defender)

Detection source EDR

Detection technology Behavioral

Detection status Detected

Category CredentialAccess

Techniques T1003: OS Credential Dumping T1528: Steal Application Access Token

First activity Jan 10, 2021, 7:09:02 PM

Last activity Jan 10, 2021, 7:09:02 PM

"Nỗ lực truy nhập tài liệu khóa ADFS có thể" — phát hiện khi một truy vấn LDAP đáng ngờ đang tìm kiếm tài liệu khóa nhạy cảm trong AD.

"Hoạt động trích xuất khóa riêng tư ADFS" — phát hiện các kiểu từ các công cụ như ADFSDump.

Microsoft Azure (Preview)

Report a bug

Search resources, services, and docs (G+)

3

?

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Home > Azure Sentinel workspaces >

Azure Sentinel | Overview

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Search (Ctrl+ /)

Refresh

Last 14 days

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50.2M

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13.3M

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517

1.6K

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1.2K

AZUREDIAGNO...

18.2M

COMMONSECU...

8.4M

INSIGHTSMETR...

3.9M

OTHERS (55)

19.8M

Recent incidents

High

ADFS DKM Master Key Export

1 Aler

Medium

Azure activity matching known threats

1 Aler

Medium

TI map IP entity to AzureActivity (enriched)

2 Aler

Medium

Potential Password Spray

1 Aler

Medium

Time series anomaly detection for total v...

3 Aler

Data source anomalies

DnsEvents

AzureDiagnostics

Potential malicious events

POTENTIAL MALICIOUS EVENTS

Microsoft Azure (Preview)

Report a bug

Search resources, services, and docs (G+)

Home > Azure Sentinel workspaces > Azure Sentinel

Azure Sentinel | Logs

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Search (Ctrl+)

New Query 1*

CyberSecuritySOC

Run

Time range: Last 24 hours

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Microsoft Azure (Preview) Report a bug Search resources, services, and docs (G+)

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Azure Sentinel | Logs

Selected workspace: 'cybersecuritysoc'

Search (Ctrl+/)

New Query 1* x +

CyberSecuritySOC

Run Time range: Set in query Save Copy link New alert rule Export Pin to dashboard Format query

```
27 | join (
28 | OfficeActivity
29 | where TimeGenerated > ago(7d)
30 | where OfficeWorkload == "Exchange" and Operation == "MailItemsAccessed" and ResultStatus == "Succeeded"
31 | extend timekey = bin(TimeGenerated, 1h)
32 | on $left:TimeGenerated == $right:timekey
33 | project-away Total, baseline, RecordType, timekey, TimeGenerated
34 | project-reorder TimeGenerated1, anomalies, Operation, UserId, Client_IPAddress, UserAgent
```

Results Chart Columns Add bookmark Display time (UTC+00:00) Group columns

Completed 00:00.8 8 records

	TimeGenerated1 [UTC]	anomalies	Operation	UserId	Client_IPAddress	score	OrganizationId	Orga
>	1/20/2021, 4:57:35.000 AM	1	MailItemsAccessed	MeganB@seccxp.ninja	34.207.252.21	1.667	4b2462a4-bbee-495a-a0e1-f23ae524cc9c	4b24
>	1/20/2021, 4:57:35.000 AM	1	MailItemsAccessed	MeganB@seccxp.ninja	34.207.252.21	1.667	4b2462a4-bbee-495a-a0e1-f23ae524cc9c	4b24
>	1/20/2021, 4:40:23.000 AM	1	MailItemsAccessed	MeganB@seccxp.ninja	174.129.96.41	1.667	4b2462a4-bbee-495a-a0e1-f23ae524cc9c	4b24
>	1/20/2021, 4:40:23.000 AM	1	MailItemsAccessed	MeganB@seccxp.ninja	174.129.96.41	1.667	4b2462a4-bbee-495a-a0e1-f23ae524cc9c	4b24
>	1/21/2021, 8:07:28.000 AM	1	MailItemsAccessed	MeganB@seccxp.ninja	3.94.57.166	1.452	4b2462a4-bbee-495a-a0e1-f23ae524cc9c	4b24
>	1/21/2021, 8:07:28.000 AM	1	MailItemsAccessed	MeganB@seccxp.ninja				
>	1/21/2021, 8:37:48.000 AM	1	MailItemsAccessed	MeganB@seccxp.ninja				
>	1/21/2021, 8:37:48.000 AM	1	MailItemsAccessed	MeganB@seccxp.ninja				

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Microsoft Azure (Preview) Report a bug Search resources, services, and docs (G+)

Home > Azure Sentinel workspaces > Azure Sentinel

Azure Sentinel | Logs

Selected workspace: 'cybersecuritysoc'

Search (Ctrl+/)

New Query 1* x +

CyberSecuritySOC

Run Time range: Last 24 hours Save Copy link New alert rule Export Pin to dashboard Format query

```
14 | mv-expand total to typeof(double), TimeGenerated to typeof(datetime), anomalies to typeof(double), score to typeof(double),
15 | baseline to typeof(long)
16 | where anomalies > 0
17 | let TimeSeriesAlerts = TimeSeriesData
18 | extend (anomalies, score, baseline) = series_decompose_anomalies(Total, scorethreshold, -1, 'linefit')
19 | mv-expand Total to typeof(double), TimeGenerated to typeof(datetime), anomalies to typeof(double), score to typeof(double),
20 | baseline to typeof(long);
21 | TimeSeriesAlerts
22 | render timechart
```

Results Chart Display time (UTC+00:00)

Completed 00:00.7 264 records

Chart formatting

Home > Azure Sentinel workspaces > Azure Sentinel

Azure Sentinel | Workbooks

Selected workspace: 'cybersecuritysoc'

Search (Ctrl+/) << Refresh + Add workbook

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86
Templates

0
Updates

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SolarWinds Post Compromise Hunting
MICROSOFT

Syslog Workbook

Sysmon Threat Hunting
AZURE SENTINEL COMMUNITY

Teams Collaboration Graph

Threat Intelligence
MICROSOFT

TSGGuide1

User And Entity Behavior Analytics
MICROSOFT

Users Travel Map

Visualizations Demo

SolarWinds Post Compromise Hunting MICROSOFT

This hunting workbook is intended to help identify activity related to the Solarigate compromise and subsequent attacks discovered in December 2020

Required data types: ⓘ

- ✓ CommonSecurityLog
- ✓ SigninLogs
- ✓ AuditLogs
- ✓ AADServicePrincipalSignInLogs
- ✓ OfficeActivity
- ✓ BehaviorAnalytics
- ✓ SecurityEvent
- ✓ DeviceProcessEvents
- ✓ SecurityAlert
- ✓ DnsEvents

Relevant data connectors: ⓘ

AzureActiveDirectory
SecurityEvents
Office365
MicrosoftThreatProtection
DNS

SolarWinds Post Compromise Hunting ⓘ

Microsoft

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Microsoft

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Microsoft

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SolarWinds Post Compromise Hunting

cybersecuritysoc

Edit

Solorigate Post Compromise Hunting

This hunting workbook is intended to help identify activity related to the SolarWinds compromise and subsequent attacks discovered in December 2020. This activity is referred to as Solorigate and UNC2452. More details can be found in the following reports:

- <https://aka.ms/solorigate>
- <https://aka.ms/sentinel-solorigate-hunt>
- <https://techcommunity.microsoft.com/t5/azure-active-directory-identity/understanding-quot-solorigate-quot-s-identity-iocs-for-identity/ba-p/2007610>
- <https://www.microsoft.com/security/blog/2020/12/21/advice-for-incident-responders-on-recovery-from-systemic-identity-compromises/>
- <https://www.fireeye.com/blog/threat-research/2020/12/evasive-attacker-leverages-solarwinds-supply-chain-compromises-with-sunburst-backdoor.html>
- <https://www.fireeye.com/blog/products-and-services/2020/12/global-intrusion-campaign-leverages-software-supply-chain-compromise.html>
- <https://www.solarwinds.com/securityadvisory>
- <https://www.microsoft.com/security/blog/2021/01/20/deep-dive-into-the-solorigate-second-stage-activation-from-sunburst-to-teardrop-and-raindrop/>
- <https://www.fireeye.com/content/dam/collateral/en/wp-m-unc2452.pdf>

Suspicious Signins

Suspicious App Modifications

Suspicious Lateral Movement

Suspicious Host Activity

Suspicious Network Activity

Suspicious Signin Activity

Suspicious Signins

This section hunts for suspicious sign-in events within your Azure AD tenant. It takes TTPs reported by Microsoft, FireEye and the NSA to identify logon events from known VPS provider IP ranges where the only logons using SAML tokens provided by external identity providers, or refresh tokens have been used. This helps identify instances where an attacker is using SAML tokens minted by stolen ADFS key material to access your environment and bypass MFA. This hunting query may produce false positive if users are accessing services via VPN services.

Select a user session in the initial query to populate the further queries that provide context on the users other logon activity, this is to help distinguish legitimate logons from malicious ones.

Hunting Timeframe ⓘ : Last 30 days ▾

ⓘ

Set the timeframe you wish to hunt in using the dropdown to the right. Note that using a large timeframe may cause queries to timeout depending on the size of your environment. If you have difficulties try reducing your timeframe.

Successful User Signins from VPS providers where only Tokens were used to authenticate.

IPAddress

↑ ↓

UserPrincipalName

↑ ↓

StartTime

↑ ↓

EndTime

↑ ↓

Sử dụng Azure
Sentinel GitHub



Chuỗi video về Solorigate

Bước tiếp theo

- 01.** Xem chuỗi video về Solorigate tại vị trí này
- 02.** Truy nhập Microsoft Security để biết thêm thông tin cập nhật:
<https://www.microsoft.com/vi-vn/security/business>
- 03.** Đọc bài đăng blog trên:
www.microsoft.com/security/blog

<https://aka.ms/solorigate>

