



TOP-5 LESSONS LEARNED FROM DEFENDING M365

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AtticSecurity.com
by ZOLDER

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25-9-2024

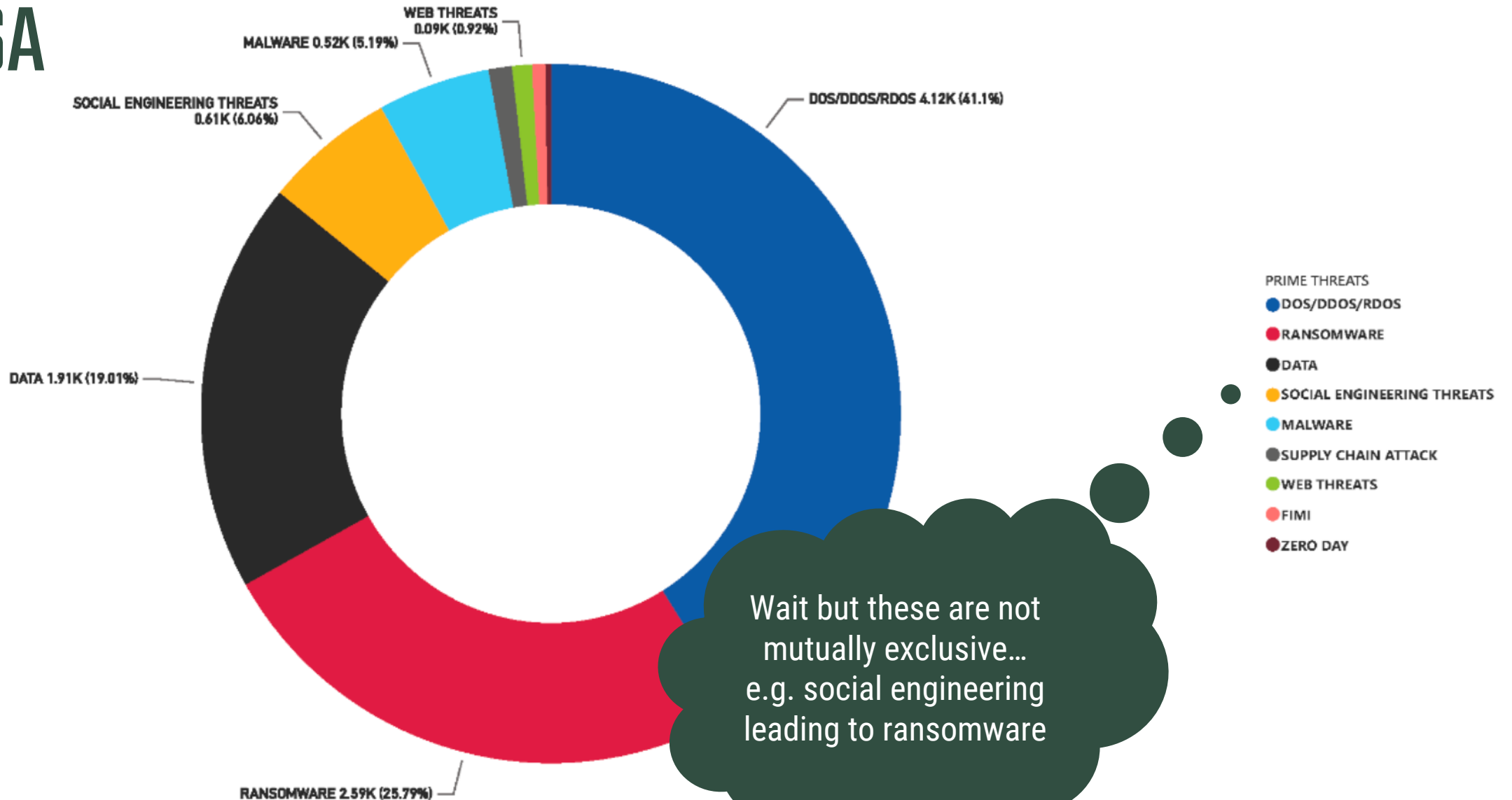
SHOULD DEFENDING M365 BE A PRIORITY?

What do you think? Why?



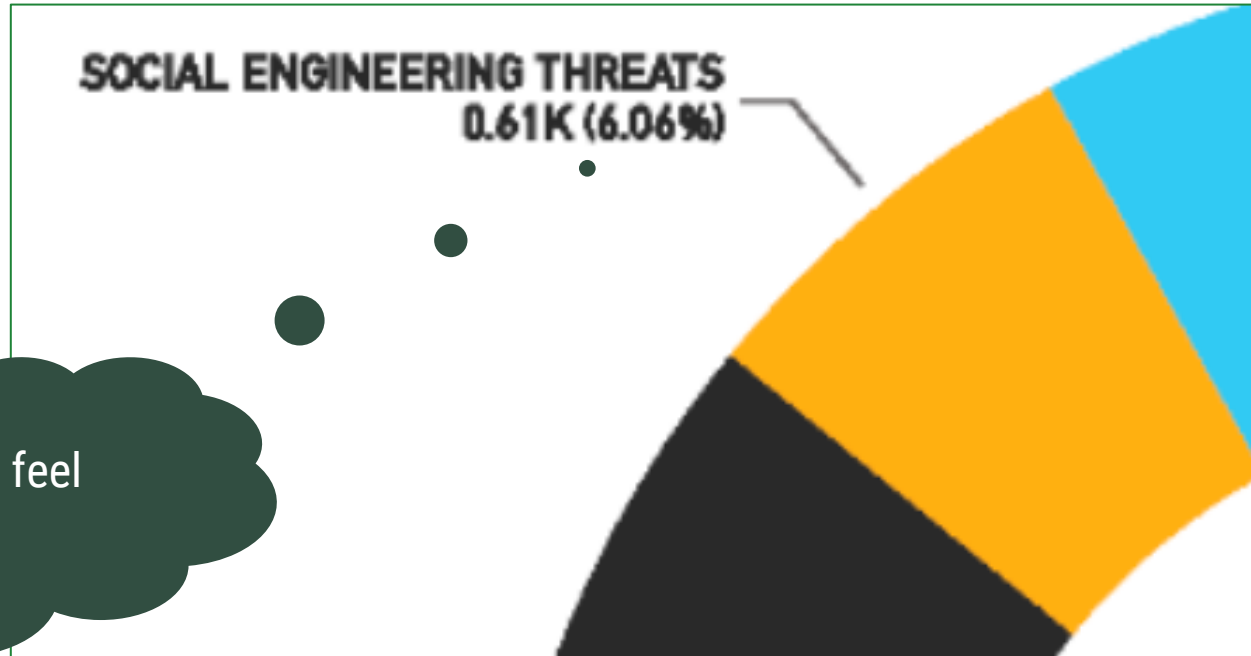
ENISA





Wait but these are not mutually exclusive... e.g. social engineering leading to ransomware

ENISA



This doesn't feel right...

There has also been a rise in compromises of cloud-based identities secured with multi-factor authentication (MFA). Particularly concerning is the growing use of web proxy or adversary-in-the-middle (AiTM) phishing pages, which can bypass many MFA implementations by stealing sensitive session tokens. Attackers commonly use credential-harvesting forms or phishing pages to collect login details from their victims. These phishing sites, designed to mimic popular login portals, pass the user's credentials and MFA codes to the attacker. AiTM phishing pages go beyond standard credential-harvesting techniques by using infrastructure designed to defeat typical MFA methods. Unlike traditional phishing forms, AiTM pages function as a reverse web



RISKY BUSINESS 18-SEPT-24 – CISA AUDIT



The Record.
Recorded Future News

Jonathan Greig
September 14th, 2024

Stolen account info still chief risk for federal agencies, annual CISA audit finds

The article preview includes the CISA logo, which depicts an eagle with wings spread, perched on a shield. The background of the article image is a digital cityscape with glowing blue lines and binary code.

CISA Analysis: Fiscal Year 2023 Risk and Vulnerability Assessments

Publication: September 2024

DISCLAIMER: This document is marked TLP: CLEAR. Disclosure is not limited. Sources may use TLP: CLEAR when information carries minimal or no foreseeable risk of misuse, in accordance with applicable rules and procedures for public release. Recipients may share this information without restriction. Information is subject to standard copyright rules. For more information on the Traffic Light Protocol, see <https://www.cisa.gov/tylp/>.

The report cover features a cityscape at sunset with a network overlay of white lines connecting various points. Logos for CISA and the United States Coast Guard are in the top left. 'TLP: CLEAR' is in the top right.

FY23 RVA Results

MITRE ATT&CK™ TACTICS AND TECHNIQUES

Initial Access

Threat actors attempt to obtain unauthorized initial access into a victim's network. Actors use techniques, such as Valid Accounts T1078 or Spear Phishing Link T1566.002s, to gain this access. After obtaining initial access, actors can then execute other techniques to move about the network.

Mitigations

Organizations can mitigate the risks associated with this technique by adhering to the following CPGs:

CPG 1.E Mitigating Known Vulnerabilities CPG 2.A Changing Default Passwords

CPG 2.H Phishing-Resistant Multifactor Authentication CPG 2.M Email Security

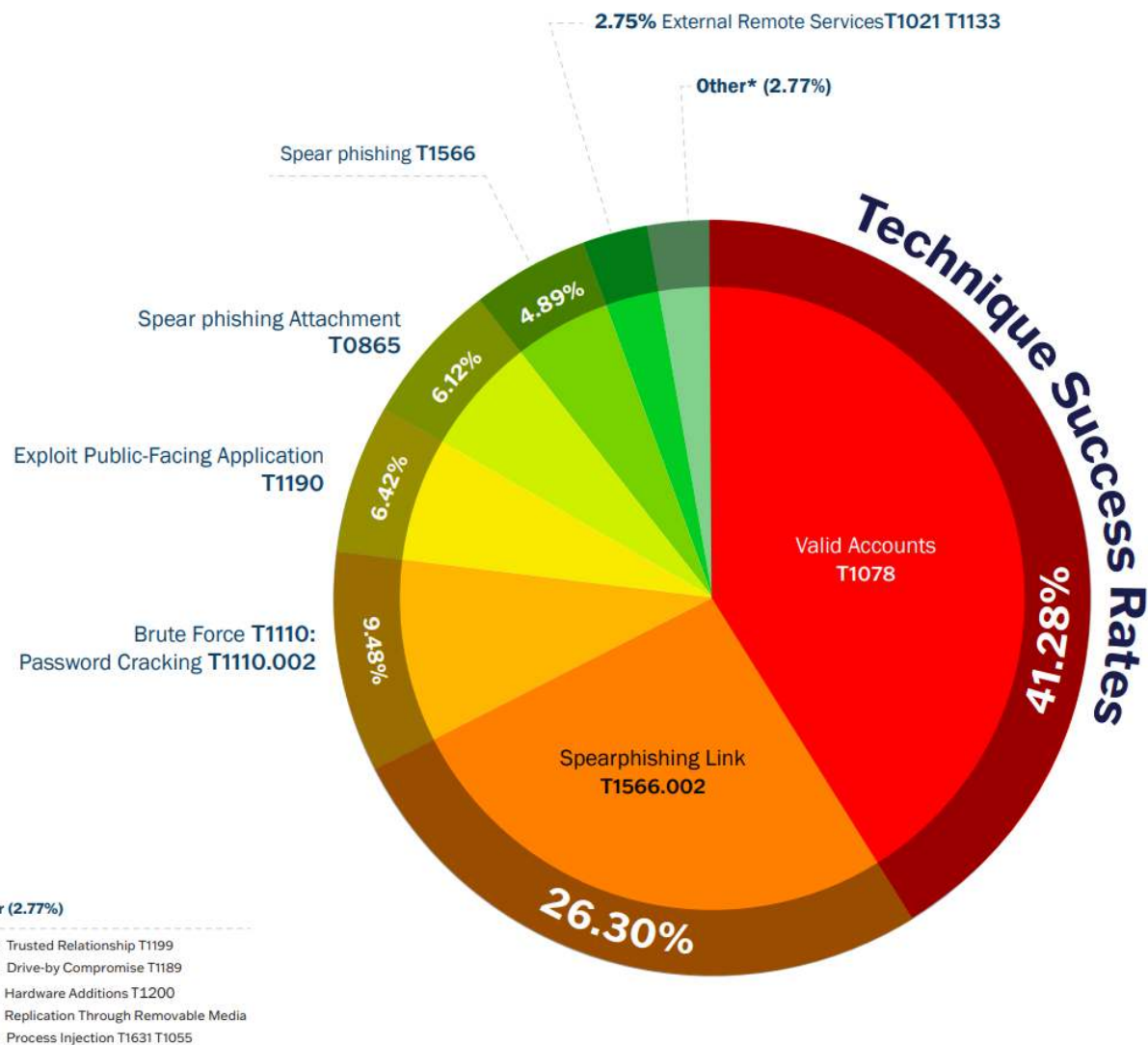
CPG 2.N Disable Macros by Default

CPG 2.W No Exploitable Services on the Internet



ATT&CK®

This advisory uses the MITRE Adversarial Tactics, Techniques, and Common Knowledge (ATT&CK) and Pre-ATT&CK frameworks. See the ATT&CK for Enterprise and Pre-ATT&CK frameworks for referenced threat actor techniques. For more information about CISA assessment services, please visit [cisa.gov](https://www.cisa.gov).



5 LESSONS LEARNED




LESSON #1

AITM & TOKEN REPLAY

MFA-resilient Phishing Techniques



#1: AITM & TOKEN REPLAY

 **Microsoft Threat Intelligence**
44,407 followers + Follow
1mo • 

Microsoft has detected a 111% year-over-year increase in token replay attacks, and incidents are continuing to grow. In token replay attacks, attackers steal tokens – authentication artifacts that grant users access to resources – commonly via malware or adversary-in-the-middle (AiTM) attacks, and then replay the token from somewhere else to impersonate users and access their data.

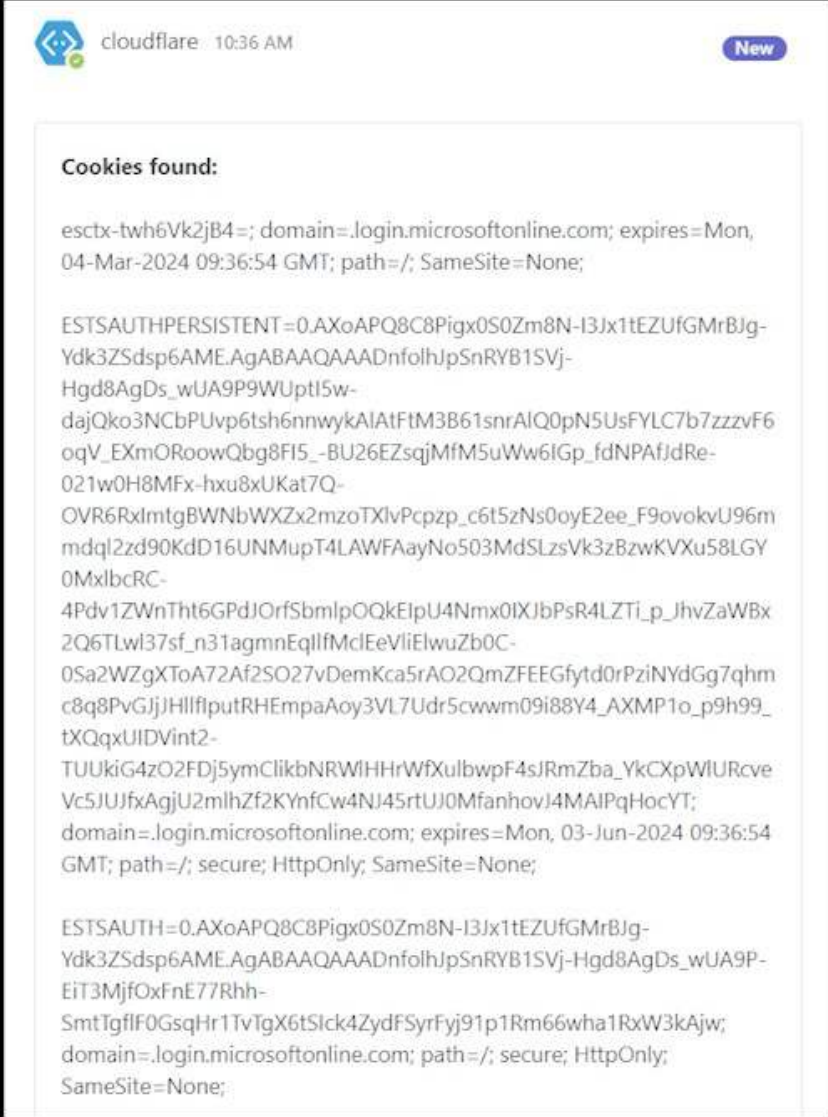
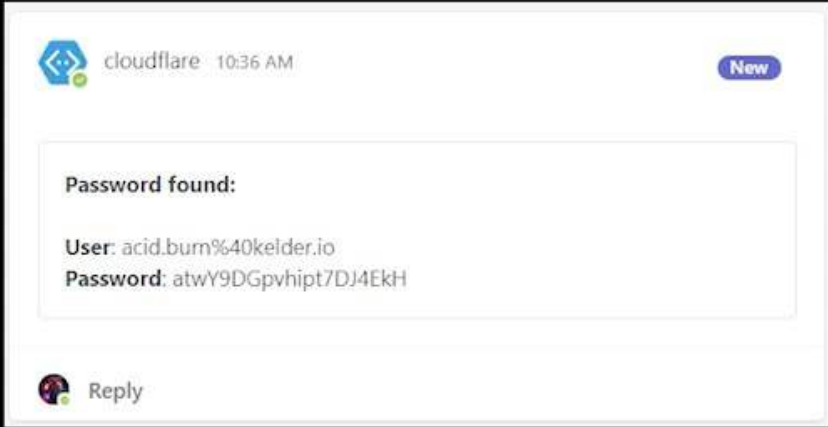
While token theft constitutes fewer than 5% of all identity compromises, Microsoft expects threat actors to continue using this technique, especially since it allows attackers to circumvent protection measures like multi-factor authentication (MFA).

In this blog post, Microsoft provides details on the mechanics of tokens, the token theft attack chain, and how Microsoft protects customers against token theft through token binding. We also provide recommendations for a systematic defense-in-depth approach to counter token theft attacks: <https://msft.it/6042ISgTq>

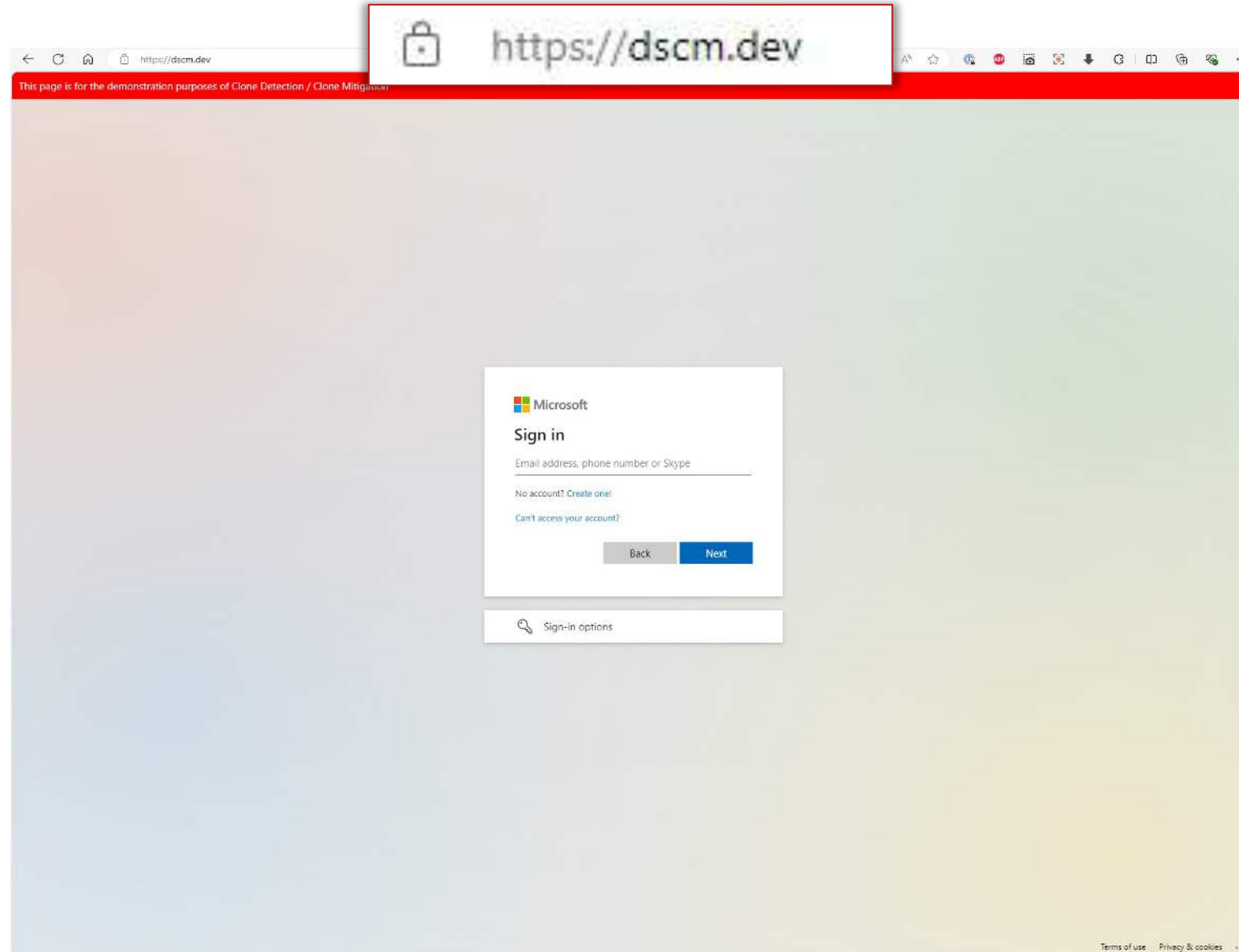


User

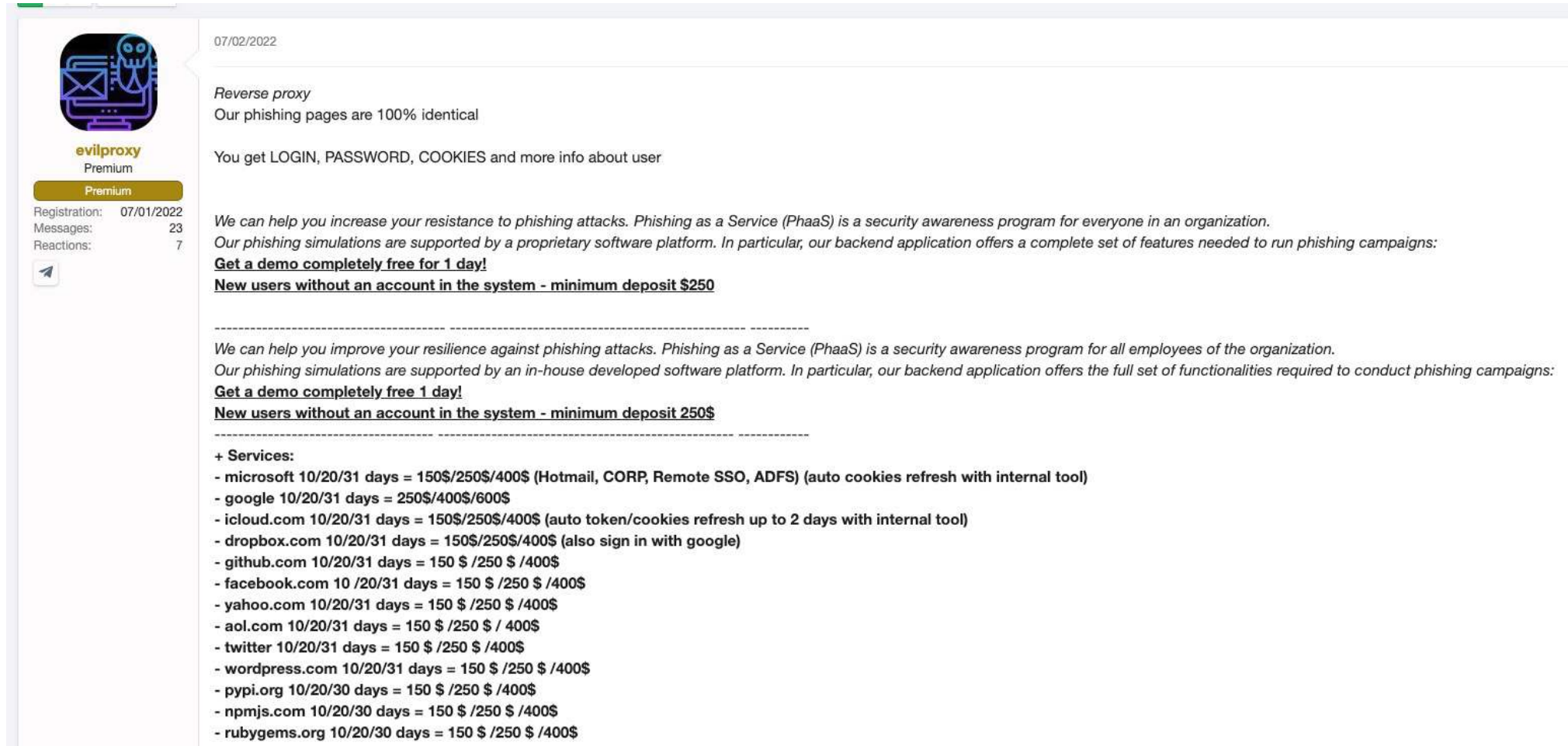
The screenshot shows the Genesis Bots dashboard. The left sidebar contains navigation options: Dashboard, News, Bots, Orders, Purchases, Payments, Tickets, Genesis Security, Profile (3.2.3), Invites, and Logout. The main content area displays a list of bots with columns for Bot Name, Resources Known / Other, Country / Host, and Price. The first bot is identified as 'DESKTOP-GOMVOCL-40f182e1b44c126d188b' with a price of 41.30. The second bot is 'DESKTOP-8U9T8DA-46fb93aed516a6a4361c' with a price of 41.30. The third bot is '2.168.0.1' with a price of 41.30. The fourth bot is 'Ebay Aliexpress' with a price of 41.30. The dashboard also includes filters for bot name, resources known, country, and price, and a search bar.



EVILGINX POC



CAAS > EVILPROXY



The image shows a screenshot of a profile page for 'evilproxy' on a platform. The profile includes a purple and blue icon of a skull with a laptop, the name 'evilproxy Premium', and statistics: Registration: 07/01/2022, Messages: 23, Reactions: 7. The main content area contains two identical blocks of text, each starting with a date '07/02/2022'. The first block describes 'Reverse proxy' services, stating that phishing pages are 100% identical and that users receive login, password, and cookie information. It offers a security awareness program (PhaaS) and a 1-day free demo, with a \$250 minimum deposit for new users. The second block is identical but mentions an 'in-house developed software platform'. A list of services follows, detailing prices and durations for various domains like microsoft, google, icloud.com, dropbox.com, github.com, facebook.com, yahoo.com, aol.com, twitter, wordpress.com, pypi.org, npmjs.com, and rubygems.org.

07/02/2022

Reverse proxy
Our phishing pages are 100% identical

You get LOGIN, PASSWORD, COOKIES and more info about user

We can help you increase your resistance to phishing attacks. Phishing as a Service (PhaaS) is a security awareness program for everyone in an organization. Our phishing simulations are supported by a proprietary software platform. In particular, our backend application offers a complete set of features needed to run phishing campaigns:

Get a demo completely free for 1 day!
New users without an account in the system - minimum deposit \$250

We can help you improve your resilience against phishing attacks. Phishing as a Service (PhaaS) is a security awareness program for all employees of the organization. Our phishing simulations are supported by an in-house developed software platform. In particular, our backend application offers the full set of functionalities required to conduct phishing campaigns:

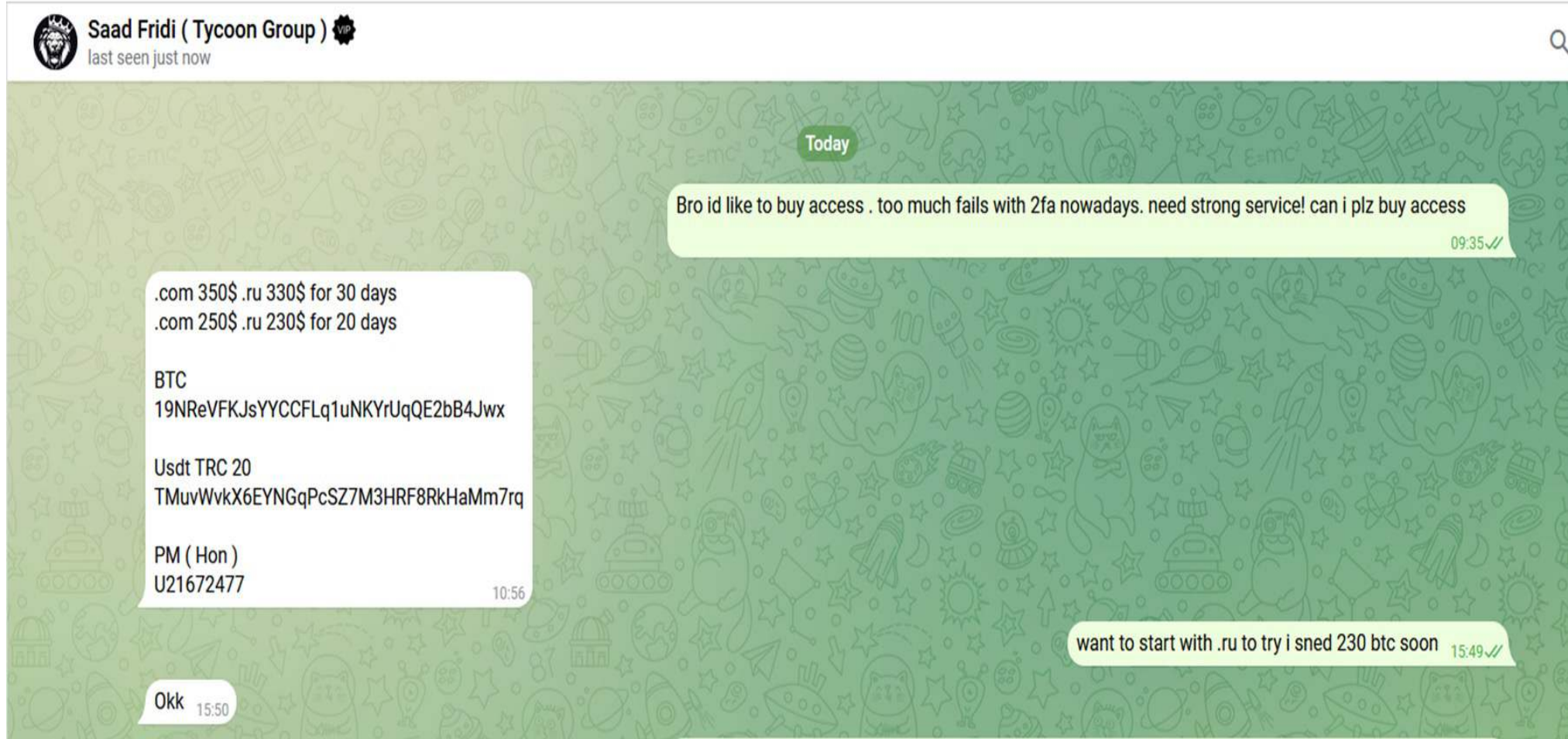
Get a demo completely free 1 day!
New users without an account in the system - minimum deposit 250\$

+ Services:

- microsoft 10/20/31 days = 150\$/250\$/400\$ (Hotmail, CORP, Remote SSO, ADFS) (auto cookies refresh with internal tool)
- google 10/20/31 days = 250\$/400\$/600\$
- icloud.com 10/20/31 days = 150\$/250\$/400\$ (auto token/cookies refresh up to 2 days with internal tool)
- dropbox.com 10/20/31 days = 150\$/250\$/400\$ (also sign in with google)
- github.com 10/20/31 days = 150 \$ /250 \$ /400\$
- facebook.com 10 /20/31 days = 150 \$ /250 \$ /400\$
- yahoo.com 10/20/31 days = 150 \$ /250 \$ /400\$
- aol.com 10/20/31 days = 150 \$ /250 \$ / 400\$
- twitter 10/20/31 days = 150 \$ /250 \$ /400\$
- wordpress.com 10/20/31 days = 150 \$ /250 \$ /400\$
- pypi.org 10/20/30 days = 150 \$ /250 \$ /400\$
- npmjs.com 10/20/30 days = 150 \$ /250 \$ /400\$
- rubygems.org 10/20/30 days = 150 \$ /250 \$ /400\$



CAAS > TYCOON



MEASURES VS AITM?

- **Phishing Resistant MFA**
 - Passkeys
 - Windows Hello
 - FIDO2 key
 - Certificates
- **Compliance-based Conditional Access**
 - Non-BYOD friendly
- **Custom CSS**
- **SafeLinks**



LESSON #2

PRIVILEGE MANAGEMENT

It is not all about users...



#2: PRIVILEGE MANAGEMENT++

- Partner Tier1 Support
- Partner Tier2 Support
- Directory Synchronization Accounts
- On Premises Directory Sync Account

App Consents

Microsoft

testadmin@fourthcoffeetest.onmicrosoft.com

Permissions requested

Best Practices Demo
Fabrikam, Inc.

This application is not published by Microsoft.

This app would like to:

- ✓ Have full access to your calendars
- ✓ View your basic profile
- ✓ Maintain access to data you have given it access to

Consent on behalf of your organization

Accepting these permissions means that you allow this app to use your data as specified in their terms of service and privacy statement. **The publisher has not provided links to their terms for you to review.** You can change these permissions at <https://myapps.microsoft.com>. [Show details](#)

Does this app look suspicious? [Report it here](#)

Hidden Admin Roles

Medium Search Write

The Most Dangerous Entra Role You've (Probably) Never Heard Of

Andy Robbins · Follow
Published in Posts By SpecterOps Team Members · 6 min read · Feb 16, 2024

Service Principals

Global Administrator | Assignments

All roles

Diagnose and solve problems

Manage

Assignments

Description

Activity

Troubleshooting + Support

Search

Search by name

Type

All

Name	UserName	Type
<input type="checkbox"/> Samsung Email	8acd33ea-7197-4a96-bc33-d7cc7101262f	ServicePrincipal
<input type="checkbox"/> AdminAgents		Group
<input type="checkbox"/> Emergency Admin	emergency-admin@	User
<input type="checkbox"/> Erik Remmelzwaal	erik@	User
<input type="checkbox"/> Partner Technician		Group

Medium Search Write

Medium has a built-in role called "Partner Tier2 Support" that enables access to Global Admin, but this role is hidden from view in the Azure portal GUI.

It matters

An adversary may target the "Partner Tier2 Support" role to maintain lengthy, privileged persistence in an Entra ID tenant

Because the Azure portal GUI obscures this role, it can be challenging for Azure admins and security professionals to audit assignments for this role

<input type="checkbox"/> Samsung Email	8acd33ea-7197-4a96-bc33-d7cc7101262f	ServicePrincipal
--	--------------------------------------	------------------

LESSON #3

PUBLIC TEAMS & SITES

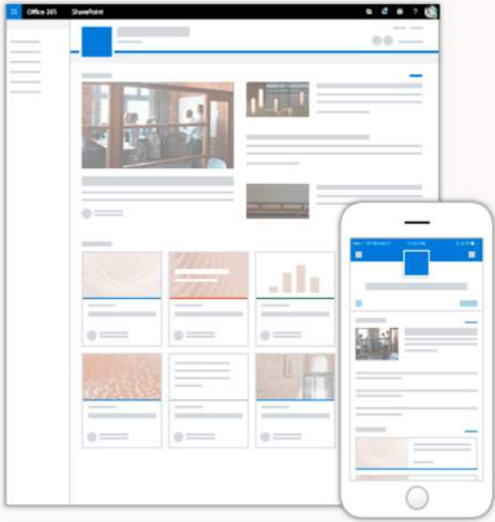
Modern day open SMB shares



#3: PUBLIC TEAMS & SHAREPOINT SITES

Get a team site connected to Microsoft 365 Groups

Use this design to collaborate with your team. Share documents, track events in a shared calendar, and manage project tasks.



Site name
Example
The site name is available.

Group email address
Example
The group alias is available.

Site address
Example
https://kelderio.sharepoint.com/sites/Example
The site address is available.

Site description
Tell people the purpose of this site

Privacy settings
Private - only members can access this site
Public - anyone in the organization can access this site
Private - only members can access this site

Select the default site language for your site. You can't change this later.

Next Cancel

ZOLDER applied security research

← Alle blogs

Public SharePoint sites – the new open shares

16 september 2021 • Blog • Wesley Neelen

During one of our engagements we were investigating a Microsoft 365 environment. My colleague [Rik](#) discovered that many SharePoint sites were publicly available within the organization. We were surprised by the amount sites that were wide open this way. A lot of sensitive information was located on those sites, for example PII-information and passwords for critical systems.

<https://zolder.io/blog/public-sharepoint-sites-the-new-open-shares/>

CSO

Home • Security • Fortinet confirms breach that likely leaked 440GB of customer data

by Shweta Sharma
Senior Writer

Fortinet confirms breach that likely leaked 440GB of customer data

News
Sep 13, 2024 • 3 mins

Data Breach Ransomware

in X f

The cybersecurity company said a threat actor had unauthorized access to files on a third-party cloud-shared drive.



Credit: JHVEPhoto / Shutterstock

Fortinet has confirmed a data breach that has allegedly compromised 440GB of Azure SharePoint files containing Fortinet customer data.

<https://www.csoonline.com/article/3520517/fortinet-confirms-a-breach-that-likely-leaked-440-gb-of-customer-data.html>

LESSON #4

'FREE' SIEM

Make use of what you pay for



#4: FREE LOGGING & MONITORING



Free data sources

The following data sources are free with Microsoft Sentinel:

- Azure Activity Logs
- Microsoft Sentinel Health
- Office 365 Audit Logs, including all SharePoint activity, Exchange admin activity, and Teams
- Security alerts, including alerts from the following sources:
 - Microsoft Defender XDR
 - Microsoft Defender for Cloud
 - Microsoft Defender for Office 365
 - Microsoft Defender for Identity
 - Microsoft Defender for Cloud Apps
 - Microsoft Defender for Endpoint
- Alerts from the following sources:
 - Microsoft Defender for Cloud
 - Microsoft Defender for Cloud Apps

The screenshot shows the Microsoft Sentinel interface. The main heading is "Data connectors" with a search bar and filters. A table lists various connectors, with "Microsoft 365 Defender (Preview)" selected. The right-hand pane provides details for this connector, including its status, description, and related content.

Status	Connector name
Connected	Microsoft 365 Defender (Preview) Microsoft
Connected	Microsoft Defender for Cloud Microsoft
Connected	Microsoft Defender for Cloud Apps Microsoft
Connected	Microsoft Defender for Endpoint Microsoft
Connected	Microsoft Defender for Identity Microsoft
Connected	Microsoft Defender for IoT Microsoft
Connected	Microsoft Defender for Office 365 (Preview) Microsoft

Microsoft 365 Defender (Preview)
Connected Status | Microsoft Provider | 1 Hour Ago Last Log Received

Description
Microsoft 365 Defender is a unified, natively integrated, pre- and post-breach enterprise defense suite that protects endpoint, identity, email, and applications and helps you detect, prevent, investigate, and automatically respond to sophisticated threats.

Microsoft 365 Defender suite includes:

- Microsoft Defender for Endpoint
- Microsoft Defender for Identity
- Microsoft Defender for Office 365
- Microsoft Defender for Cloud Apps
- Microsoft Defender Alert Evidence
- Microsoft Defender Vulnerability Management

Last data received
11/2/2022, 10:47:17 PM

Related content
2 Workbooks | 4 Queries | 72 Analytics rule template

[Open connector page](#)

<https://learn.microsoft.com/en-us/azure/sentinel/billing?tabs=simplified%2Ccommitment-tiers#free-data-sources>

LESSON #5

PREMIUM ANTI-PHISHING

Make use of what you pay for



USER IMPERSONATION

Office 365 Security & Compliance

Edit impersonation policy

User Impersonation

Editing Add users to protect

Add users to protect

Add domains to protect

Actions

Mailbox intelligence

Add trusted senders and domains

Add up to 60 internal and external users you want to protect from being impersonated by attackers. We recommend adding users in key roles. Internally, these might be your CEO, CFO, and other senior leaders. Externally, these could include council members or your board of directors.

Get tips for adding users to protect

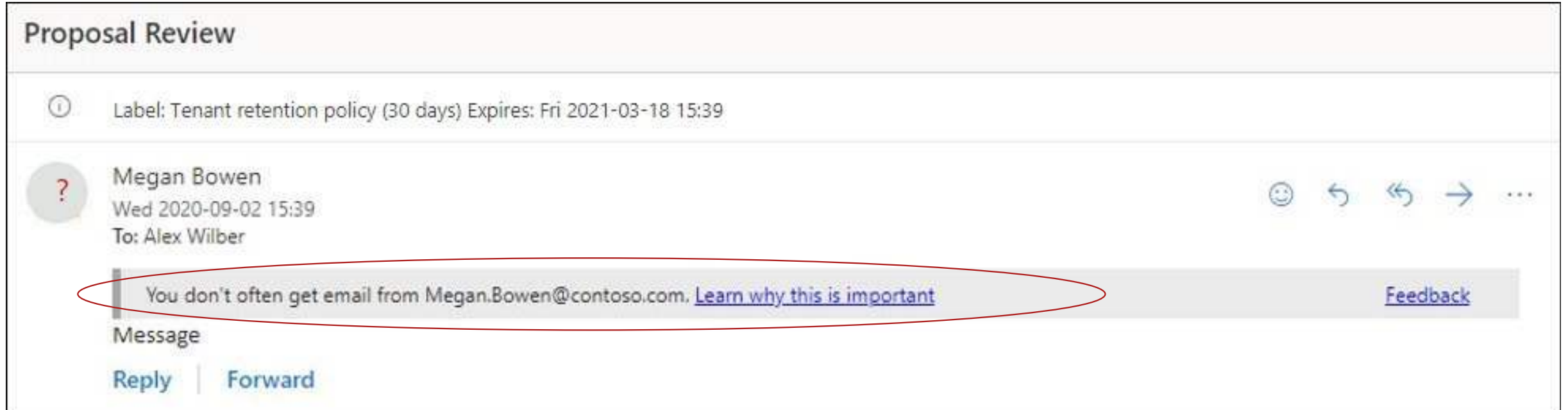
Off

Save Cancel

Protect targeted users and domains


GCITS

PHISHING MAILTIPS



SAFELINKS

Microsoft Outlook




We've detected an unsafe link.

Visiting this website might not be safe. As a benefit of your Microsoft Office 365 subscription, Microsoft has blocked <http://www.obvious-phishing-att...>. This website might harm your computer or cause your personal information to be stolen. We recommend that you do not continue.

[Return to Outlook](#)

Continue anyway (not recommended).

 This website is classified as malicious.

Opening this website might not be safe.

`www.unsafe_url/login.php`

We recommend that you don't open this website, as opening it might not be safe and could harm your computer or result in malicious use of your personal data.

[X Close this page](#)

[Continue anyway \(not recommended\)](#)

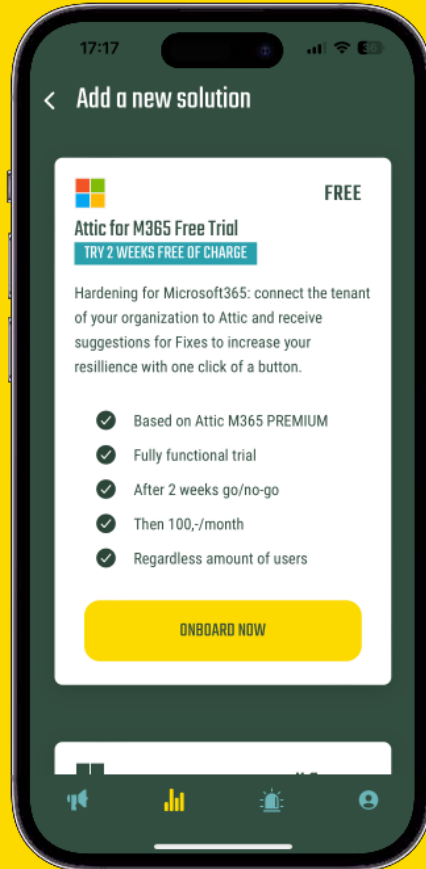
Powered by Office 365 Advanced Threat Protection



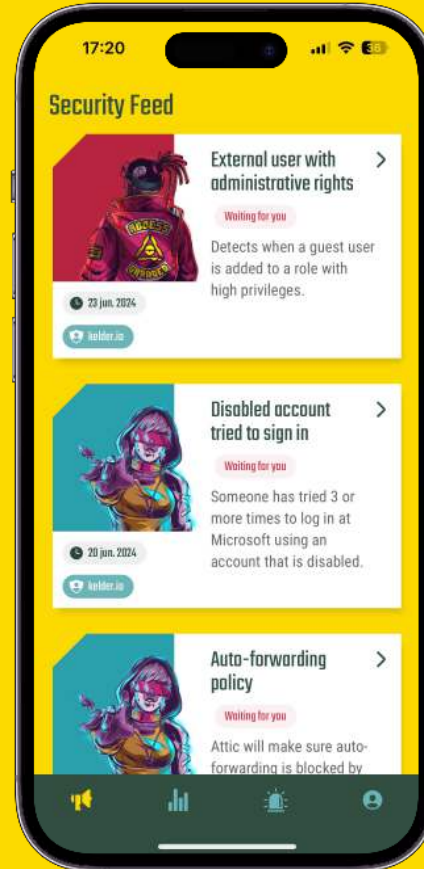
ATTIC SECURITY

Automated, scalable cybersecurity operations for SMB. We also have AI.

▶ ONBOARD



🚨 ALARM



⚙️ FIX

