

Vectra Stream for Azure Sentinel AMA Configuration Guide

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<https://support.vectra.ai/s/article/KB-VS-1771>

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Introduction

Vectra AI Stream for Microsoft Azure Sentinel v1.0 utilizes Microsoft OMS (Log Analytics) agent to collect event data from Vectra and send it to log analytics workspace. This agent is scheduled for end-of-life August 31, 2024, and is replaced with the Azure Monitor Agent (AMA). This document explains how to configure Microsoft AMA to ingest Vectra network telemetry (aka metadata) into Microsoft Azure Sentinel Log Analytics.

Applicability

This document applies to environments where pre-existing deployments must migrate from OMS to AMA as well as for new deployments starting with AMA.

Architecture Summary

A data connector is deployed and configured to send Vectra metadata to log analytics. Once ingested into log analytics, Vectra metadata is stored into individual custom tables as JSON data per metadata type (there are currently 17 metadata types provided with Vectra Stream).

Impact on Existing (OMS) Deployments

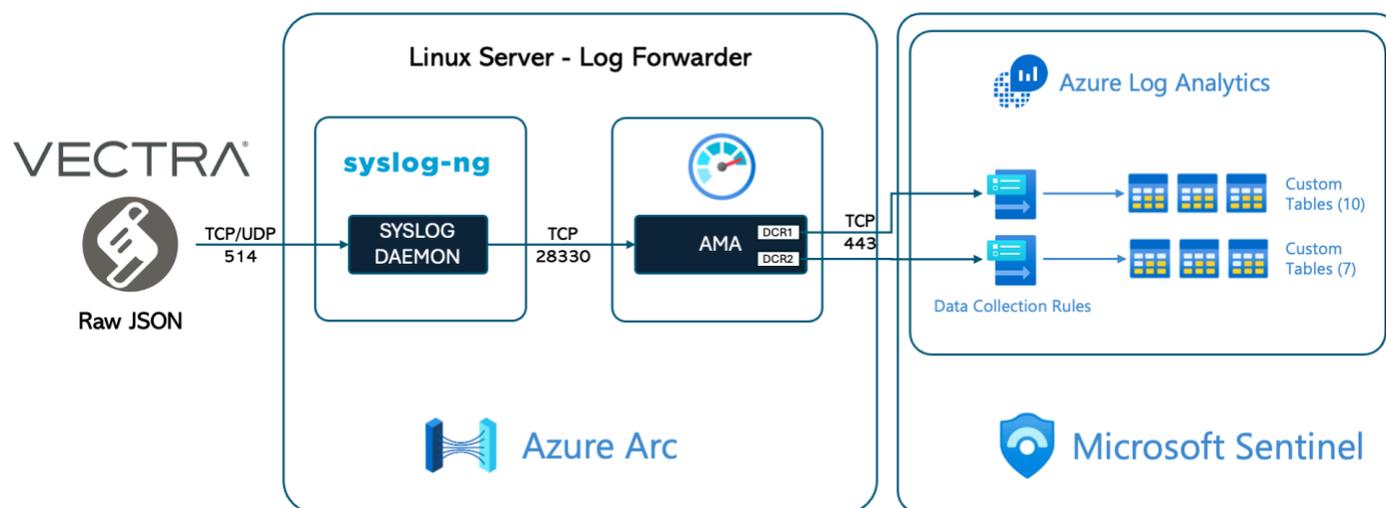
When migrating from OMS to AMA deployment model, please note that Vectra Stream metadata will be stored in multiple custom tables so data will stop being ingested into the single custom table VectraStream_CL when you stop the OMS agent.

Since all streams won't be loaded into that single custom table this means that existing Stream Workbooks and Queries will not function against the new tables. These will continue to function on the existing data until the data expires based on your retention policy.

Vectra is investigating adding a workbook and sample queries to operate on the new custom tables in the future.

Configuration Method: Syslog-NG

Using syslog-ng to filter the Vectra metadata streams (data flows) is required to enable all streams to be ingested into the same Sentinel workspace. This method uses syslog-ng to filter the incoming data streams and spread them across two outputs so that each output can use a different Data Collection Rule thus allowing all Stream metadata to be sent to the same receiver.



Prepare Linux Server

Microsoft Azure Monitor Agent (AMA) operates on an Azure Arc enabled Linux server. For this integration, Vectra sends the Stream data in raw JSON data and AMA requires a receiver. Since Vectra provides multiple metadata types and a Data Collection Rule only supports up to 10 data flows, a syslog-ng receiver running on the Linux server will be required.

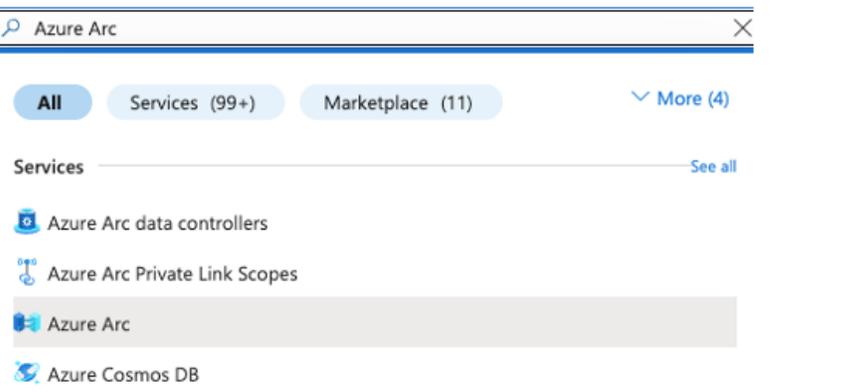
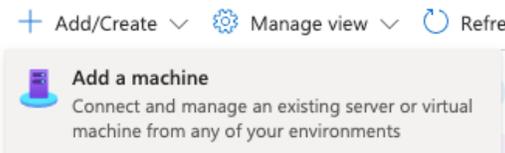
This documentation was validated on an Azure Arc enabled Linux server running Ubuntu 22.04. The default syslog configuration for Ubuntu 22.04 is rsyslog so the following steps were taken to make syslog-ng the primary syslog receiver after connecting to the server using SSH.

<p>The commands to the right remove rsyslog</p> <pre># stop rsyslog # remove the rsyslog package # clean up left over configuration files # verify that rsyslog has been removed</pre>	<pre>sudo systemctl stop rsyslog sudo apt remove --purge rsyslog sudo apt purge --auto-remove rsyslog sudo dpkg -l grep rsyslog</pre>
<p>The commands to the right installs syslog-ng</p> <pre># update package lists # install syslog-ng # enable syslog-ng # start syslog-ng # verify syslog-ng is running</pre>	<pre>sudo apt update sudo apt install syslog-ng sudo systemctl enable syslog-ng sudo systemctl start syslog-ng sudo systemctl status syslog-ng</pre>

Install Arc Agent

The Linux log server that will be used to run AMA must be connected to Azure via the Arc machine agent.

If the machine is already connected to Azure using Azure Arc, this section can be skipped.

<p>Access the Azure Portal</p>	
<p>Search resources for Azure Arc</p> <p>Select Azure Arc from the list</p>	
<p>Select Machines from left-hand window</p>	
<p>From Add/Create drop-down menu select Add a machine</p>	

Select Generate script from Add a single server

Add a single server

This option will generate a script to run on your target server. The script will prompt you for your Azure login, so this option is best for adding servers one at a time.

[Generate script](#) [Learn more](#)

Enter appropriate Project details

Add a server with Azure Arc

Basics Tags Download and run script

Complete the fields below to connect servers on-premise and in other clouds to be managed and governed in Azure. [Learn more](#)

Project details

Select the subscription and resource group where you want the server to be managed within Azure.

Subscription *

Resource group * [Create new](#)

Enter Server details

Server details

Select details for the servers that you want to add. An agent package will be generated for the selected server type.

Region *

Operating system *

Select Connectivity method

Connectivity method

Choose how the connected machine agent running in the server should connect to the Internet. This setting only applies to the Arc agent. Proxy settings for extensions are configured separately.

Connectivity method *

Public endpoint

Proxy server

Select Download and run script

[Previous](#) [Next](#) [Download and run script](#)

Download or copy the script code

```

1
2 export subscriptionId="b3fe75ab-94a2-4322-84af-016eb01ff43e";
3 export resourceGroup="demolab-westus2";
4 export tenantId="aa5e9515-d44c-43ba-983c-878a1310bba7";
5 export location="westus2";
6 export authType="token";
7 export correlationId="579e8b64-b9d7-4674-9268-13ad52ab9e42";
8 export cloud="AzureCloud";
9
10
11 # Download the installation package
12 output=$(wget https://aka.ms/azcnagent -O ~/install_linux_azcnagent.sh 2>&1);
13 if [ $? != 0 ]; then wget -qO- --method=PUT --body-data="{\"subscriptionId\": \"${subscriptionId}\",
14   \"resourceGroup\": \"${resourceGroup}\", \"tenantId\": \"${tenantId}\", \"location\": \"${location}\",
15   \"correlationId\": \"${correlationId}\", \"authType\": \"${authType}\", \"operation\": \"onboarding\",
16   \"messageType\": \"DownloadScriptFailed\", \"message\": \"${output}\"}" https://gbl.his.arc.azure.com/log && /dev/null || true; fi;
17 echo "$output";
18
19 # Install the hybrid agent
20 bash ~/install_linux_azcnagent.sh;
21
22 # Run connect command
23 sudo azcnagent connect --resource-group "$resourceGroup" --tenant-id "$tenantId" --location
24 "$location" --subscription-id "$subscriptionId" --cloud "$cloud" --correlation-id
25 "$correlationId";

```

[Download](#)

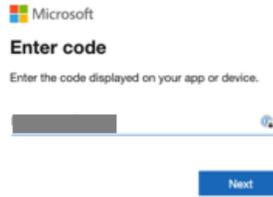
Connect to your Linux server and upload the script and then run it

```
vectra@ama-demo-doc: ~
vectra@ama-demo-doc:~$ ls
OnboardingScript.sh
vectra@ama-demo-doc:~$ bash OnboardingScript.sh
```

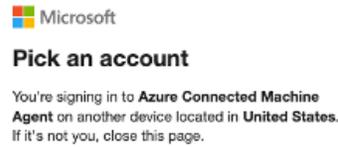
When prompted, navigate to the URL provided and enter the code to authenticate

```
Latest version of azcmagent is installed.
INFO Connecting machine to Azure... This might take a few minutes.
INFO Testing connectivity to endpoints that are needed to connect to Azure... This might take a few minutes.
To sign in, use a web browser to open the page https://microsoft.com/deviceLogin and enter the code [REDACTED] to authenticate.
```

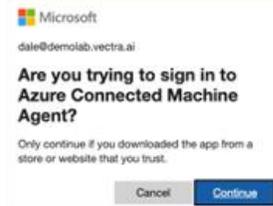
Enter the code



Select the account to authorize the agent with



Authorize the agent



Refresh the machines list and verify machine is present

[+ Add/Create](#) | [Manage view](#) | [Refresh](#) | [Export to CSV](#) | [Open query](#) | [Assign tags](#)

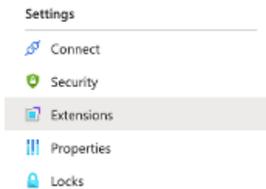
Filter for any field... | [Subscription equals all](#) | [Resource group equals all](#) | [Location equals all](#) | [Add filter](#)

Have Windows Server 2012 machines? Keep machines reaching the end of their support lifecycle protected by enabling Extended Security Updates (ESUs) through Azure Arc. Go to Extended Security Updates page in Azure Arc to get started.

Showing 1 to 5 of 5 records. No grouping List view

Name	Kind	Arc agent status	Resource group	Subscription	Operating system	Defender extensi...	Monitoring exten...	Update status
ama-demo-doc		Connected	demolab-westus2	demolab.vectra.ai	Ubuntu 22.04.2 LTS	Not enabled	Not installed	Enable periodic assess...

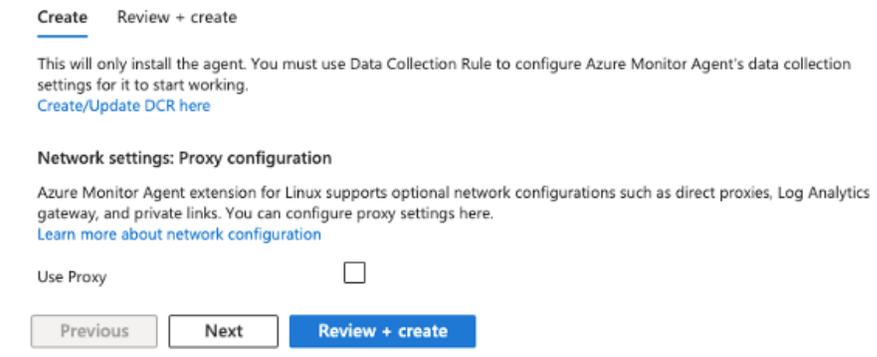
Select the machine and then select Extensions from the left-hand menu



Select Add then select Azure Monitor Agent for Linux and click Next



Select Review + create And then Create



Deployment will start ... Deployment is in progress

Wait several minutes for deployment to complete ✔ Your deployment is complete

Navigate back to Azure Arc - Machines



Verify Arc agent status is Connected, and the Monitoring Extension is installed

<input type="checkbox"/> Name ↑↓	Arc agent status ↑↓	Monitoring extension ↑↓
<input checked="" type="checkbox"/> ama-demo-doc	Connected	Installed

Modify Syslog-NG Configuration

Since a data collection rule can't have more than ten output flows, we need to direct the traffic to two different data collections by using syslog-ng.

Download the syslog-ng configuration file

Step 1. Modify the syslog-ng configuration

Note: A DCR cannot have more than 10 output flows. As we have 16 custom tables in this solution, we need to split the traffic to two DCR using syslog-ng.

1. Download the modified syslog-ng configuration file [azuremonitoragent-tcp.conf](#).
2. Log into the instance where syslog-ng/AMA is running.
3. Browse to /etc/syslog-ng/conf.d/ and replace the content of azuremonitoragent-tcp.conf file with the one that you just downloaded.
4. Save and restart syslog-ng (systemctl restart syslog-ng).

SSH into your Azure ARC enabled Linux server running AMA and edit /etc/syslog-ng/conf.d/azuremonitoragent-tcp.conf

```
stream:/etc/syslog-ng/conf.d$ vi azuremonitoragent-tcp.conf
```

Replace the contents of the conf file with the contents from the downloaded file and save the file

```
# Azure MSDI configuration: syslog forwarding config for msd agent
options {}

#filter
filter f_regex_match {
    match("metadata_smb(ftp)" value("MESSAGE"))
    or match("metadata_amb(mapping)" value("MESSAGE"))
    or match("metadata_radius" value("MESSAGE"))
    or match("metadata_sntp" value("MESSAGE"))
    or match("metadata_dhcp" value("MESSAGE"))
    or match("metadata_bacon" value("MESSAGE"))
    or match("metadata_rdp" value("MESSAGE"));
};

#rewrite to Facility: Local0 and Severity: Notice
rewrite r_change_facility_and_severity {
    set-pril("135");
};

# during install line, we detect if s_src exist, if it does then we
# replace it by appropriate source name like in redhat "s_sys"
# Forwarding using top
destination d_azure_msd {
    network("192.0.0.1"
    socktype("tcp"))
};
```

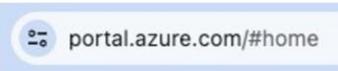
Restart syslog-ng

```
stream:/etc/syslog-ng/conf.d$ sudo systemctl restart syslog-ng
```

Deploy Vectra Stream App

The Vectra Stream app is required to be installed into the Sentinel workspace where the Vectra Stream metadata should reside. This app must be installed even if there is an existing integration using OMS.

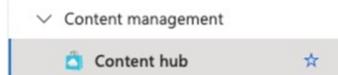
Access the Azure Portal



Search resources for Sentinel



Select Microsoft Sentinel from the list then enter your workspace



Under Content management, navigate to Content Hub

Search for Vectra AI Stream and install it



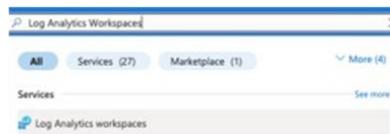
Select Deploy to Azure and follow the on-screen instructions



Verify Custom Tables

After the Vectra Stream for Azure Sentinel connector is deployed, the custom tables that are used to host the Stream metadata should all be created.

From the Azure Portal search bar search for and access Log Analytics workspaces



Select the log space you are installing Stream to then select Settings - Tables



Filter by string 'vectra' and verify that 17 tables are present



Install Syslog via AMA Data Connector

The data connector is responsible for controlling how data is shipped from AMA to the Log Analytics Workspace. Vectra Stream data is provided in syslog JSON format and is stored in custom tables, so that means a syslog connector is required.

Access the Azure Portal

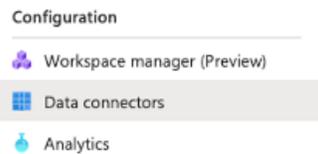


Search resources for Sentinel



Select Microsoft Sentinel from the list then enter your workspace

Select Data connectors from under the Configuration menu



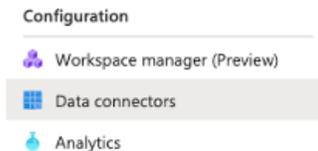
Go to content hub to install a connector on demand



Search for Syslog and select the one from Microsoft with category IT Operations



Return to the Data connectors page



Refresh the page and select Syslog via AMA and then Open connector page



Verify that there are no existing Data Collection Rules in place and create a new data collection



Create Data Collection Rule 1

Create the first data collection rule that will be further customized before deploying to the AMA server.

Create the 1st new data collection rule

+Create data collection rule

Provide a meaningful name for the 1st DCR and use appropriate subscription and resource group and



Select the required Azure Arc enabled resource from the resources tab



DCR1 requires just LOG_USER set to LOG_NOTICE for collection



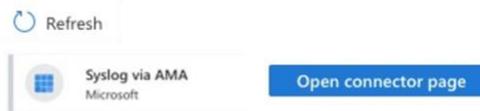
Review + Create and then Create the 1st DCR

< Previous Next: Review + create >

Create Data Collection Rule 2

Create the second data collection rule that will be further customized before deploying to the AMA server.

Go back into Syslog via AMA connector to create DCR2



Provide a meaningful name for the 2nd DCR and use appropriate subscription and resource group and



Select the required Azure Arc enabled resource from the resources tab



DCR2 requires just LOG_LOCAL0 set to LOG_NOTICE for collection

Basic Resources Collect Review + create

Select which data source type and the data to collect for your resource(s).

LOG_LOCAL0 LOG_NOTICE

Review + Create and then Create the 2nd DCR

< Previous
Next: Review + create >

Verify Data Collection Rules

Next, verify that both data collection rules have been created and the event filter type looks accurate.

Verify the rules exist by going back into the data connector and hitting refresh

Refresh

Rule name	Event filter type
dog-stream-ama-dcr1	log_user : LOG_NOTICE, log_nopri : LOG_EMERG ✎ 🗑
dog-stream-ama-dcr2	log_local0 : LOG_NOTICE, log_nopri : LOG_EME... ✎ 🗑

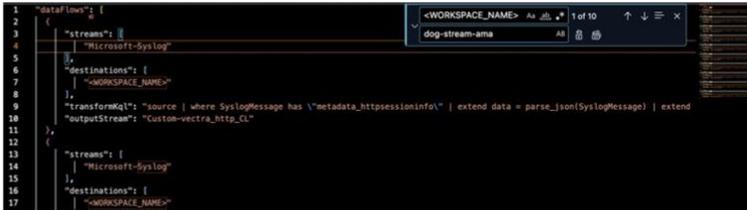
Modify Stream JSON File

We need to prepare the json file that will be used in the data collection rule to use the desired Sentinel Workspace. There are two stream json files (one per DCR) that will need to be modified, but proceed with one at a time and revisit these instructions when it's time to work on the second DCR.

Download 'Stream_DataFlows_dcr1.json' from the content hub link

3. Download the dataFlows configuration for LOG_USER DCR: [Stream_DataFlows_dcr1.json](#) and find/replace the destination placeholder'

Open the file in an editor and use search/replace to replace all ten instances of <WORKSPACE_NAME> with the name of your Sentinel Workspace and SAVE the file



Select the entire contents of the file and copy the entire contents into your clipboard as it will be needed during the next section



Copy

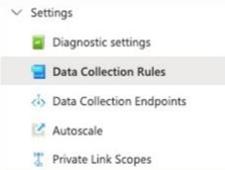
Customize Data Collection Rule 1

We need to modify our first data collection rule to send each data flow (flows 1-10) to the correct custom table based on its metadata type. This is accomplished by replacing the default dataFlows stanza of the DCR with the content just prepared.

Within your Azure Portal search for monitor and select the Monitor service



Navigate to Settings – Data Collection Rules



Click on the name of your first DCR so that you can work on it

Navigate to Automation – Export Template and then click Deploy



We need to edit the template to make our changes before deploying it



Locate the "dataFlows" stanza that should start on or around row 67.

Highlight the stanza as shown (be cautious to start at "dataFlows" row and end at the closing].

Paste the data from your clipboard to overwrite this stanza.



When you paste the clipboard data in, the formatting may look strange, but it will be formatted properly once saved.

```

67 "dataFlows": [
68   {
69     "streams": [
70       "Microsoft-Syslog"
71     ],
72     "destinations": [
73       "dog-stream-ama"
74     ],
75     "transformKql": "source | where SyslogMessage has `metadat
tostring(data.referrer), user_agent = tostring(data.user_agent),
response_content_disposition), request_header_count = tolong(data
response_expires), orig_hostname = tostring(data.orig_hostname),
76     "outputStream": "Custom-vectra_http_CL"
77   },
78   {
79     "streams": [
80       "Microsoft-Syslog"
81     ],
82     "destinations": [
83       "dog-stream-ama"
84     ],
85     "transformKql": "source | where SyslogMessage has `metadat
resp_hostname), orig_huid = tostring(data.orig_huid), resp_huid =
client_subject), client_curve_num = data.client_curve_num, client
sensor_uid = tostring(data.sensor_uid)",
86     "outputStream": "Custom-vectra_ssl_CL"

```

In the same template, locate the destinations block that has the LogAnalytics name "DataCollectionEvent"

```

"destinations": {
  "logAnalytics": [
    {
      "workspaceResourceId": "[parameters('workspaces_dog_stream_ama_externalid')]",
      "name": "DataCollectionEvent"
    }
  ]
}

```

Replace DataCollectionEvent with the same name used previously when modifying your workspace name in 'Stream_DataFlows_dcr1.json'

```

"destinations": {
  "logAnalytics": [
    {
      "workspaceResourceId": "[parameters('workspaces_dog_stream_ama_externalid')]",
      "name": "dog-stream-ama"
    }
  ]
}

```

Select Save, then Review + create, then Create to deploy the edited template



Modify and Customize DCR2

We need to modify our second data collection rule to send each data flow (flows 11-17) to the correct custom table based on its metadata type. Repeat the documented steps above (Modify Stream_DataFlows_dcr1 JSON File and Customize Data Collection Rule 2) using data collection rule 2 data. The summary of the configuration is provided here:

- ▼ Download Stream_DataFlows_dcr2.json and edit it.
- ▼ Replace all seven instances of <WORKSPACE_NAME> with your Sentinel Workspace name and copy the updated contents to your clipboard.
- ▼ Open Azure Monitor and navigate to Settings – Data Collection Rules and find your second DCR.
- ▼ Navigate to Automation – Export Template and then select Deploy and Edit template.
- ▼ Replace the DataFlows stanza starting around line 67 with the content in your clipboard.
- ▼ Replace the string "DataCollectionEvent" with your Sentinel Workspace name.
- ▼ Save, Review + create, then Create.

Deploy Data Collection Rules

To deploy the customized data collections rules, SSH into your Azure ARC enabled Linux server that is running AMA and run the following command:

```
sudo wget -O Forwarder_AMA_installer.py https://raw.githubusercontent.com/Azure/Azure-Sentinel/master/DataConnectors/Syslog/Forwarder_AMA_installer.py&&sudo python3 Forwarder_AMA_installer.py
```

Configure Vectra

The Vectra platform must be configured to send the Stream data to the AMA Linux server. Connect to your Vectra user interface to complete this configuration.

If this is an existing OMS deployment, then the configuration must be updated to point to the AMA Linux server configured above.

Additional details for deploying Vectra Stream are available in the following knowledge base article.

<https://support.vectra.ai/s/article/KB-VS-1189>

Configure Vectra > Settings – Stream to send Raw JSON over TCP to your Azure Arc enabled Linux AMA server



Validation

Everything should be configured at this point and should be validated to ensure data is being ingested properly.

- ▼ Connect to your AMA Linux server over ssh and then tail your syslog file to make sure data is coming in.

```
tail -f /var/log/syslog
```

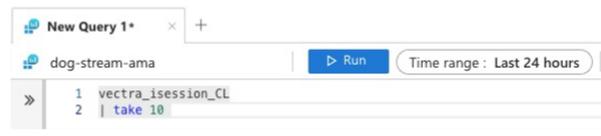
IMPORTANT: It can take 20 minutes for the initial data to make it into the system and then approximately every five minutes afterwards so please be patient.

- ▼ Navigate back to your Sentinel instance to continue validation.

Within Sentinel, navigate to the Logs page



Run this KQL and verify that there are records in that table



Congratulations! Vectra data is now being ingested into Microsoft Sentinel using the Azure Monitoring Agent.

Disable OMS Agent

For existing deployments, the OMS agent should be disabled to prevent duplicate data from being ingested into the Sentinel workspace.

- ▼ Connect to your OMS Linux server using ssh and disable the agent.
`sudo /opt/microsoft/omsagent/bin/service_control disable`
- ▼ Refer to Microsoft documentation for complete instructions for removing the OMS agent. The following link includes a section on removing the agent.
<https://learn.microsoft.com/en-us/troubleshoot/azure/automation/reinstall-oms-agent-linux>
- ▼ While it is safe to delete the existing Vectra AI Detect data connector if you do so you will need to reinstall the Vectra workbook. Please refer to the instructions earlier in this document.