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Hunting Malicious Windows Defender Activity

Posted on **March 4, 2020** by **Craig**



Recently I was demo-ing Azure Sentinel to a large organization, and someone asked me “what if an attacker manages to compromise my system and disabled Windows Defender”



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Malware protection...inside job or clever exploitation using a Phishing technique to download a payload??

I've wrote this blog to hopefully help you combat and protect yourself from this type of scenario.

Below are some basic pre reqs to be comfortable following this blog:

Pre Reqs & Assumptions:

- Azure Experience (essential)
- IT Security Experience (essential)
- Log Analytics (essential)
- Azure Sentinel (essential)
- A Physical Asset or Virtual Machine (essential)
- PowerShell (Not essential)

Firstly let's configure our Log Analytics workspace (which Sentinel reports too), this will collect all the data for what we're going to be querying on in relation to Windows Defender activity.

We're looking to collect data on any Anti-malware events from Microsoft Antimalware or Windows Defender.

Type "Microsoft-Windows-Windows Defender/Operational" – then tick Error, Warning & Information and click Save

Collect events from the following event logs

Enter the name of an event log to monitor

LOG NAME	ERROR	WARNING	INFORMATION	
Application	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	Remove
Microsoft-Windows-Windows Defender/Operational	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	Remove
System	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	Remove

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Let's jump over to our Sentinel Workspace, and Click Logs.

We can test that our Windows Defender is reporting by running a simple query which the EventID 1150 will report on the Endpoint Protection being in a healthy state.

Event

| where EventID == 1150

| order by TimeGenerated desc

Run	Time range : Last 24 hours	Copy link	New alert rule	Export	...
Event					
where EventID == 1150					
order by TimeGenerated desc					
Completed. Showing partial results from the last 24 hours.					
Table	Chart	Columns	Add bookmark	Display time (UTC+00:00)	Copy request
Drag a column header and drop it here to group by that column					
<input type="checkbox"/>	TimeGenerated (UTC)	<input type="checkbox"/>	Source	<input type="checkbox"/>	EventLog
EventLevelName Information					
ParameterXml <Param>%%827</Param> <Param>4.18.2001.7</Param> <Param></Param> <Param>1.1.16700.3</Pa					
EventData <DataItem type="System.XmlData" time="2020-02-18T10:19:16.6179412+00:00" sourceHealthService					
EventID 1150					
RenderedDescription Endpoint Protection client is up and running in a healthy state. Platform version: 4.18.2001.7					
EventCategory 0					

Now we need to write a query which will alert us if any configuration changes happen on Windows Defender.

#alwayscloud

#alwaysready

#alwaysthinking

armtemplates

Azure

azureautomation

azuredevops

azure move storage
account

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azure resource groups

azureresourcemanager

azurerm

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Powershell

Script

Scripting

sentinel



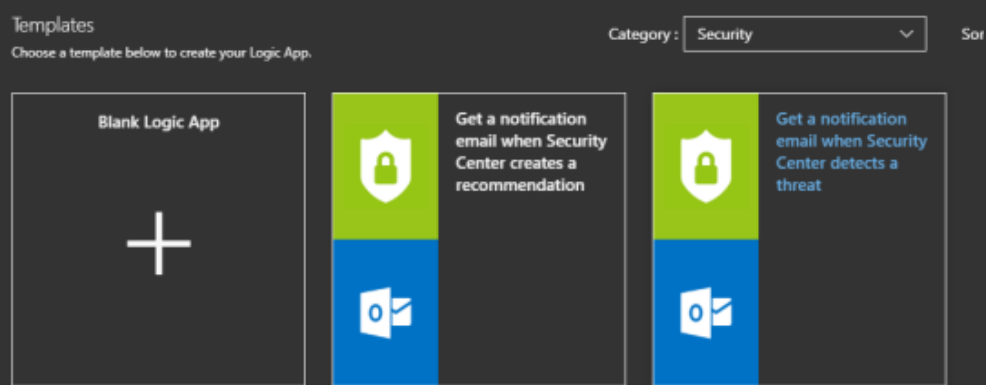
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defender has had some configuration changes.

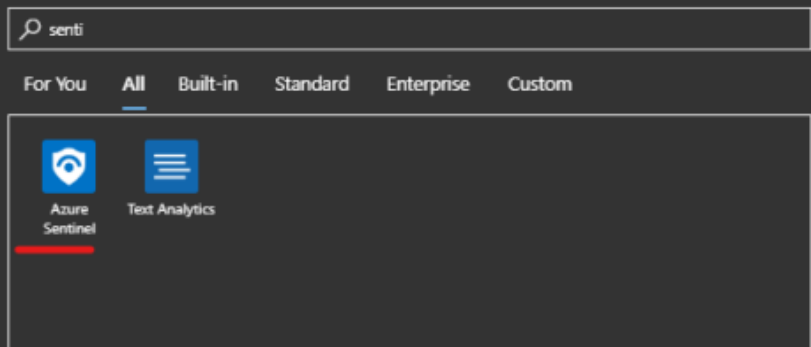
Let’s go to Playbook and click “Add Playbook” give your playbook a name and click create.

Select “Blank Logic App”



I’d like to receive and email when Sentinel picks up this alert.

Search “Sentinel” within the connections and triggers bar.



At the time of writing this there is only 1 Trigger for Sentinel.

- October 2024
- September 2024
- August 2024
- June 2024
- May 2024
- April 2024
- March 2024
- February 2024
- January 2024
- December 2023
- November 2023
- October 2023
- September 2023
- August 2023
- July 2023
- June 2023
- March 2023
- July 2022
- August 2021
- July 2021
- June 2021
- May 2021
- April 2021
- March 2021
- February 2021
- December 2020
- November 2020
- October 2020
- August 2020
- July 2020
- May 2020
- March 2020
- February 2020
- November 2019
- September 2019



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Triggers

Actions



When a response to an Azure Sentinel alert is triggered (preview)
Azure Sentinel



Make your connection to Sentinel



When a response to an Azure Sentinel alert is triggered (Preview) ...

No additional information is needed for this step. You will be able to use the outputs in subsequent steps.

Connected to live.com#crai

Change connection.

+ New step

Next click + New Step and search for YOUR email action, for me, I'll be using Outlook.com

Fill in the Body, Subject and To section with which ever information you'd like to be emailed once an alert is triggered.

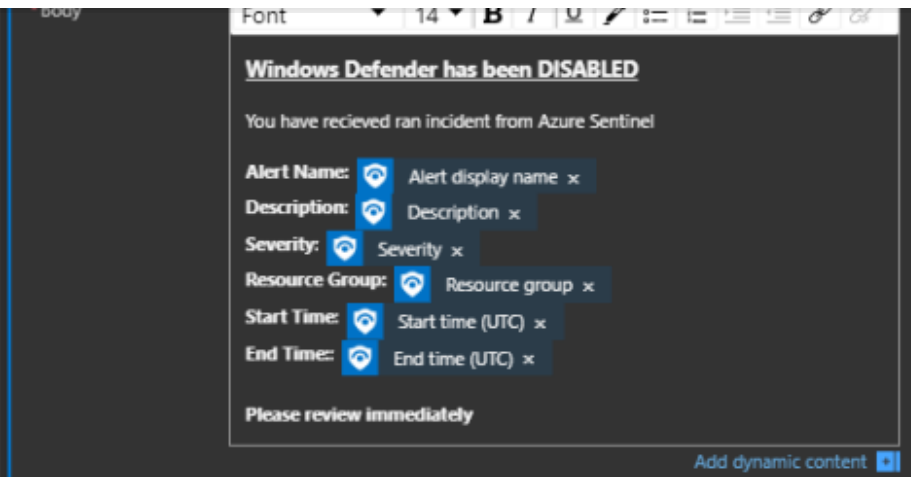
I've done some basic formatting inside the body of the email, so my email alert makes sense and is laid out nicely.

- February 2019
- January 2019
- November 2018
- August 2018
- June 2018
- May 2018
- April 2018
- March 2018
- December 2017
- October 2017
- September 2017
- July 2017
- June 2017
- April 2017
- February 2017
- November 2016
- October 2016
- September 2016
- August 2016
- July 2016
- June 2016
- March 2016
- January 2016
- December 2015
- November 2015
- October 2015
- September 2015
- July 2015
- May 2015



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Click Save, we can now attach our playbook to the security query, for us to be notified of this we need to create a Scheduled Analytic Query Rule.

Let's go to our Sentinel Dashboard and click "Analytics"



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Let's create a New Rule.



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Event ID: 5101

Symbolic name:

MALWAREPROTECTION__DISABLED__EXPIRED__STATE

Event ID: 5012

Symbolic name: MALWAREPROTECTION__ANTIVIRUS__DISABLED

Event ID: 5010

Symbolic name:

MALWAREPROTECTION__ANTISPYWARE__DISABLED

Event ID: 5001

Symbolic name: MALWAREPROTECTION__RTP__DISABLED

Realistically these ID's should never appear, if they do...you know something is wrong.

So once we've captured them Event ID's we need to enter these into our Rule Logic, this will be our query which is below.

Event

| where EventID in (5101, 5001, 5012, 5010)

| order by TimeGenerated desc



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For now I'll have the ability for alerts to trigger incidents, this way I get it displayed onto my dashboard screen.

Let's select are recently created Playbook above.

Next click review and create.



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Now let's get into the juicy stuff, below is a few lines of simple PowerShell that will disable Microsoft Windows Defender

NOTE please don't use this on a production VM or your own machine!!

Before that we can see that Defender has a green tick, all healthy and running nicely.

So let's execute the code below.



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```
Set-ExecutionPolicy Unrestricted -Force  
Set-MpPreference -DisableRealtimeMonitoring $true  
Set-MpPreference -DisableRemovableDriveScanning $true  
Set-MpPreference -PUAProtection 1  
New-ItemProperty -Path "HKLM:\SOFTWARE\Policies\Microsc
```

Now after running all that, you should see a bunch of Pops notifying you that defender isn't running and it should turn Red (or have a red X)



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Let's hop back to our Sentinel dashboard and check the situation out.

So we can see straight away that our Incident blade in Sentinel has captured the Analytic alert we've configured.

And after 1 or so minutes an email lands in my inbox.



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Coupling all of the above will help defend how you alert and respond too Malicious Defender Activity with Azure Sentinel.

#alwayssecurity #alwaysready #alwayscloud #alwaysazure

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