Microsoft

Microsoft Ignite

Microsoft

Modernize your SIEM in the cloud with Azure Sentinel

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https://aka.ms/abbas

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Global Blackbelt – Azure Sentinel
Microsoft Asia

SEC105

Expanding digital estate

Vehicles

Smart cities

Sensors

Energy systems

Marketplaces

Equipment

Partners

Customers

Citizens

Supply chains

On-premises

Manufacturers

Mobile devices

Security operations challenges

76%
report increasing security data*

Sophistication of threats

IT deployment & maintenance

44%
of alerts are never investigated

Too many disconnected products

3.5M
unfilled security jobs in 2021

Lack of automation

*ESG: Security Analytics and Operations: Industry Trends in the Era of Cloud Computing 2019

Introducing Azure Sentinel

INTELLIGENT, CLOUD-NATIVE SIEM

Delivers instant value to your defenders

Introducing Azure Sentinel

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Delivers instant value to your defenders

Scales to support your growing digital estate

Introducing Azure Sentinel

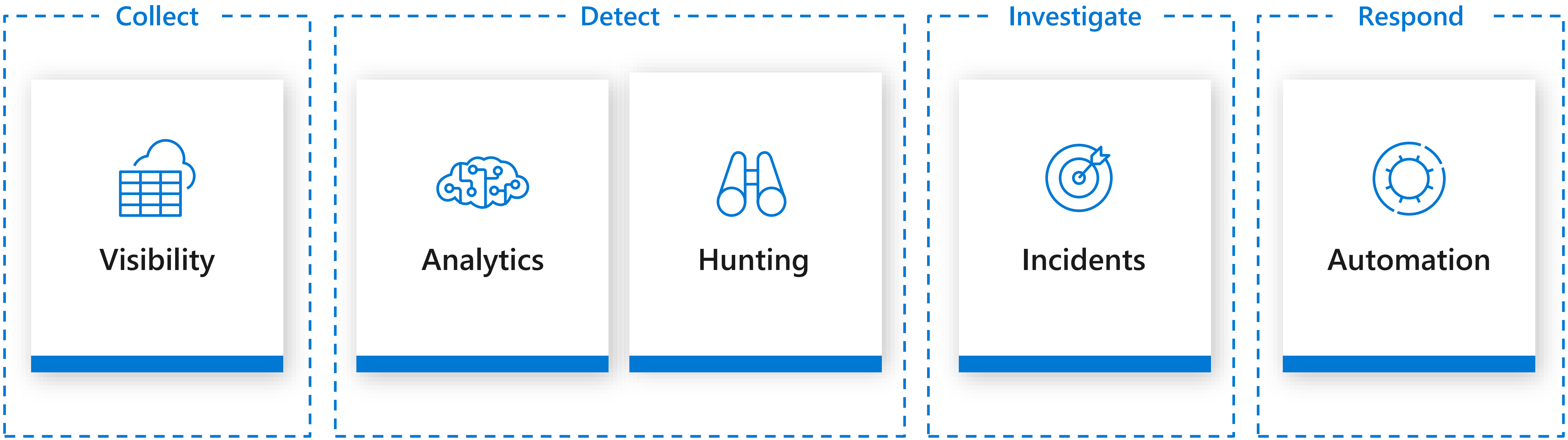
INTELLIGENT, CLOUD-NATIVE SIEM

Delivers instant value to your defenders

Scales to support your growing digital estate

Uses AI and automation to improve effectiveness

End-to-end solution for security operations



Collect

Visibility

Detect

Analytics

Hunting

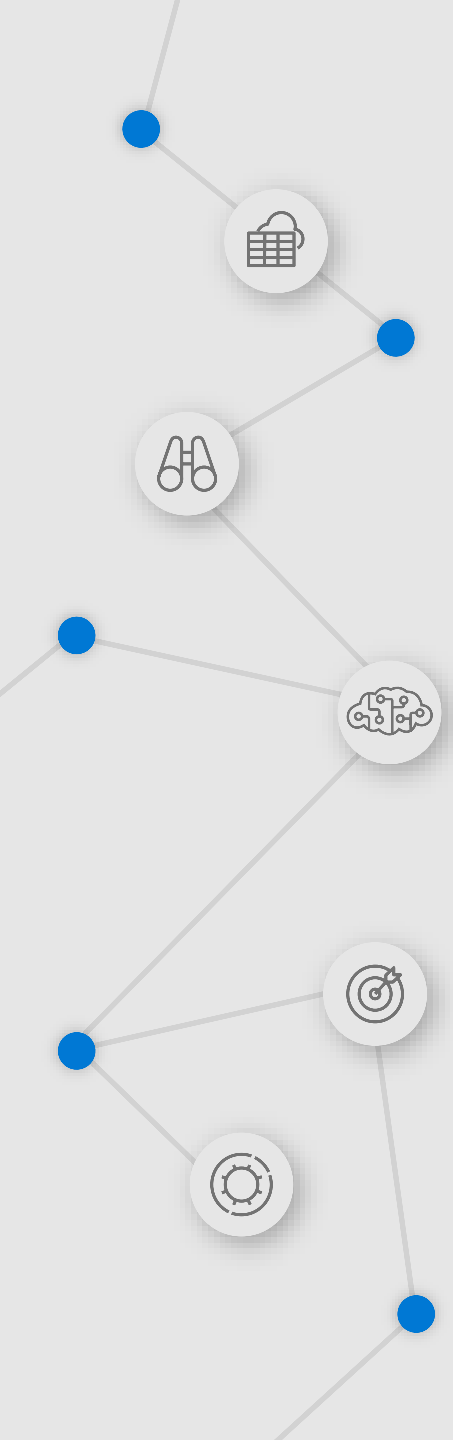
Investigate

Incidents

Respond

Automation

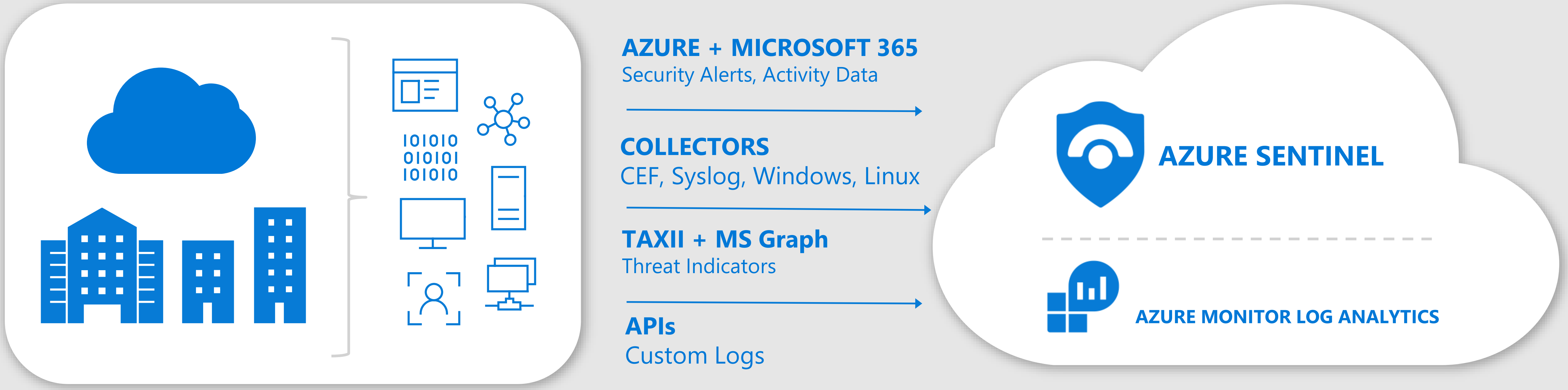
Powered by community + backed by Microsoft's security experts



10 steps to Modernize your SIEM

Visibility

1 Collect security data at cloud scale from any source



AZURE + MICROSOFT 365
Security Alerts, Activity Data

COLLECTORS
CEF, Syslog, Windows, Linux

TAXII + MS Graph
Threat Indicators

APIs
Custom Logs

AZURE SENTINEL

AZURE MONITOR LOG ANALYTICS

2

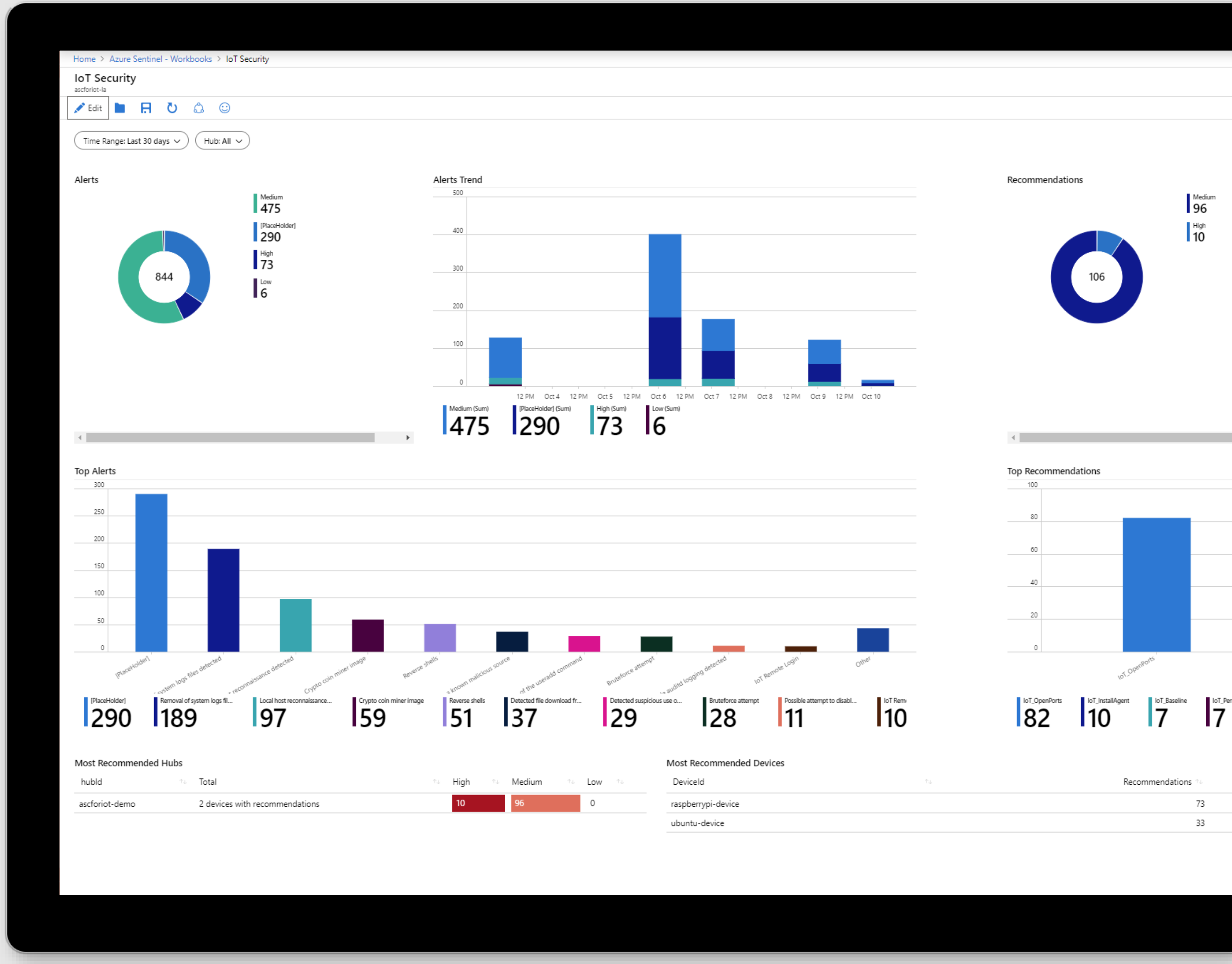
Use workbooks to power interactive dashboards

Choose from a gallery of workbooks

Customize or create your own workbooks using queries

Take advantage of rich visualization options

Gain insight into one or more data sources



Most Recommended Hubs

hubId	Total	High	Medium	Low
ascforiot-demo	2 devices with recommendations	10	96	0

Most Recommended Devices

DeviceId	Recommendations
raspberrypi-device	73
ubuntu-device	33

New data connectors and workbooks announced this week

Barracuda CloudGen Firewall

Citrix Analytics

ExtraHop Reveal(x)

F5 Firewall

One Identity Safeguard

TrendMicro Deep Security

Zscaler Internet Access

Threat Intelligence TAXII Servers (supporting STIX format)

DEMO

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What data can you ingest in Azure Sentinel at no cost?

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Azure Activity Logs, Office 365 Activity Logs, Alerts from Microsoft Threat Protection are available at no cost.

Analytics

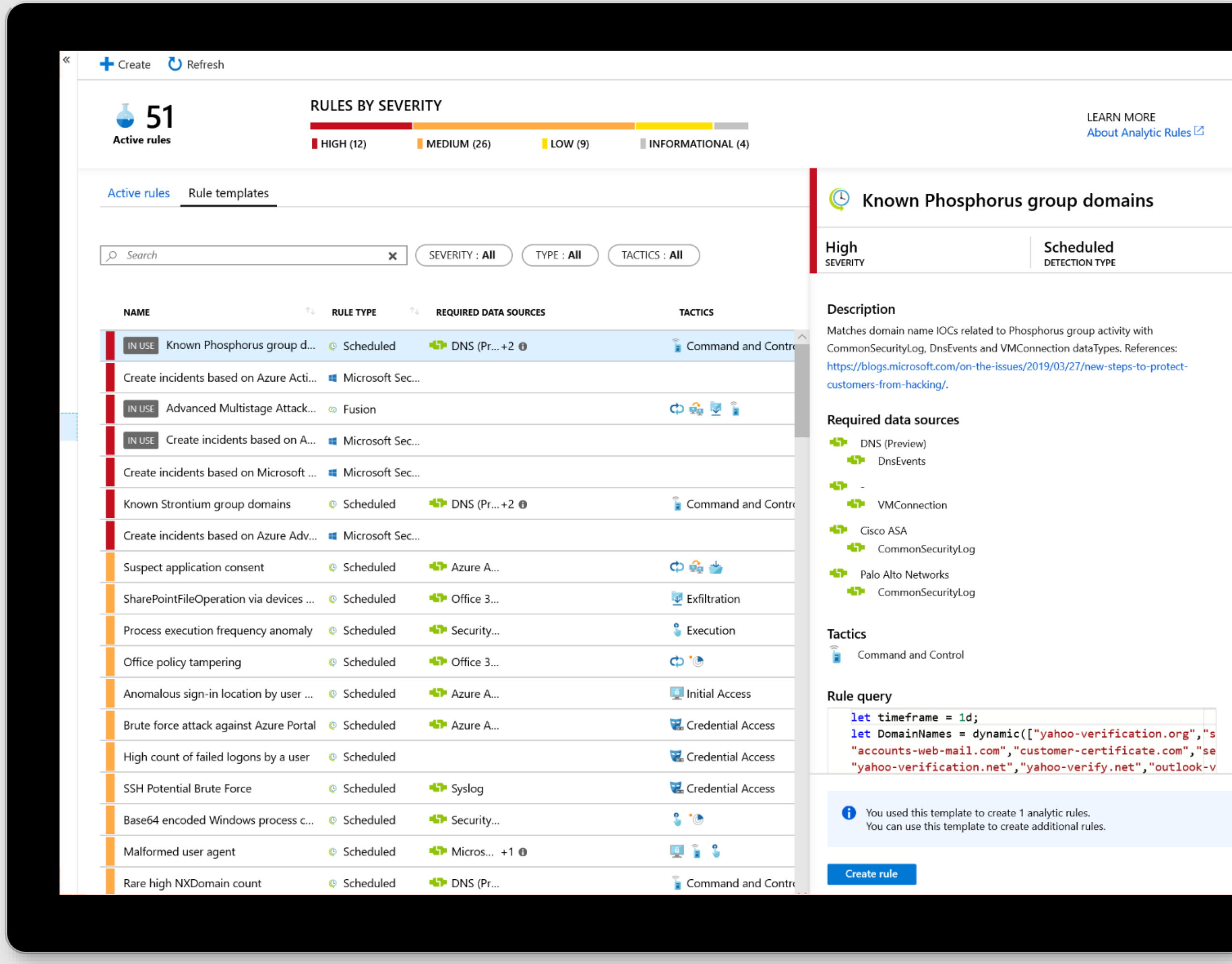
3 Leverage analytics to detect threats

Choose from more than 100 built-in analytics rules

Customize and create your own rules using KQL queries

Correlate events with your threat intelligence and now with Microsoft URL intelligence

Trigger automated playbooks



51
Active rules

RULES BY SEVERITY

HIGH (12) MEDIUM (26) LOW (9) INFORMATIONAL (4)

LEARN MORE
About Analytic Rules

NAME	RULE TYPE	REQUIRED DATA SOURCES	TACTICS
IN USE Known Phosphorus group d...	Scheduled	DNS (Pr... +2	Command and Contr
Create incidents based on Azure Acti...	Microsoft Sec...		
IN USE Advanced Multistage Attack...	Fusion		
IN USE Create incidents based on A...	Microsoft Sec...		
Create incidents based on Microsoft ...	Microsoft Sec...		
Known Strontium group domains	Scheduled	DNS (Pr... +2	Command and Contr
Create incidents based on Azure Adv...	Microsoft Sec...		
Suspect application consent	Scheduled	Azure A...	
SharePointFileOperation via devices ...	Scheduled	Office 3...	Exfiltration
Process execution frequency anomaly	Scheduled	Security...	Execution
Office policy tampering	Scheduled	Office 3...	
Anomalous sign-in location by user ...	Scheduled	Azure A...	Initial Access
Brute force attack against Azure Portal	Scheduled	Azure A...	Credential Access
High count of failed logons by a user	Scheduled		Credential Access
SSH Potential Brute Force	Scheduled	Syslog	Credential Access
Base64 encoded Windows process c...	Scheduled	Security...	
Malformed user agent	Scheduled	Micros... +1	
Rare high NXDomain count	Scheduled	DNS (Pr...	Command and Contr

Known Phosphorus group domains

High
SEVERITY

Scheduled
DETECTION TYPE

Description

Matches domain name IOCs related to Phosphorus group activity with CommonSecurityLog, DnsEvents and VMConnection dataTypes. References: https://blogs.microsoft.com/on-the-issues/2019/03/27/new-steps-to-protect-customers-from-hacking/.

Required data sources

- DNS (Preview)
  - DnsEvents
- -
  - VMConnection
- Cisco ASA
  - CommonSecurityLog
- Palo Alto Networks
  - CommonSecurityLog

Tactics

Command and Control

Rule query

```
let timeframe = 1d;
let DomainNames = dynamic(["yahoo-verification.org","s
"accounts-web-mail.com","customer-certificate.com","se
"yahoo-verification.net","yahoo-verify.net","outlook-v
```

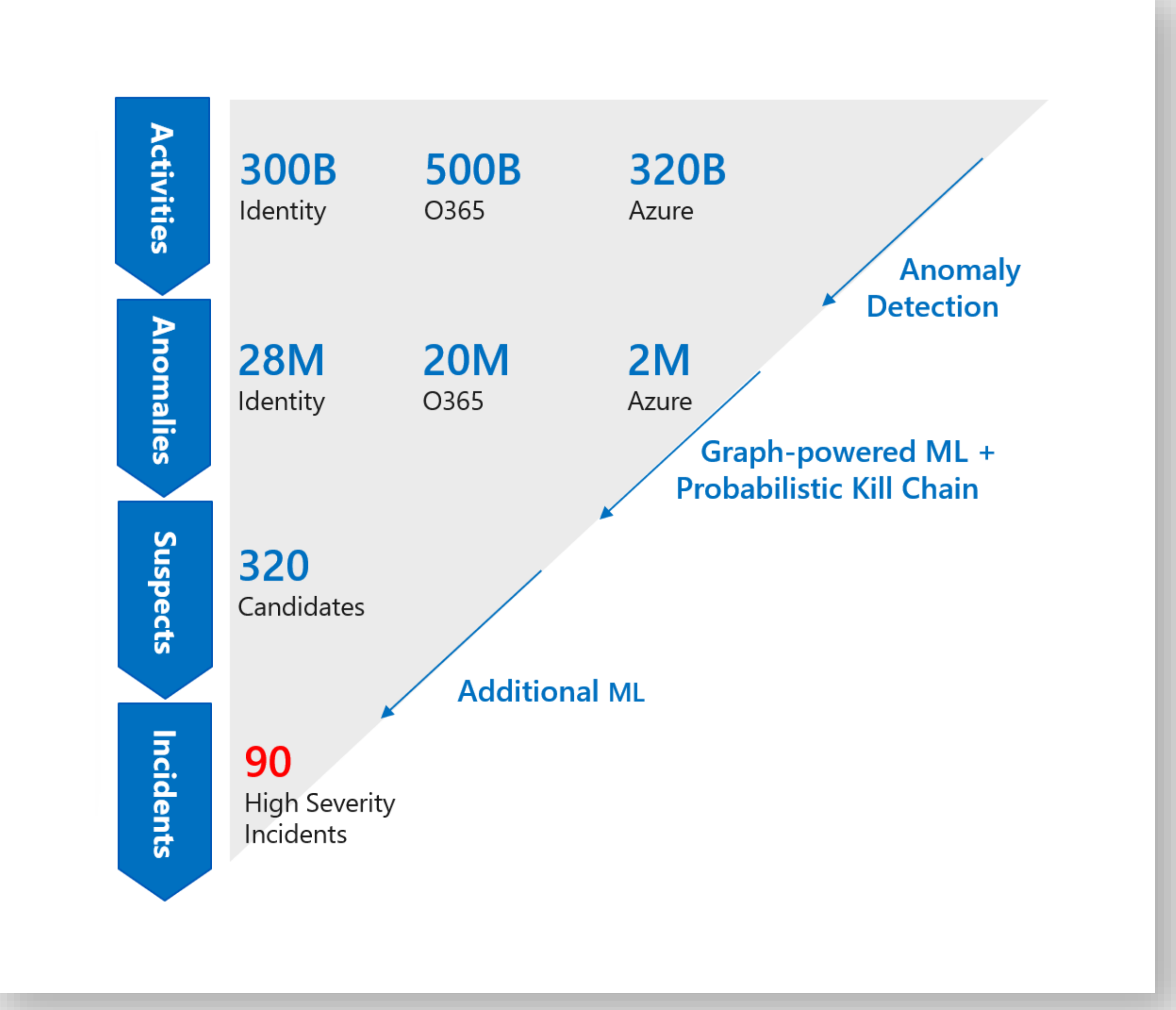
You used this template to create 1 analytic rules.
You can use this template to create additional rules.

3a Tap into the power of ML increase your catch rate without increasing noise

Use built–in models – no ML experience required

- Detects anomalies using transferred learning
- Fuses data sources to detect threats that span the kill chain
- Simply connect your data and learning begins

Bring your own ML models (coming soon)



DEMO

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?

The Microsoft Threat Intelligence Center names activity groups after

________________.

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Elements of the period table are used to name activity groups.

A recent blog post, highlighted activity by ‘Phosphorous’ to target users relate to the US presidential campaign.

Hunting

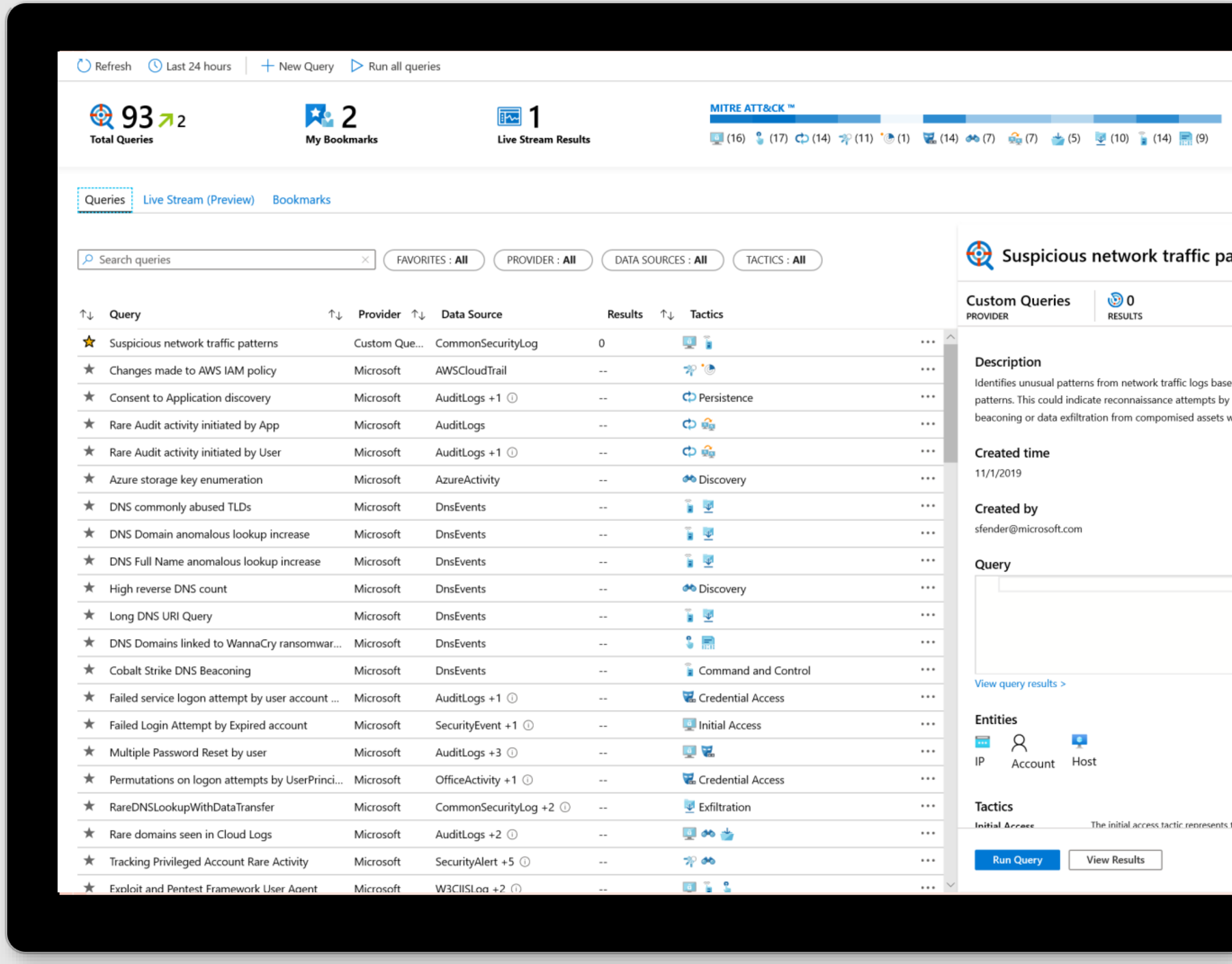
4

Start hunting over security data with fast, flexible queries

Run built-in threat hunting queries - no prior query experience required

Customize and create your own hunting queries using KQL

Integrate hunting and investigations



93 ↗2 Total Queries

2 My Bookmarks

1 Live Stream Results

	Query	Provider	Data Source	Results	Tactics
☆	Suspicious network traffic patterns	Custom Que...	CommonSecurityLog	0	
★	Changes made to AWS IAM policy	Microsoft	AWSCloudTrail	--	
★	Consent to Application discovery	Microsoft	AuditLogs +1 ⓘ	--	Persistence
★	Rare Audit activity initiated by App	Microsoft	AuditLogs	--	
★	Rare Audit activity initiated by User	Microsoft	AuditLogs +1 ⓘ	--	
★	Azure storage key enumeration	Microsoft	AzureActivity	--	Discovery
★	DNS commonly abused TLDs	Microsoft	DnsEvents	--	
★	DNS Domain anomalous lookup increase	Microsoft	DnsEvents	--	
★	DNS Full Name anomalous lookup increase	Microsoft	DnsEvents	--	
★	High reverse DNS count	Microsoft	DnsEvents	--	Discovery
★	Long DNS URI Query	Microsoft	DnsEvents	--	
★	DNS Domains linked to WannaCry ransomwar...	Microsoft	DnsEvents	--	
★	Cobalt Strike DNS Beaconing	Microsoft	DnsEvents	--	Command and Control
★	Failed service logon attempt by user account ...	Microsoft	AuditLogs +1 ⓘ	--	Credential Access
★	Failed Login Attempt by Expired account	Microsoft	SecurityEvent +1 ⓘ	--	Initial Access
★	Multiple Password Reset by user	Microsoft	AuditLogs +3 ⓘ	--	
★	Permutations on logon attempts by UserPrinci...	Microsoft	OfficeActivity +1 ⓘ	--	Credential Access
★	RareDNSLookupWithDataTransfer	Microsoft	CommonSecurityLog +2 ⓘ	--	Exfiltration
★	Rare domains seen in Cloud Logs	Microsoft	AuditLogs +2 ⓘ	--	
★	Tracking Privileged Account Rare Activity	Microsoft	SecurityAlert +5 ⓘ	--	
★	Exploit and Pentest Framework User Agent	Microsoft	W3CIISLog +2 ⓘ	--	

Suspicious network traffic pa

Custom Queries
PROVIDER

0
RESULTS

Description

Identifies unusual patterns from network traffic logs base patterns. This could indicate reconnaissance attempts by beaconing or data exfiltration from compomised assets w

Created time

11/1/2019

Created by

sfender@microsoft.com

Query

Entities

IP Account Host

Tactics

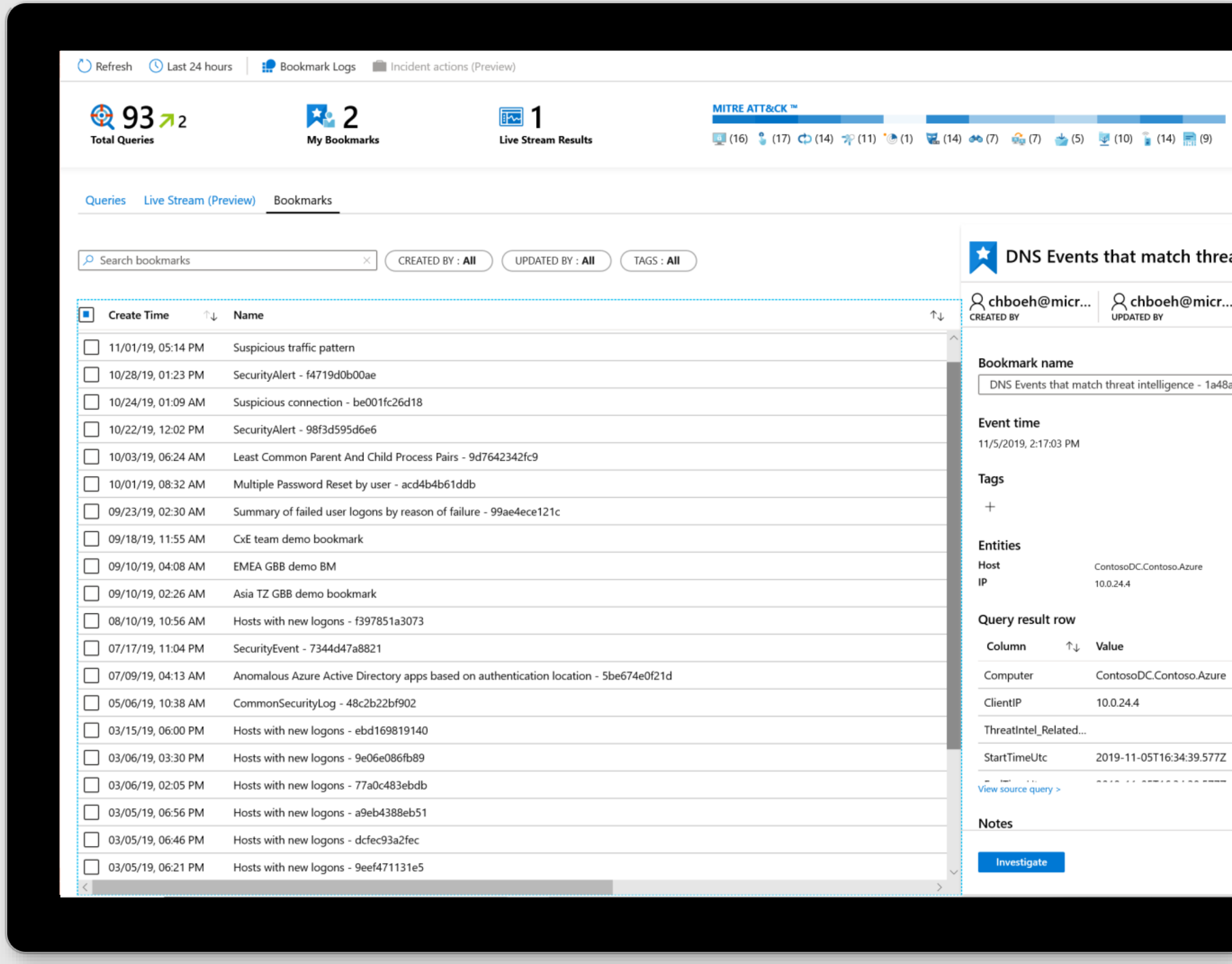
Initial Access The initial access tactic represents t

5 Use bookmarks and live stream to manage your hunts

Bookmark notable data

Start an investigation from a bookmark or add to an existing incident

Monitor a live stream of new threat related activity



■	Create Time ↑↓	Name
□	11/01/19, 05:14 PM	Suspicious traffic pattern
□	10/28/19, 01:23 PM	SecurityAlert - f4719d0b00ae
□	10/24/19, 01:09 AM	Suspicious connection - be001fc26d18
□	10/22/19, 12:02 PM	SecurityAlert - 98f3d595d6e6
□	10/03/19, 06:24 AM	Least Common Parent And Child Process Pairs - 9d7642342fc9
□	10/01/19, 08:32 AM	Multiple Password Reset by user - acd4b4b61ddb
□	09/23/19, 02:30 AM	Summary of failed user logons by reason of failure - 99ae4ece121c
□	09/18/19, 11:55 AM	CxE team demo bookmark
□	09/10/19, 04:08 AM	EMEA GBB demo BM
□	09/10/19, 02:26 AM	Asia TZ GBB demo bookmark
□	08/10/19, 10:56 AM	Hosts with new logons - f397851a3073
□	07/17/19, 11:04 PM	SecurityEvent - 7344d47a8821
□	07/09/19, 04:13 AM	Anomalous Azure Active Directory apps based on authentication location - 5be674e0f21d
□	05/06/19, 10:38 AM	CommonSecurityLog - 48c2b22bf902
□	03/15/19, 06:00 PM	Hosts with new logons - ebd169819140
□	03/06/19, 03:30 PM	Hosts with new logons - 9e06e086fb89
□	03/06/19, 02:05 PM	Hosts with new logons - 77a0c483ebdb
□	03/05/19, 06:56 PM	Hosts with new logons - a9eb4388eb51
□	03/05/19, 06:46 PM	Hosts with new logons - dcfec93a2fec
□	03/05/19, 06:21 PM	Hosts with new logons - 9eef471131e5

DNS Events that match threa

chboeh@micr... CREATED BY

chboeh@micr... UPDATED BY

Bookmark name

DNS Events that match threat intelligence - 1a48a

Event time

11/5/2019, 2:17:03 PM

Tags

+

Entities

Host	ContosoDC.Contoso.Azure
IP	10.0.24.4

Query result row

Column ↑↓	Value
Computer	ContosoDC.Contoso.Azure
ClientIP	10.0.24.4
ThreatIntel_Related...	
StartTimeUtc	2019-11-05T16:34:39.577Z

View source query >

Notes

5 Use Jupyter notebooks for advanced hunting

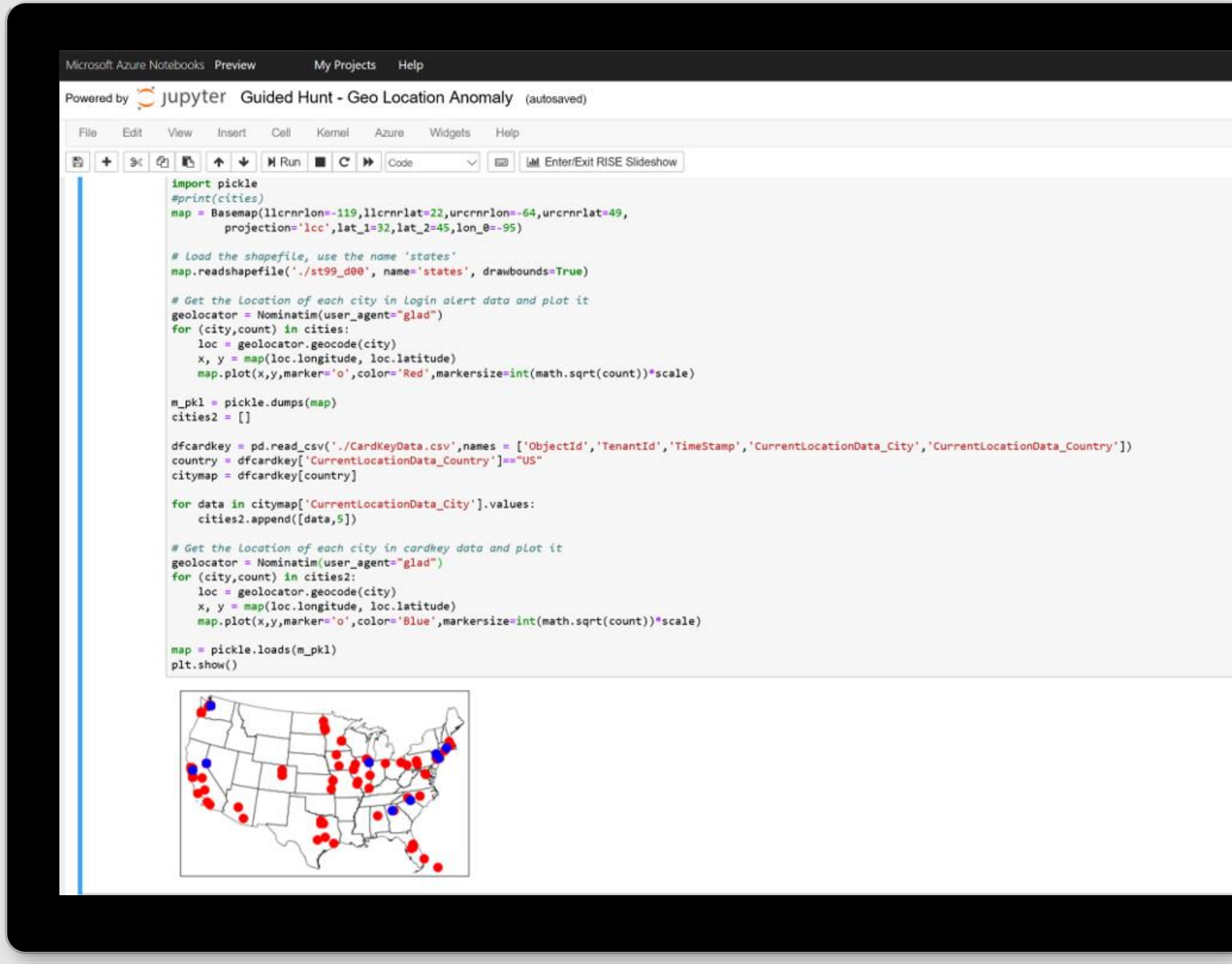
Run in the Azure cloud

Save as sharable HTML/JSON

Query Azure Sentinel data

Bring external data sources

Use your language of choice - Python, SQL, KQL, R, …


Microsoft Azure Notebooks Preview
My Projects
Help
Powered by jupyter
Guided Hunt - Geo Location Anomaly (autosaved)
File
Edit
View
Insert
Cell
Kernel
Azure
Widgets
Help
Run
Code
Enter/Exit RISE Slideshow

```
import pickle
#print(cities)
map = Basemap(llcrnrlon=-119,llcrnrlat=22,urcrnrlon=-64,urcrnrlat=49,
        projection='lcc',lat_1=32,lat_2=45,lon_0=-95)

# Load the shapefile, use the name 'states'
map.readshapefile('./st99_d00', name='states', drawbounds=True)

# Get the location of each city in login alert data and plot it
geolocator = Nominatim(user_agent="glad")
for (city,count) in cities:
    loc = geolocator.geocode(city)
    x, y = map(loc.longitude, loc.latitude)
    map.plot(x,y,marker='o',color='Red',markersize=int(math.sqrt(count))*scale)

m_pkl = pickle.dumps(map)
cities2 = []

dfcardkey = pd.read_csv('./CardKeyData.csv',names = ['ObjectId','TenantId','TimeStamp','CurrentLocationData_City','CurrentLocationData_Country'])
country = dfcardkey['CurrentLocationData_Country']=="US"
citymap = dfcardkey[country]

for data in citymap['CurrentLocationData_City'].values:
    cities2.append([data,5])

# Get the location of each city in cardkey data and plot it
geolocator = Nominatim(user_agent="glad")
for (city,count) in cities2:
    loc = geolocator.geocode(city)
    x, y = map(loc.longitude, loc.latitude)
    map.plot(x,y,marker='o',color='Blue',markersize=int(math.sqrt(count))*scale)

map = pickle.loads(m_pkl)
plt.show()
```

DEMO

$50

Where can you find and share hunting queries for Azure Sentinel?

$50

A

Hundreds of contributions, including data connectors, workbooks, analytics rules, queries, notebooks, parsers, functions, and playbooks are available on GitHub.

Incidents

7

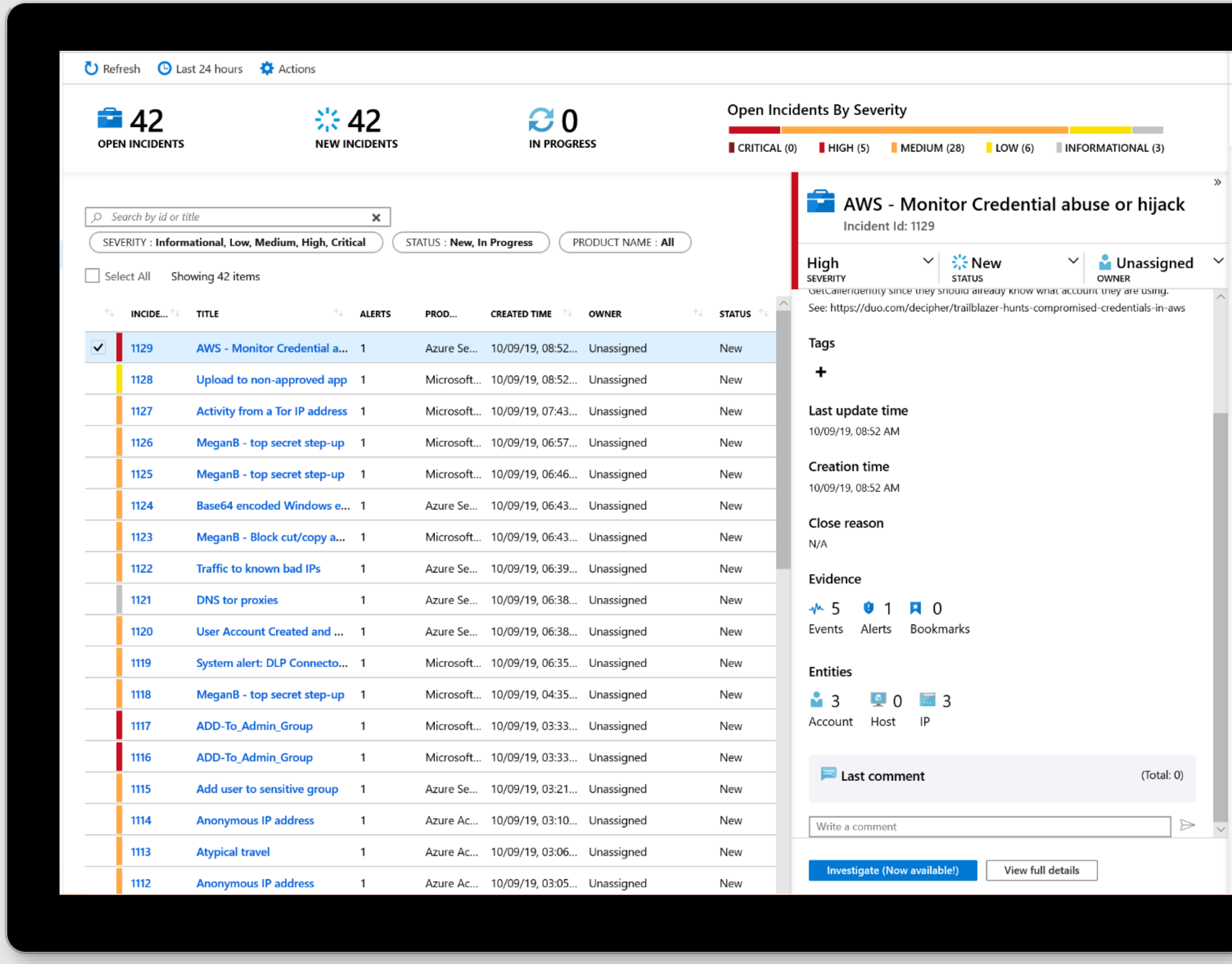
Start and track investigations from prioritized, actionable security incidents

Use incident to collect related alerts, events, and bookmarks

Manage assignments and track status

Add tags and comments

Trigger automated playbooks



42 OPEN INCIDENTS

42 NEW INCIDENTS

0 IN PROGRESS

Open Incidents By Severity

CRITICAL (0) HIGH (5) MEDIUM (28) LOW (6) INFORMATIONAL (3)

SEVERITY : **Informational, Low, Medium, High, Critical**

STATUS : **New, In Progress**

PRODUCT NAME : **All**

□ Select All   Showing 42 items

	INCIDE...	TITLE	ALERTS	PROD...	CREATED TIME	OWNER	STATUS
☑	1129	AWS - Monitor Credential a...	1	Azure Se...	10/09/19, 08:52...	Unassigned	New
	1128	Upload to non-approved app	1	Microsoft...	10/09/19, 08:52...	Unassigned	New
	1127	Activity from a Tor IP address	1	Microsoft...	10/09/19, 07:43...	Unassigned	New
	1126	MeganB - top secret step-up	1	Microsoft...	10/09/19, 06:57...	Unassigned	New
	1125	MeganB - top secret step-up	1	Microsoft...	10/09/19, 06:46...	Unassigned	New
	1124	Base64 encoded Windows e...	1	Azure Se...	10/09/19, 06:43...	Unassigned	New
	1123	MeganB - Block cut/copy a...	1	Microsoft...	10/09/19, 06:43...	Unassigned	New
	1122	Traffic to known bad IPs	1	Azure Se...	10/09/19, 06:39...	Unassigned	New
	1121	DNS tor proxies	1	Azure Se...	10/09/19, 06:38...	Unassigned	New
	1120	User Account Created and ...	1	Azure Se...	10/09/19, 06:38...	Unassigned	New
	1119	System alert: DLP Connecto...	1	Microsoft...	10/09/19, 06:35...	Unassigned	New
	1118	MeganB - top secret step-up	1	Microsoft...	10/09/19, 04:35...	Unassigned	New
	1117	ADD-To_Admin_Group	1	Microsoft...	10/09/19, 03:33...	Unassigned	New
	1116	ADD-To_Admin_Group	1	Microsoft...	10/09/19, 03:33...	Unassigned	New
	1115	Add user to sensitive group	1	Azure Se...	10/09/19, 03:21...	Unassigned	New
	1114	Anonymous IP address	1	Azure Ac...	10/09/19, 03:10...	Unassigned	New
	1113	Atypical travel	1	Azure Ac...	10/09/19, 03:06...	Unassigned	New
	1112	Anonymous IP address	1	Azure Ac...	10/09/19, 03:05...	Unassigned	New

AWS - Monitor Credential abuse or hijack

Incident Id: 1129

High
SEVERITY

New
STATUS

Unassigned
OWNER

GetCallerIdentity since they should already know what account they are using.
See: https://duo.com/decipher/trailblazer-hunts-compromised-credentials-in-aws

Tags

+

Last update time
10/09/19, 08:52 AM

Creation time
10/09/19, 08:52 AM

Close reason
N/A

Evidence

5 Events   1 Alerts   0 Bookmarks

Entities

3 Account   0 Host   3 IP

Last comment (Total: 0)

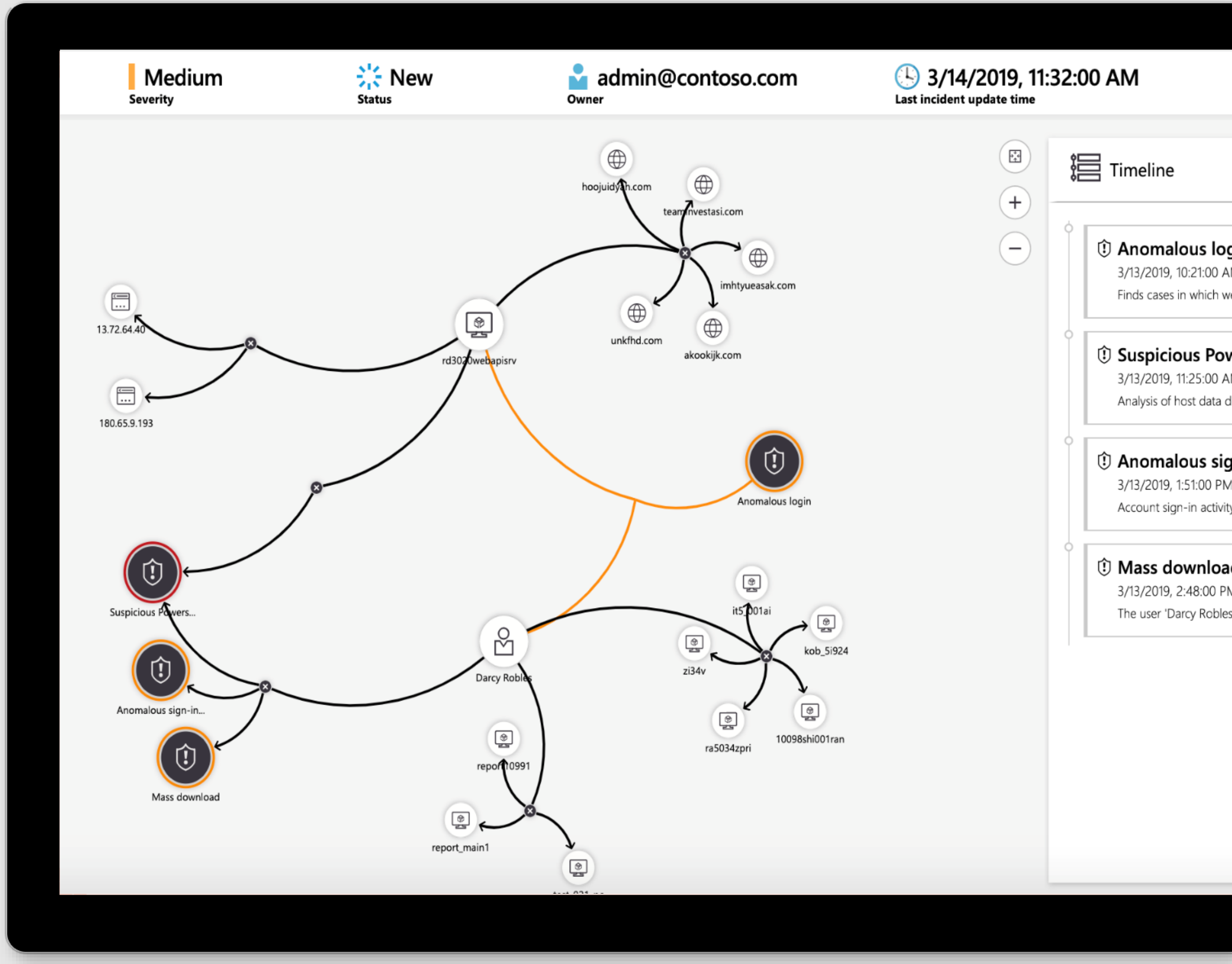
8 Visualize the entire attack to determine scope and impact

Navigate the relationships between related alerts, bookmarks, and entities

Expand the scope using exploration queries

View a timeline of related alerts, events, and bookmarks

Gain deep insights into related entities – users, domains, and more



Medium
Severity

New
Status

admin@contoso.com
Owner

3/14/2019, 11:32:00 AM
Last incident update time

Timeline

Anomalous log
3/13/2019, 10:21:00 A
Finds cases in which w

Suspicious Pov
3/13/2019, 11:25:00 A
Analysis of host data d

Anomalous sig
3/13/2019, 1:51:00 PM
Account sign-in activity

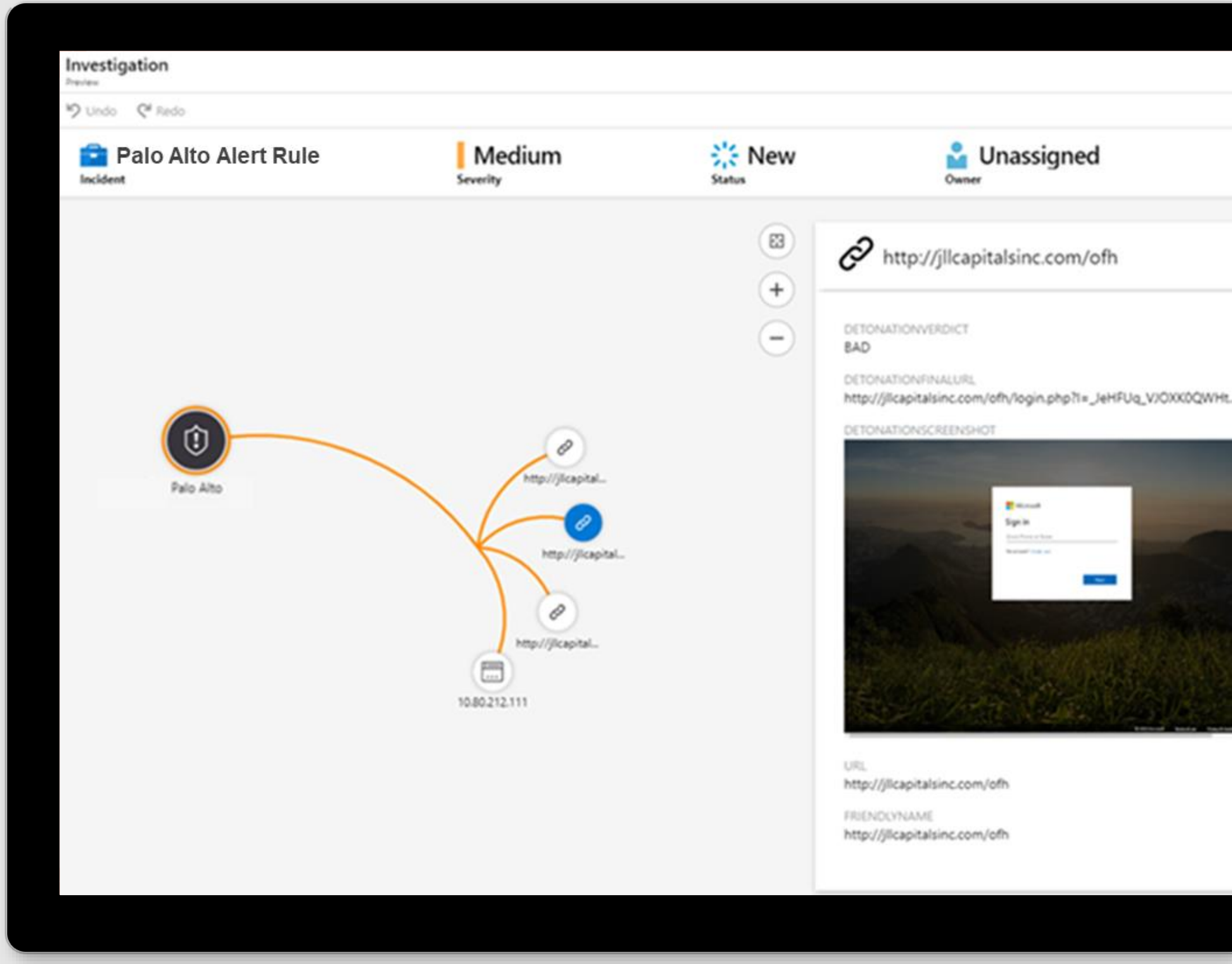
Mass downloa
3/13/2019, 2:48:00 PM
The user 'Darcy Robles

9 Gain deeper insight with built-in automated detonation

Configure URL Entities in analytics rules

Automatically trigger URL detonation

Enrich alerts with Verdicts, Final URLs and Screen Shots (e.g. for phishing sites)



Investigation
Preview

Undo Redo

Palo Alto Alert Rule
Incident

Medium
Severity

New
Status

Unassigned
Owner

http://jllcapitalsinc.com/ofh

DETONATIONVERDICT
BAD

DETONATIONFINALURL
http://jllcapitalsinc.com/ofh/login.php?l=_JeHFUq_VJOXK0QWHt

DETONATIONSCREENSHOT

URL
http://jllcapitalsinc.com/ofh

FRIENDLYNAME
http://jllcapitalsinc.com/ofh

DEMO

$100

"Defenders think in _________.
Attackers think in _________."

-John Lambert, Microsoft Threat Intelligence Center

$100

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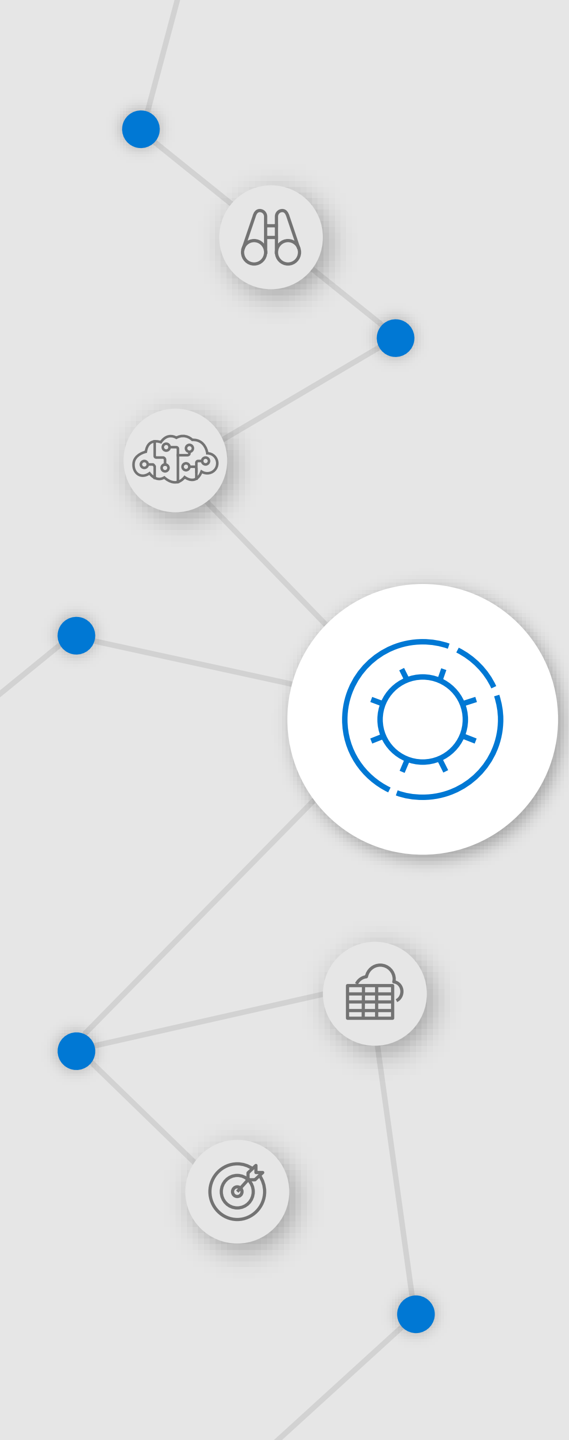
"Defenders think in lists.
Attackers think in graphs."



Automation

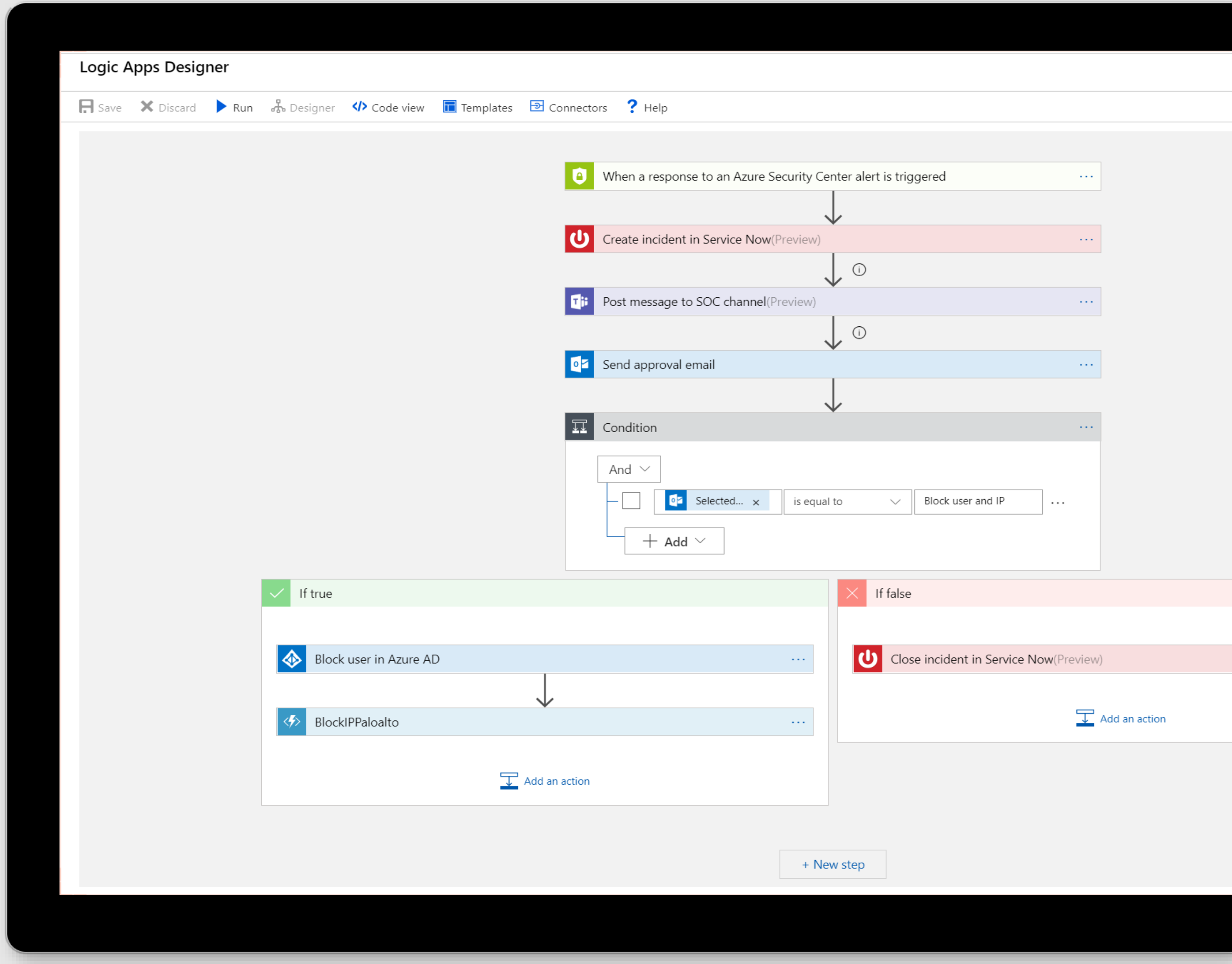
10 Automate and orchestrate security operations using integrated Azure Logic Apps

Build automated and scalable playbooks that integrate across tools

Choose from a library of samples

Create your own playbooks using 200+ built-in connectors

Trigger a playbook from an alert or incident investigation


Logic Apps Designer

When a response to an Azure Security Center alert is triggered

Create incident in Service Now(Preview)

Post message to SOC channel(Preview)

Send approval email

Condition

If true

Block user in Azure AD

BlockIPPaloalto

If false

Close incident in Service Now(Preview)

Example playbooks

Incident Management

Assign an Incident to an Analyst

Open a Ticket (ServiceNow/Jira)

Keep Incident Status in Sync

Post in a Teams or Slack Channel

Enrichment + Investigation

Lookup Geo for an IP

Trigger Defender ATP Investigation

Send Validation Email to User

Remediation

Block an IP Address

Block User Access

Trigger Conditional Access

Isolate Machine

DEMO

Roadmap

Delivered Since Public Preview

Microsoft and 3P Data Connectors – Defender ATP, Cloud App Security, Zscaler, and More

100+ Build-In Detections – Rule-Based and ML

Investigation Graph and Entities

Workbooks with Improved Data Visualizations

Support for Incident Automation

Embedded Azure Notebooks

Live Stream Monitoring of Notable Events

GitHub Integration

URL Detonation

Coming Soon

Additional Data Connectors – More Microsoft Services, Logstash, …

New Built-In Detections – Rule-Based and ML

Additional Detections Powered by Microsoft Threat Intelligence

Bring Your Own ML Models

Threat Intelligence Research, Including Full STIX Objects

Entity Pages – Users, Domains, IPs

And much more…

Azure Sentinel sessions @Ignite 2019

Session Code	Session Title	Date	Time
SEC150	Modernize your SIEM in the cloud with Azure Sentinel	11/6	3:15 - 4:00 PM
BRK3236	Get instant value from your SIEM: Best practices for Azure Sentinel	11/7	10:45 - 12:00
THR2174	Using Azure Sentinel to supercharge your threat hunting	11/6	5:00 - 5:20 PM
THR2159	Threat Hunting in the Cloud with Azure Sentinel and Jupyter Notebooks	11/7	3:05 - 3:25 PM
Hands-on workshop WRK3033R	Investigate and respond to events with Azure Sentinel	11/5 11/6 11/8	2:15 - 03:30 PM 9:00 - 10:15 AM 9:00 - 10:15 AM

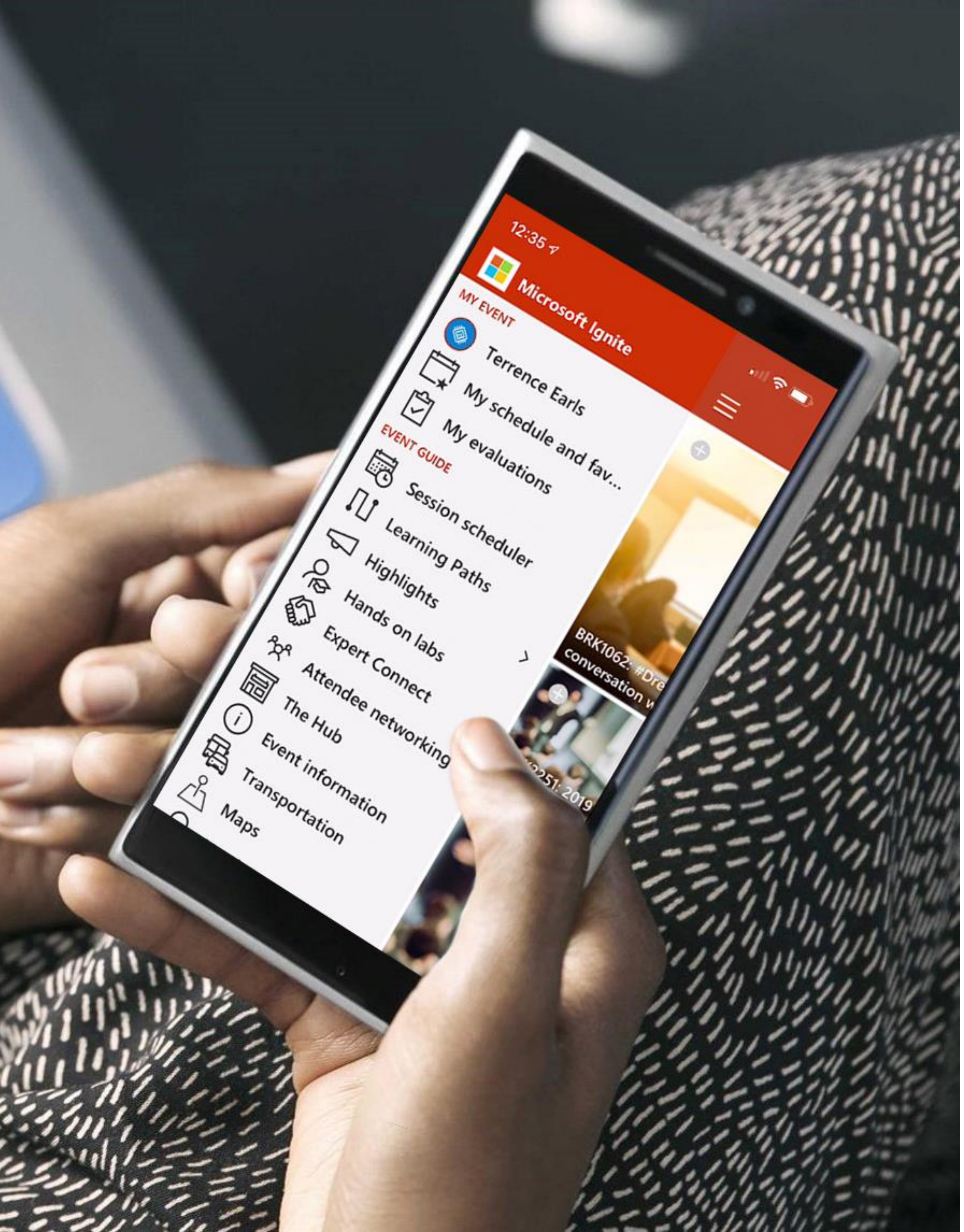
Take actions today—Get started with Azure Sentinel

Start
Microsoft Azure trial

Create Azure Sentinel
instance

Connect
data sources

To learn more, visit https://aka.ms/AzureSentinel



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