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TRANSFORM

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M365 Threat Hunting—How to Understand Attacker's TTPs in Your Tenant

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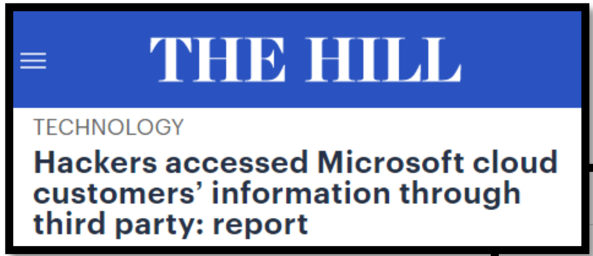
Agenda

- Understanding M365 Attack Trends
- Common M365 Attack Paths
- Key M365 Threat Hunting Capabilities
- Sample Threat Hunting Scenarios
- M365 Threat Hunting Action Plan

Attackers Targeting Microsoft SaaS Platforms

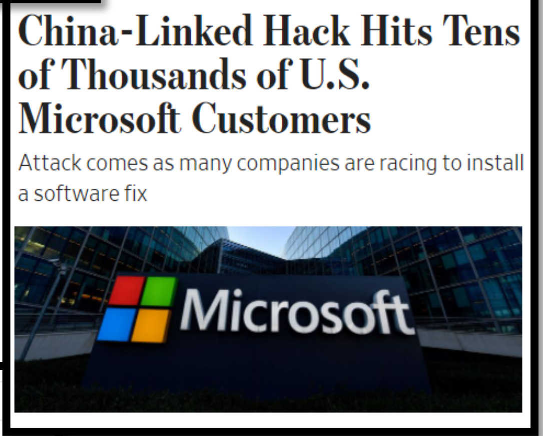
- Azure Active Directory and associated applications facilitated access to the most sensitive information and facilitate critical business operations
- Over the last 2 years, Azure Active Directory and Exchange Online have been the means by which over 100,000 organizations have been compromised around the world
- The efficiency of these attacks has depended upon weak default configurations and the oversights/errors of organizations' M365 administrators



THE HILL

TECHNOLOGY

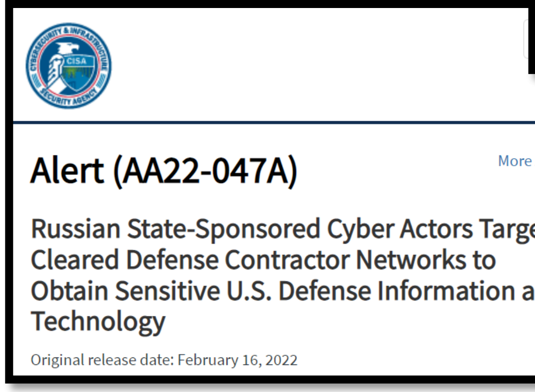
Hackers accessed Microsoft cloud customers' information through third party: report



WSJ

China-Linked Hack Hits Tens of Thousands of U.S. Microsoft Customers

Attack comes as many companies are racing to install a software fix



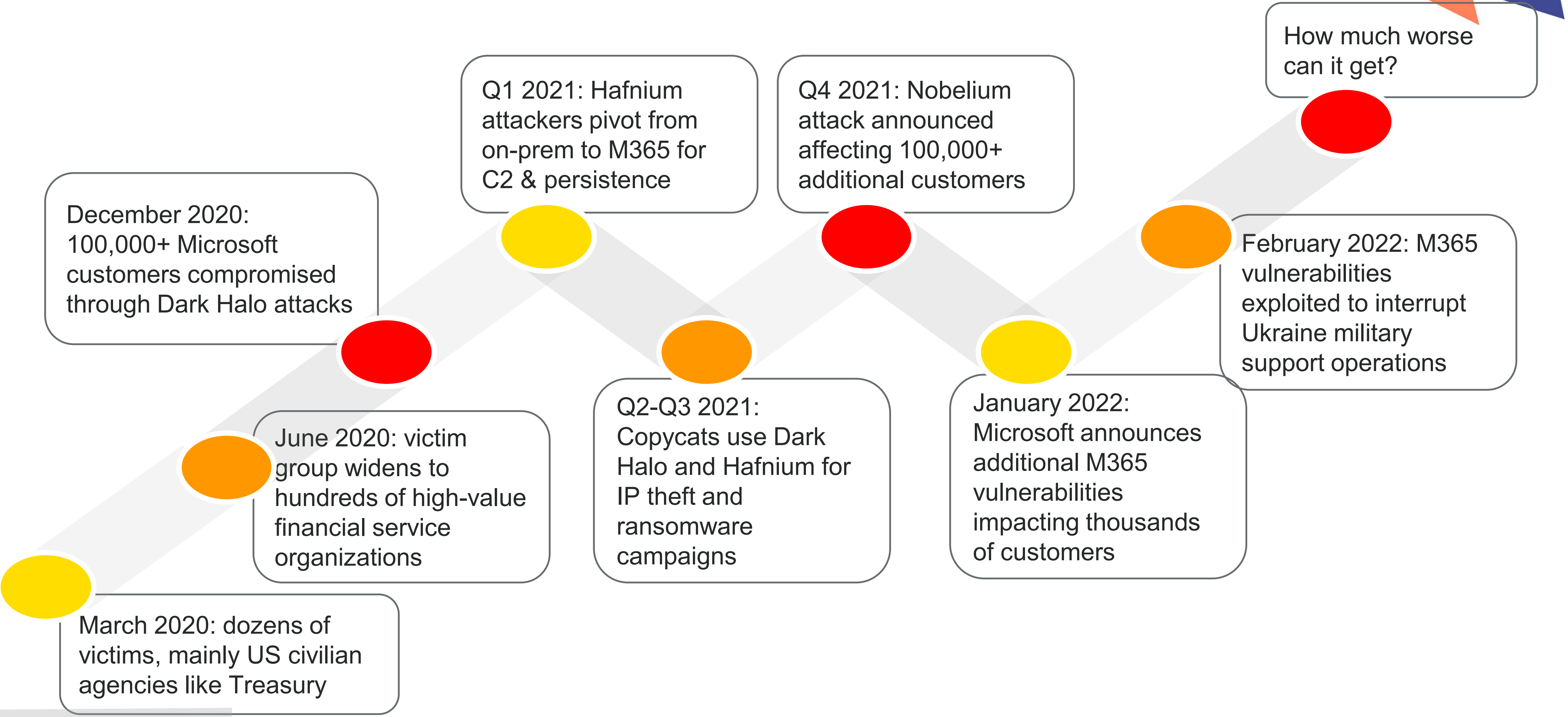
Alert (AA22-047A)

More Alerts

Russian State-Sponsored Cyber Actors Target Cleared Defense Contractor Networks to Obtain Sensitive U.S. Defense Information and Technology

Original release date: February 16, 2022

Increasing Velocity and Efficiency of M365 Attacks



March 2020: dozens of victims, mainly US civilian agencies like Treasury

June 2020: victim group widens to hundreds of high-value financial service organizations

December 2020: 100,000+ Microsoft customers compromised through Dark Halo attacks

Q1 2021: Hafnium attackers pivot from on-prem to M365 for C2 & persistence

Q2-Q3 2021: Copycats use Dark Halo and Hafnium for IP theft and ransomware campaigns

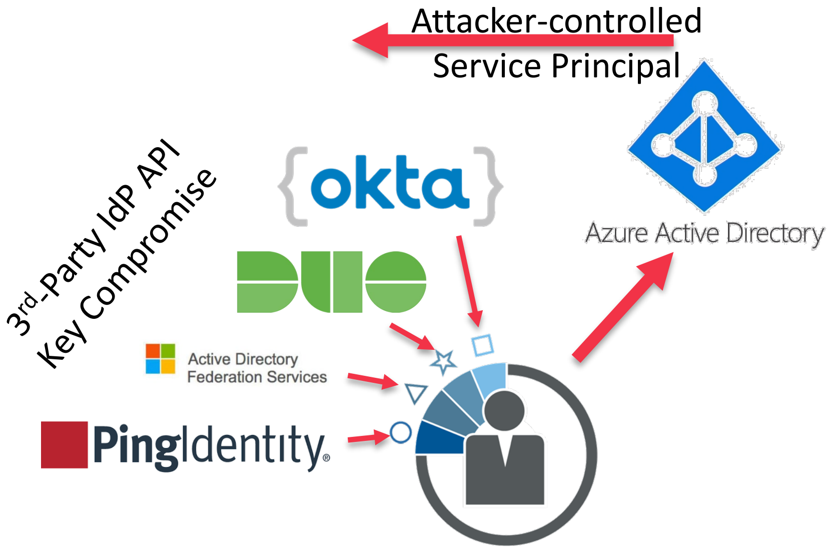
Q4 2021: Nobelium attack announced affecting 100,000+ additional customers

January 2022: Microsoft announces additional M365 vulnerabilities impacting thousands of customers

February 2022: M365 vulnerabilities exploited to interrupt Ukraine military support operations

How much worse can it get?

Common M365 Attack Paths



Attacker-controlled Service Principal

3rd-Party IdP API Key Compromise

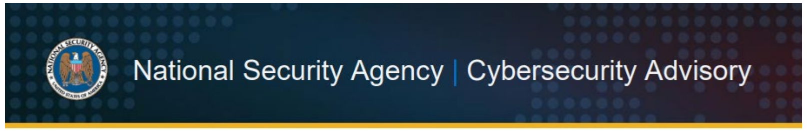
okta

DUO

Active Directory Federation Services

PingIdentity

Azure Active Directory



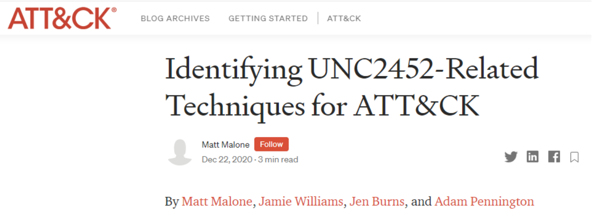
National Security Agency | Cybersecurity Advisory

Detecting Abuse of Authentication Mechanisms

NSA Alert 198854

Exchange Online

Legacy Protocols
IMAP/POP3/AS
MFA Bypass



ATT&CK® BLOG ARCHIVES GETTING STARTED | ATT&CK

Identifying UNC2452-Related Techniques for ATT&CK

Matt Malone Follow
Dec 22, 2020 · 3 min read

By Matt Malone, Jamie Williams, Jen Burns, and Adam Pennington

https://medium.com/mitre-attack/identifying-unc2452-related-techniques-9f7b6c7f3714

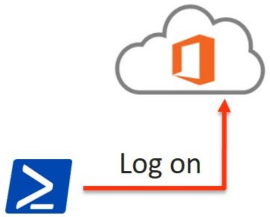
OneDrive

Microsoft Teams

Ransomware Delivery

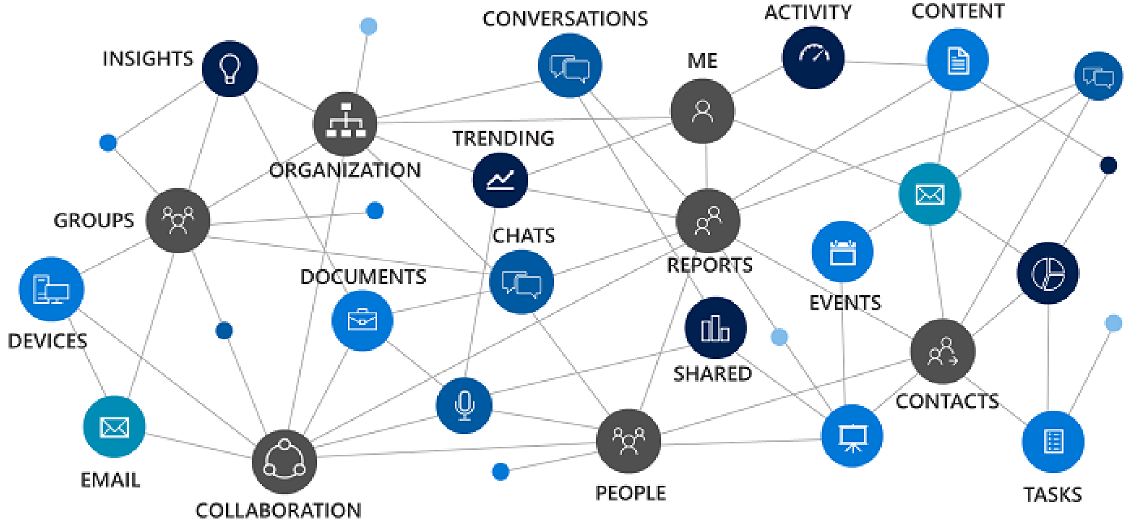
Key Capabilities

- PowerShell
- PowerShell
- PowerShell
- …and GraphAPI knowledge



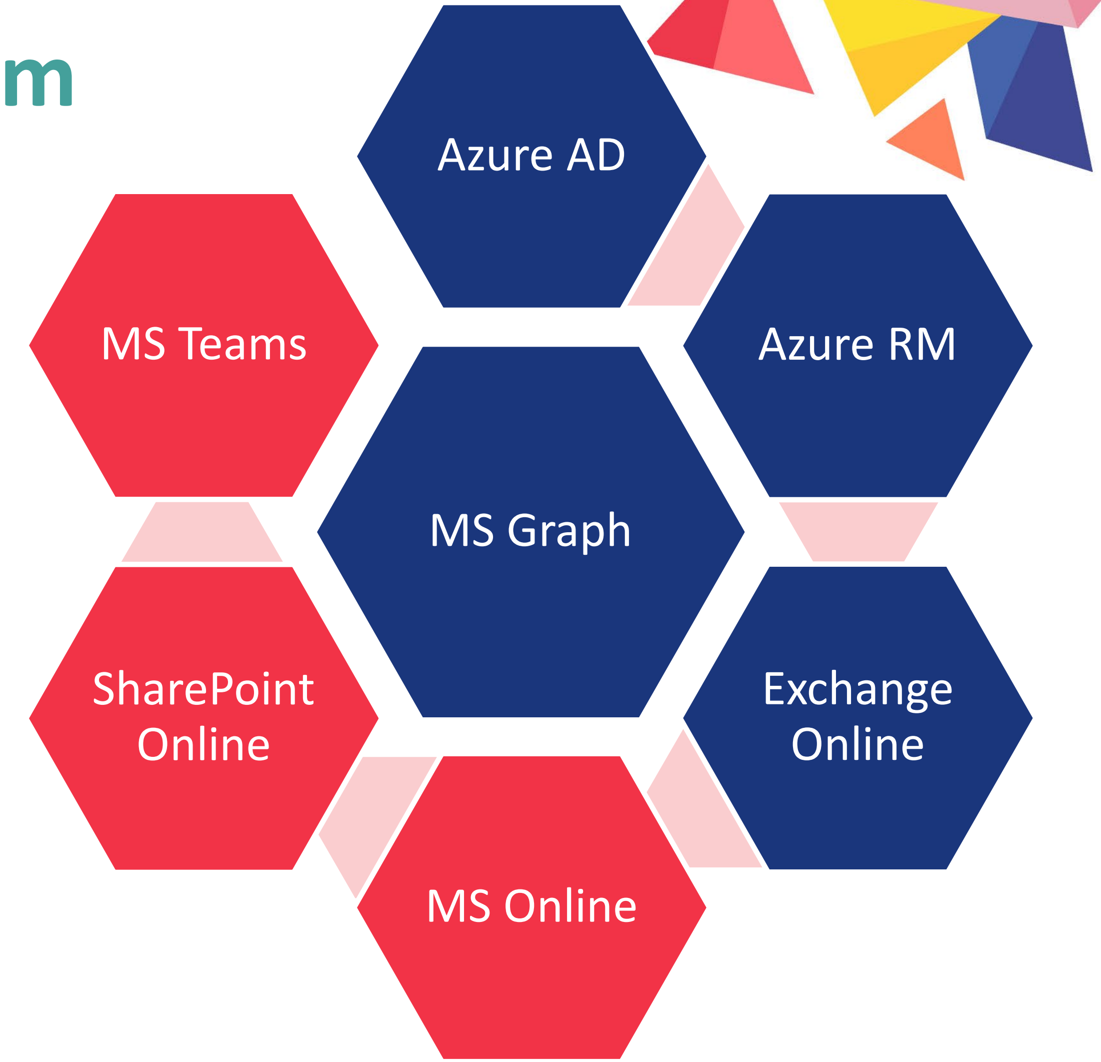
Connect-MsolService

graph.microsoft.com



PowerShell / GraphAPI Conundrum

- Seven different datasources to manage to get basic threat hunting visibility in M365
- Different Logon Methods
  - Supports Service Principals
  - Requires User Credentials
- Mobile Vulnerability Assessment Example
  - How many mobile devices could have their credentials stolen?
- APIs to query:
  - Azure AD (enumerate all active users)
  - Exchange Online (correlate all active mailboxes and mobile connections)
  - MS Graph (Intune data correlation)



Azure AD

MS Teams

Azure RM

MS Graph

SharePoint Online

Exchange Online

MS Online

Threat Hunting Scenario

- Exchange Online Administrator Privilege Abuse
  - Organization has restricted admin tasks to only those with Microsoft Authenticator strictly enforced
  - Long-term unauthorized access discovered
  - How?
- Always fundamentally question EVERY step of the identity supply chain!
  - What is the level of effort to clone a Microsoft Authenticator application?
  - What is the level of effort to compromise a browser used by Exchange Admin?

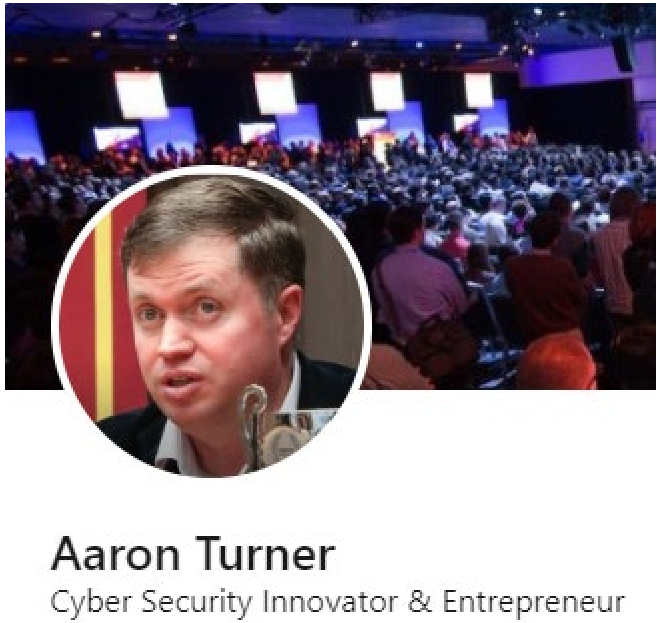
M365 Threat Hunting Action Plan

- Get good at PowerShell!
  - Online Training: Analyzing M365 Security Settings with PowerShell (iansresearch.com)
- Establish appropriate change detection controls
  - First you'll need a baseline, do it NOW
- Implement strong change management for authorized M365 changes
  - Service management tools like ServiceNow can help, but they all require discipline

Questions & Staying In Touch

- Questions & Comments?

- Connect with me on LinkedIn https://www.linkedin.com/in/aaronrturner/



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