KEYS TO THE KINGDOM

How Compromised Corporate Emails Have Become the Most Attractive Attack Vector for Cybercriminals

KELA)

KELA Cybercrime Intelligence ©

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KELA Cybercrime Intelligence Center

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Key findings

- The evolution and servitization (paying for a service instead of buying the equipment) of the cybercrime ecosystem enable threat actors to easily acquire corporate webmail. Popular dedicated webmail sale shops include xLeet, Odin, Lufix, and Xmina.
- KELA's analysis shows that the largest shop offering webmail access is XLeet, with an average
 price of USD 25 for a single webmail. Office 365 is the most attractive email hosting provider on
 these marketplaces.
- Threat actors aim to gain easy profits from compromised emails. The dedicated shops allow cybercriminals to sell hundreds of compromised corporate emails. That eases the process for threat actors that look for the ideal victim based on different categories such as sectors and countries.
- Once the webmails are purchased, actors can monetize them to steal money and increase their profit in phishing, business email compromise (BEC), and malware attacks.
- Phishing is a common attack vector for threat actors and state-sponsored espionage actors like advanced persistent threats (APTs) that may use automated webmail shops for purchasing corporate credentials.
- Malware is also commonly used by actors that aim to gain high profits from compromised email accounts. Used for social engineering as an initial step in information stealing trojans and ransomware infections, those attacks help attackers steal money and receive high ransom payments from the victims.

Introduction

Threat actors are constantly looking for new monetization opportunities in the cybercrime ecosystem, trying to put their hands on sensitive corporate data and leverage that for their profit. Such compromised data on cybercrime forums can include databases, source code, internal documents, as well access to services such as corporate email credentials. Once credentials are obtained, unauthorized actors can view the content of organizational accounts, as well as send emails from the compromised accounts, which appear legitimate but contain phishing campaigns.

Threat actors now have new marketplaces and shops, which enable them to easily buy corporate email accounts for their attacks. Webmail refers to an email that is sent via a web browser and web-based interface of different business email providers; a user can access a corporate email as long as he is connected to the internet. Regular email clients can be accessed through desktop programs. KELA noticed that actors selling email access via these dedicated, automated shops offer hundreds of thousands of corporate email credentials for sale. In this analysis, KELA takes a closer look at the scope of shops such as XLeet, Odin, Xmina, and Lufix that are easing processes for cybercriminals. This report shows how actors could obtain access and monetize it through several attack vectors, which include phishing, BEC, and malware attacks.

The goal: Email account takeover

People rely on email for almost every single daily activity, both personal and professional. As a result, corporate email accounts have become a valuable target for cybercriminals who aim to gain access to corporate emails and steal sensitive corporate information.

Cybercriminals use a variety of methods to hack into corporate email accounts. The following are among the most common:

Cracking

This method uses brute force or dictionary attacks that aim to reveal users' passwords. A brute-force attack uses trial and error to guess user login, while a dictionary attack uses a wordlist to crack a password-protected security system.

Stealing

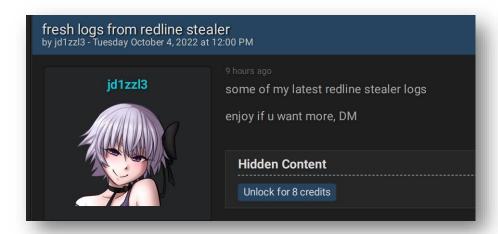
This method gains credentials directly from the user through malware or phishing campaigns. One common type of malware is <u>info-stealing trojans</u> that infect machines to harvest credentials including usernames and passwords. The stolen data and browser-saved information (known as "logs") originate from devices infected by information-stealing malware (referred to as "bots"). Commodity information stealers such as Redline, Raccoon, Mars, and Vidar are widely available for purchase on cybercrime forums. Cybercriminals can also use social-engineering tactics to steal credentials directly from the user.

Stuffing

Threat actors use data leaked from other data breaches to reuse credentials that enable them to log in to other, unrelated corporate services. Many different databases are published in the cybercrime ecosystem, from data leaked on ransomware & data leak sites, to dumps aggregated from multiple data breaches. Leaked data can include employees' and clients' emails and passwords and other person ally identifiable information. Threat actors use this valuable information to conduct other malicious activities. There are different forums that offer stolen database exchanges, like BreachForums, where cybercriminals can sell, trade, or share corporate databases.

Buying

Criminals can also simply buy corporate email credentials or logs that were compromised by other cybercriminals. Automated botnet marketplaces such as RussianMarket, TwoEasy, and Genesis allow actors to access various resources using the stolen credentials. Emails can also be offered directly on the forums, giving actors options for accessing sensitive corporate data — without having to have technical knowledge and skills.



A threat actor offers loas (web-browser information) harvested from Redline malware.

Threat actors selling email access to corporations

Over the past few years, KELA has been monitoring cybercrime forums that offer different types of access to organizations for sale, including email accounts. Actors describe multiple vectors under the word "access" — from server access to credentials to corporate email and other services and tools such as CMS, CRM, WordPress, and more. The recent rise of shops offering corporate email credentials led KELA to focus on how threat actors can steal or compromise emails.

That corporate email access is in demand among cybercriminals can be illustrated by recent activity on cybercrime forums. On February 22, 2022, a threat actor was selling different corporate emails from US companies. The actor claimed that all of them were valid and that a potential buyer could log in without two-factor authentication. Each individual email was offered for sale for USD 2.



Actor offering email access to US-based companies.

Access to government emails is also regularly sold in underground forums. On July 14, 2022, an actor offered access to a Turkish minister's email and on the same day, he claimed that the access had been sold. On July 31, 2022, KELA observed an actor selling email access to police forces based in South Asia. Each email was offered for sale for USD 80. Recently, the actor leaksmart (also known as Shadowhacker) was selling email access to US governmental entities.

Ransomware representatives are also involved in selling email accesses. On November 22, 2022, the operators of Everest ransomware were selling email access to a Canada-based aerospace manufacturing company. The access was offered for sale for USD 15,000.

Corporate email access is on sale Manufacturing company

Partners of this company: UTC Aerospace Systems Bombardier aerospace NASA And other

Production of parts for the world's leaders Aeronautics Industry. Including the production of parts for aircraft engines.

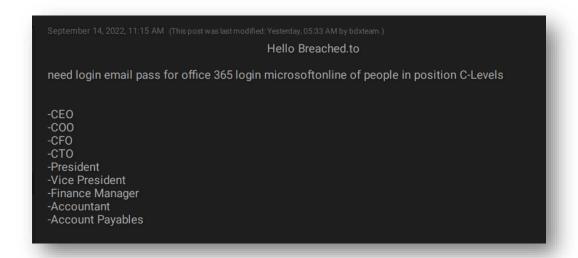
Great opportunity for further intelligence and receiving the confidential data, drawings, development in the field of aircraft industry data

Personal data of employees, department, internal documents

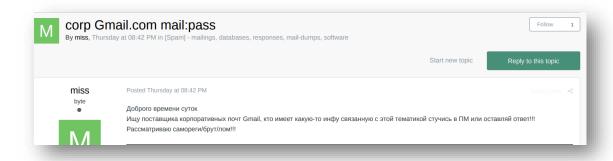
Price 15k\$ xmr

Everest is selling email access to a Canada-based aerospace company.

The demand for corporate emails is also high. On September 14, 2022, an actor was looking to buy login details of C-level executives' Microsoft Office emails. The actor detailed the relevant positions that he was interested in, including CEO, COO, CFO, CTO, finance manager, accountant, and more. Based on the essence of these positions, KELA can evaluate that the actor probably aims to carry out BEC attacks by impersonating those people to initiate an urgent wire transfer.

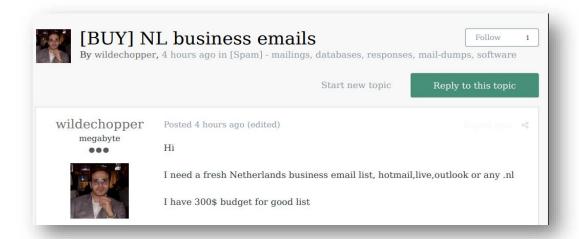


An actor is willing to buy C-level executives' Microsoft Office email credentials.

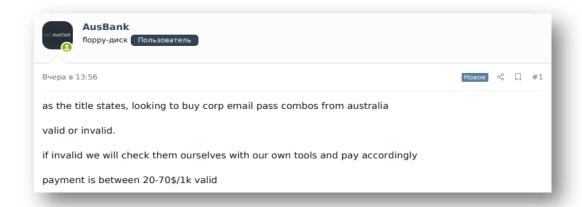


An actor is buying Gmail users' business emails.

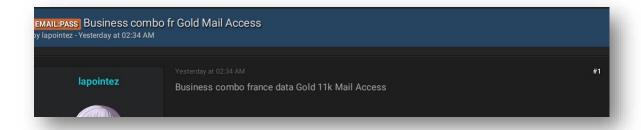
Threat actors do not only buy corporate email access to a specific company but are also looking for combolists (a text file containing a list of credentials, usually in clear text, aggregated from different data leaks) from specific countries for their attacks. For example, on August 6, 2022, an actor posted that he was interested in combolists of business emails of companies in the Netherlands and that he was willing to pay USD 300; such offers are done on a weekly basis.



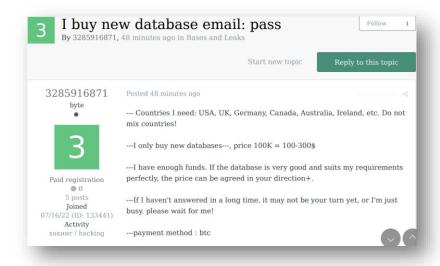
A threat actor is interested in Netherlands companies' emails.



An actor is willing to buy Australian combolists.



An actor is selling a combolist of French companies.



An actor is seeking combolists from different countries.

Automated shops offering corporate credentials

For a long time threat actors were forced to look manually for corporate email access on cybercrime forums, finding the relevant sellers and purchasing their relevant goods. Sellers were also required to post their own offers, providing attractive access and combolists for an affordable price.

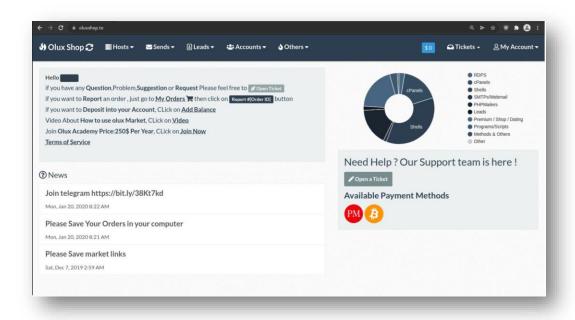
As KELA has <u>already reported</u>, the cybercrime ecosystem has been evolving quickly, focusing on servitization and sales automation. In the same way that dedicated shops appeared for credit cards and logs, new shops and markets for corporate webmails started to appear in 2019, making the work for cybercriminals easier.

Recently KELA added to its security data lake automated shops offering corporate webmails for sale. The list of shops includes **XLeet**, **Odin**, **Xmina**, and **Lufix**. The shops offer a wide range of spamming tools from hosting services (cPanels, RDP, and shells), accounts (streaming, VPN, email marketing) and leads (access to email leads and combolists), and also corporate webmails. Many of these shops provide advanced functions, such as "proofs" that webmail access indeed works. These proofs include performing a live check on the email to verify the access or showing a screenshot of the compromised account inbox. KELA's cybercrime intelligence platform collects this data and allows easy identification of the infected device and username.

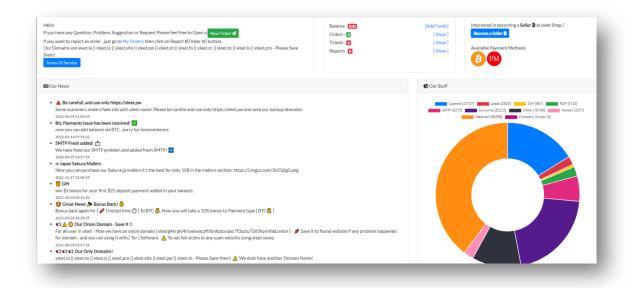
Two markets, XLeet and Odin, explain how webmail is used by cybercriminals, showing the following notice under the webmail section: "Webmail is used for social engineering hacked and not used for mass send." It likely means that it is a single compromised email account that can be used for social engineering attacks, like BEC, and not like a compromised Simple Mail Transfer Protocol (SMTP) server that is used for sending a large number of messages.



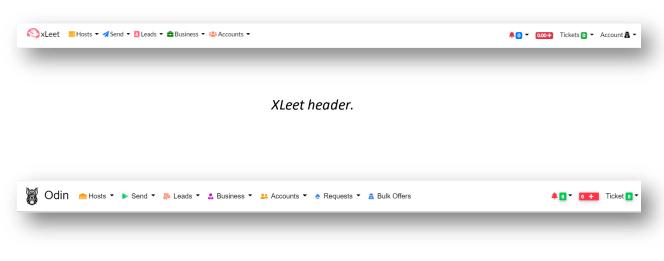
These four shops have similar features and even designs. Some actors claimed that another shop Olux and XLeet use the same source code, while on September 16, 2022, an actor claimed that he was selling Olux/XLeet "script". On July 13, 2021, an actor was looking for a web developer to create a similar website to XLeet and Olux. XLeet and Odin shops offer the same categories. Therefore, it's likely that the four shops use similar layout templates and perhaps the same source code.



Olux had its source code leaked in 2020.



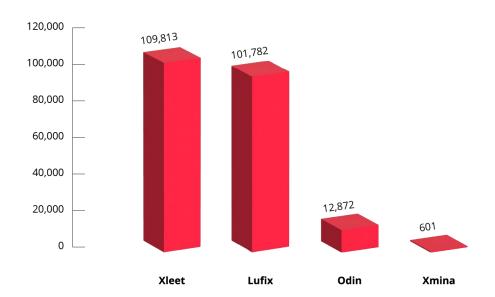
XLeet shop has a similar UI to Olux.

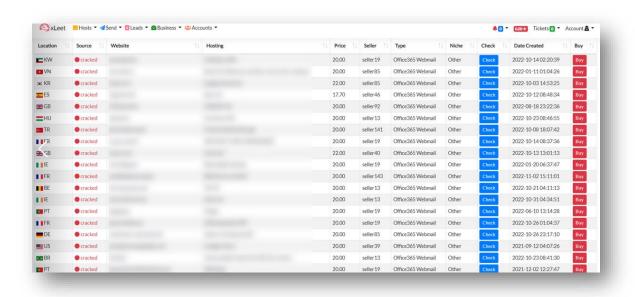


Odin header.

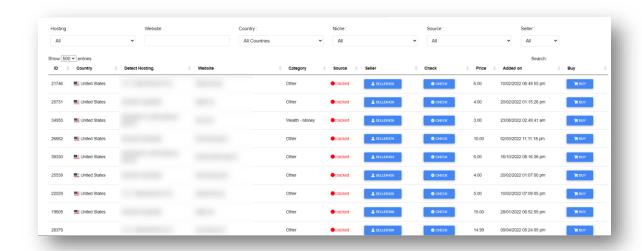
The shops allow potential buyers to sort and find emails based on specific characteristics. XLeet is the most mature forum and has been advertised on cybercrime forums since May 2019. Based on the number of credentials offered for sale, XLeet is also the biggest shop.

Number of offers per shop

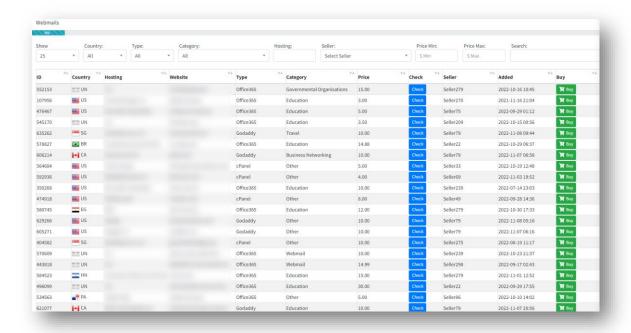




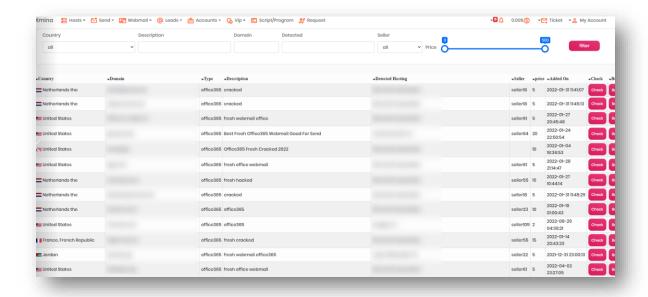
XLeet shop - webmail section



Odin shop webmail section.



Lufix shop webmail section.



Xmina shop webmail section.

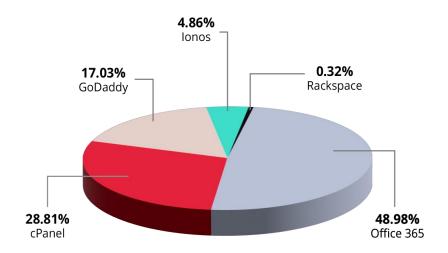
Odin and Lufix have been active since 2020 while Xmina appeared in early 2022. KELA monitored more than **225,000 webmails** listed for sale on the above shops and used this data to define the largest player and find out what metrics of compromised emails are the most important for cybercriminals.

In the researched four markets, the most targeted business email providers were Microsoft 365, GoDaddy, Rackspace, and Ionos. Some of the shops are also listed as a type of access cPanel, which allows accessing webmail using a cPanel interface.

Under the webmail section of all four markets, actors can filter their results by category:

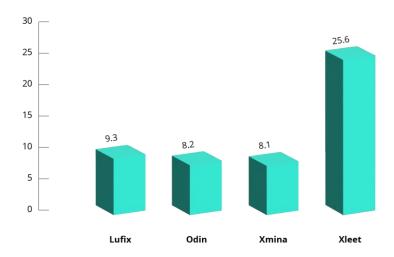
- Website of the company.
- Country. The US is the most popular location based on the emails advertised on the shops. That's because cybercriminals aim to increase their profit and therefore focus on profitable companies that will be able to pay.
- Type of business email providers. The most popular type is Microsoft Office 365, followed by cPanel, Godaddy, Ionos, and Rackspace. Users can access webmail through cPanel's interface via the email accounts category.

Email host providers

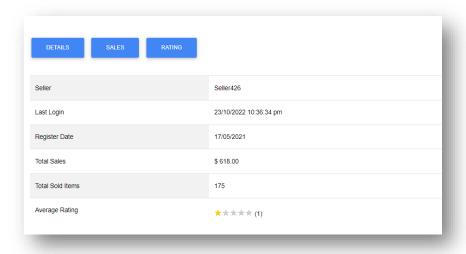


• **Price.** The average price for corporate webmail on Lufix, Odina, and Xmina is USD 8.5. However, the average price on XLeet is more than triple, at USD 25.6.

Average price per market (in USD)



- Niche. This is the business sector of the company, also called "Category" on Lufix.
- Seller. Sellers are not registered by names but by numbers: seller1, seller2, etc. Odin market provides additional information regarding the sellers. When users click on the "seller" button, they can see the total items sold, total sales, and rating of each seller. It is also possible to see the feedback that users gave to a specific seller.

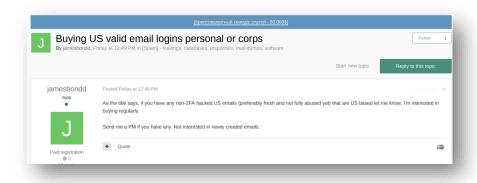


Odin shop shows the ranking of the sellers.

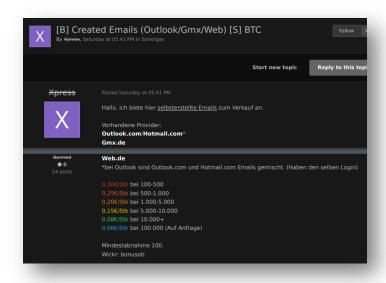
Source. The source category appears only on XLeet and Odin and shows the method used to obtain those emails. The source category includes three options, including "hacked" (or "cracked"), "logs," or "created." As much as 98% of the emails sold on XLeet were obtained through hacking/cracking.

Logs refer to the stolen data (including emails and passwords) obtained by information-stealing malware. Threat actors often sell logs on cybercrime forums specifying the details harvested from the user's web browser. The logs are also sold on dedicated markets and offered as bots containing all the browser-saved information regarding compromised accounts that were infected on one computer. On dedicated shops like XLeet, however, the logs category includes only corporate email credentials that were extracted and put on sale.

KELA believes the third category, "created," means that actors created several emails for sale with the same domain name. Such offers are also popular on cybercrime forums.



An actor is buying "hacked emails."

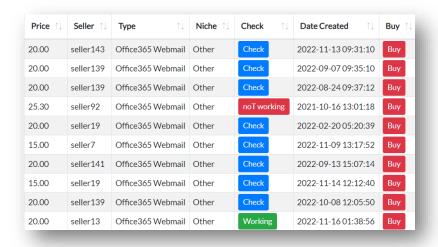


An actor provides "self-created emails" for sale.



An actor is selling bank logs and email access.

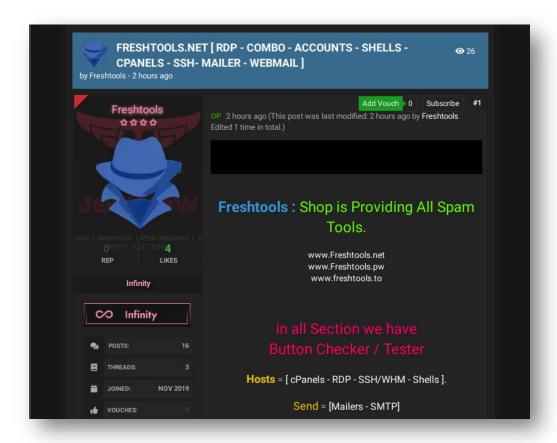
• Checking tools. There are dedicated checkers that help ensure that stolen email credentials are still valid. Based on cybercrime chatter, there are hundreds of services for checking emails (such as LetsExtract Email Studio Business, Email Checker Pro, SendBlaster Pro, etc). The shops provide a checking service to buyers before they purchase specific webmail. Once an actor is ready to buy an email, they can click the "check" button to see if the credentials work, as shown below.



Clicking the "check" button" reveals if the webmail is valid or not.

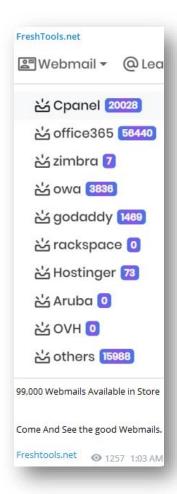
Alternative shops and Telegram channels

As described, automated shops have gained attention among cybercriminals. The re are other, smaller shops that offer similar services — webmails, SMTP, shells, RDPs, cPanel, and others. For instance, the FreshTools shop:



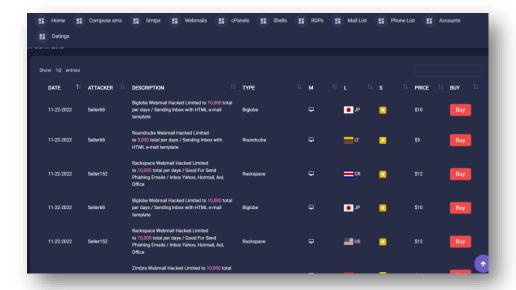
Advertisement of FreshTools on Cracked forum.

The shop also has a Telegram channel, which has more than 1000 subscribers. The common email provider is Office 365, as with other shops monitored by KELA. The admin of the channel releases updates regarding new checkers and webmails added to the shop. The Telegram channel includes a bot feature that allows buyers and sellers to get updates regarding orders, refunds, and more.



FreshTools shop regularly updates the webmail section, adding different email hosting providers.

The actor Odaysec promoted a website called HaxorID, where attackers published information about websites' defacement. The website also offers tools for sale, as well as hacked webmails. The email providers that are offered on the website include Office365, Zimbra, Godaddy, Owa, Hostinger, cPanel, and more. The price for webmail ranged from USD 5 to USD 12. The webmail section includes only 20 emails for sale.



HaxorID webmail section.

From corporate email to cyberattacks

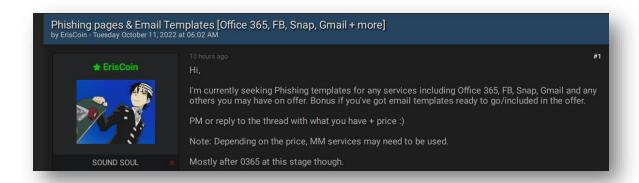
Different stakeholders are engaged in the cybercrime supply chain, aiming to exploit the email vector and gain profit. The sellers use the shops and forums to provide compromised emails. While the buyers monetize the compromised emails and deploy different cyberattacks that will yield high profits. Actors use compromised corporate email addresses for multiple attack types, from phishing to BEC and malware attacks.

The cybercrime chatter suggests that there are different methods to monetize email access. For a low-skilled actor, it's possible to become a part of the supply chain, meaning selling access on cybercrime forums. But shall an actor conduct an attack independently, there are a few possible attack types:

Monetizing email access through phishing

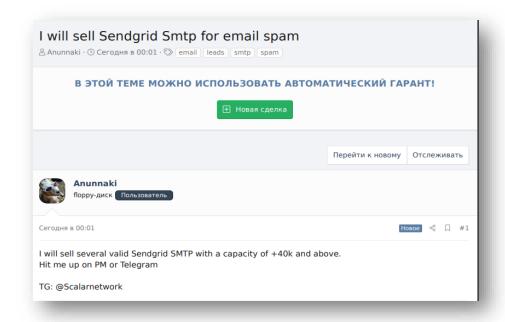
Phishing is a popular type of attack that lures the victim into revealing sensitive information such as passwords and credit card numbers. Phishing attacks are based on social engineering tactics that exploit human error and manipulate individuals' behavior to give up sensitive information to an entity they think they can trust. In this case, having access to a corporate email account abused for distributing phishing messages can benefit an attacker.

There are several tools and tutorials available on the cybercrime underground, further easing the process of phishing attacks, from dedicated templates and phishing pages to phishing kits.

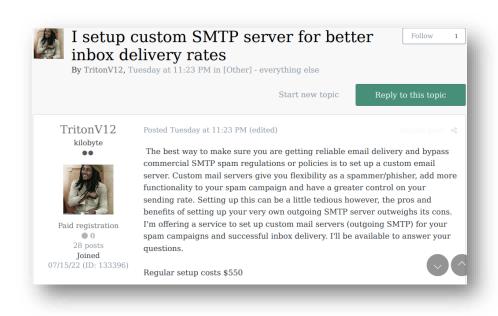


This actor is looking for phishing templates for different services including Office 365.

There are different SMTP services on cybercrime forums that claim to ease the process of phi shing attacks. Compromised SMTP servers are used to send emails to recipients with a large number of messages, using the victim's domain, which makes them appear legitimate.



An actor is offering Sendgrid SMTP for email spam.



This actor offers an SMTP server for spamming and phishing campaigns.

Combined with legitimate corporate email access bought through the aforementioned auto shops, such tools can significantly ease phishing attacks and attract more non-skilled actors.

Monetizing email access through BEC

Business Email Compromise (BEC), also known as Email Account Compromise (EAC), is an attack that tricks the victim into transferring money to an account or location that the attacker controls. In 2021, the FBI <u>found</u> that the total money stolen in BEC scams far could exceed the losses resulting from ransomware attacks. BEC attacks require less sophisticated technical skills compared to malware attacks and rely more on social engineering techniques. Therefore, their popularity has been growing in the cybercrime ecosystem because they can be extremely profitable.

Threat actors consult and share information regarding BEC attacks. The actor arch6661 posted on XSS forum asking who was involved in compromising business email. He probably was looking for a hacker who could conduct BEC attacks and steal money. The actor TESTAROSSA replied that the sum for a BEC scam that he could cash out ranges from USD 20,000 to USD 20 million.

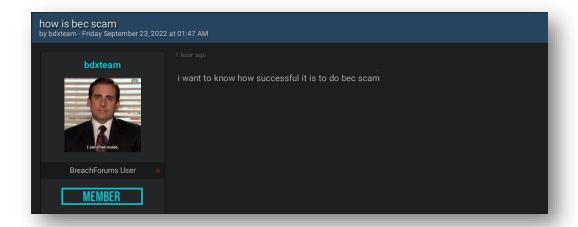
How realistic is the BEC scam idea?

"BEC = Business email compromise - you hack email and ask worker to transfer money or change banking info/invoices or send fake invoice to their customers."

Does the cabot have experience with this?

A threat actor explained the aim of a BEC attack.

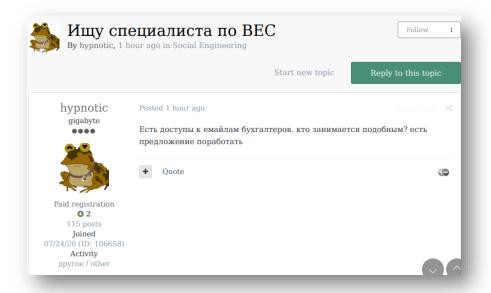
¹ The total losses in BEC attacks was USD 2.4 billion, compared with about USD 49 million for ransomware attacks. It's important to note that it's more difficult to track the financial damage of ransomware victims due to the lack of transparency regarding ransomware payments. Moreover, the FBI report was based on the voluntary complaints of just 3,729 victims, in a case where there are certainly many more victims.



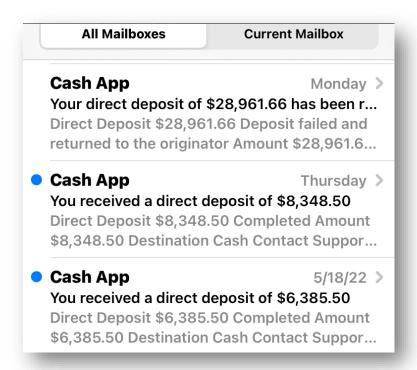


Actor 666 claimed that a successful BEC attack requires several tactics.

In another example of cooperation between cybercriminals, on July 7, 2022, a threat actor, hypnotic, posted on Exploit that he was looking for a BEC specialist who had accountants' email access. It is likely that hypnotic was interested in targeting email accounts of employees in finance and accounting positions who are authorized to have business credentials and can pay the spoofed bills. The actor LastOneLeft responded that he was working on several finance accounts and had already been able to steal a large amount of money, providing proof of concept screenshots.



An actor is looking for a BEC specialist.



An actor providing proof of successful BEC scams and the cash he has stolen

A recent <u>BEC campaign</u> targeted CEOs or CFOs of organizations with spear-phishing using adversary-in-the-middle (AiTM) techniques to hack corporate executives' Microsoft 365 accounts, even those protected by multi-factor authentication.

One BEC actor can target thousands of companies, causing losses of millions of dollars. Automated markets can ease the scale of attacks, allowing actors to target dozens of corporate emails. A cybercrime BEC group that targeted more than 50,000 victims is <u>SilverTerrier</u>. Some of its members were arrested in 2021 after scamming thousands of companies globally. According to <u>Interpol</u>, one of the threat actors obtained more than 800,000 potential victim domain credentials on his laptop.

Monetizing email access through malware

Malware attacks involve all types of malicious software, like ransomware, information stealing trojans, spyware, etc. Starting with a compromised email account cybercriminals can also use social engineering attacks as an entry vector to deploy malware on targeted networks, luring a victim into downloading a malicious payload.

Malware installation enables actors to gain easy profits. Threat actors can install info stealing trojan to steal user banking credentials and cash out money from a compromised account. Cybercriminals can also deploy a ransomware attack and demand a ransom payment. Ransomware gangs use extortion tactics to monetize operations faster, threatening the victim that they would publish valuable data if the victim does not pay the ransom.

Threat actors share information regarding different malware campaigns on cybercrime forums. On March 29, 2022, the threat actor digitalninja asked what the best way was to spread malware. The responses showed the value of email access in this supply chain. The threat actor nonce suggested as one of the methods picking a few specific targets and trying to email them individually.

Last year IKEA suffered a <u>cyberattack</u> that started from compromised IKEA email accounts. The threat actors targeted employees with internal phishing attacks using stolen reply-chain emails. The company warned its employees that the attack came via employees' email accounts as a reply to an ongoing conversation. The email contained malicious documents capable of installing malware on recipients' devices.

Awareness is key

Cybercriminals are constantly looking for new ways to conduct cyberattacks that will generate high sums of money. In February 2022, researchers found that more organizations (78%) suffered email-based ransomware attacks, closely followed by BEC attacks (77%) The findings show that the email vector is favored by cybercriminals, who prefer to manipulate human behavior rather than technical vulnerabilities. It seems that compromised corporate emails are valuable goods that can easily be monetized for several attacks from phishing, BEC, and different malware attacks.

The cybercrime ecosystem focuses on servitization and sales automation. As a result, dedicated shops will flourish. Shops like XLeet, Odin, Xmina, and Lufix offer corporate webmails, and make cybercriminals' lives easier, allowing them to buy a large number of emails at an affordable price, and then targeting dozens of victims.

Organizations should ensure that they continually:

- Train and educate all employees, customers, and vendors on safely using their credentials and personal information online. This cyber-training should specifically include how to identify suspicious activities, such as possible scam emails or unusual requests from unauthorized individuals or email addresses. The human factor plays a significant role in an organization's cybersecurity. The larger the organization, the bigger the chance of threats. Therefore, creating such mandatory cybersecurity training across all these organizations would significantly reduce the chances that they would be compromised because of an employee's mistake.
- Enforce a periodic password change for all services and platforms among the organization's employees and customers. The password should be different from any other passwords previously or currently utilized by the compromised users.

• Monitor the cybercrime landscape to discover new trends and threats. Attackers develop methods to commit scam attacks. Knowing cybercriminals' tactics and being familiar with new cybercrime marketplaces allow companies to address this evolving threat more effectively and decrease financial losses.

KELA's monitoring of different shops uncovered compromised corporate webmails, providing real-time intelligence into cybercrime activities, allowing companies to identify compromised accounts and prevent cyberattacks.

<u>Try KELA's cybercrime intelligence platform for free to uncover threats to your organizaton within</u> minutes