FORTRA

GUIDE *(Agari)*

Agari + Microsoft Office 365

Next-Generation Security for Cloud Email

Email is undergoing a fundamental transformation as organizations worldwide shift more office productivity and business applications to the cloud. With around 95%[1] of the Fortune 500 using Office 365, Microsoft arguably leads this movement.

But for all of its convenience and utility, email has always been highly vulnerable to cyberattacks on multiple fronts, providing fertile grounds for the email security market to grow at an estimated 22% annually, putting it on track to reach around $18B by 2023.[2] Organizations are spending billions to secure their email, but is all that money being invested wisely?

The secure email gateway (SEG) represents a sizable chunk of that spend. Unfortunately the SEG is no match for modern identity-based attacks that easily evade signature-based detection. As a point of proof—today around 94% of data breaches originate from email,[3] not to mention countless fraud losses from schemes including spear phishing, executive and vendor impersonation, ransomware, and account takeovers.

Recognizing that email security is an organizational priority, about 60% of large organizations will have comprehensive security awareness training in place by 2022.[4] But, as security training becomes the norm, SOC teams already dealing with an overall cybersecurity skills shortage are becoming inundated with employee-reported phishing incidents—of which around 68% globally are ultimately determined to be false positives.[5]

The email security market will grow an estimated 22% annually, putting it on track to reach around $18B by 2023

As they migrate to Office 365, more organizations are recognizing that current investments in email security and phishing response deserve a closer look. While legacy email security vendors continue to shore up the secure email gateway and the financial annuity it represents to them, more organizations are embracing the reality that current email security architectures are fundamentally inadequate.

Cloud-first organizations are ditching the SEG and taking advantage of the enriched security features in Microsoft Office 365 and the new Agari Secure Email Cloud™ architecture, a combined solution designed to stop malicious email attacks that often come without malware or other recognizable payloads. They have found that the SEG impedes the native security controls of Office 365 by obscuring the email header and feedback loop. By removing the SEG, they have improved security, reduced costs and enabled business agility.

This new approach blocks not only traditional spam, virus, and malware, but also the next generation of identity deception attacks. It secures the corporate sending domain from unauthorized use. And, in a significant departure from legacy security controls, it detects threats moving laterally across the organization and remediates newly identified threats that have made it to the inbox by evading initial detection or that weaponized post-delivery.

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Introduction to a Cloud-First World

The Migration of Workloads and Security to the Cloud

When Marc Benioff launched the "no software" movement on the eve of the dot-com bust in 1999, there was little indication of the tectonic shift to come across the business IT landscape.

While "Googled" became a word, "elastic cloud" compute and storage became the norm and organizations turned to Infrastructure-as-a-Service (IaaS) as prices for cloud hosting dropped precipitously. Organizations worldwide could now place workers and facilities just about anywhere around the globe and adjust IT strategy and workloads on the fly.

Platform-as-a-Service (PaaS) has since emerged as a compelling way to free organizations from decades of layered on-premises systems, improve security, and deliver integrated services.

As the dust began to settle, what started off as an ingenious way to eliminate IT capital expenditures, alleviate overhead, and accelerate software deployment morphed into a new way of business.

IaaS, PaaS and Software-as-a-Service (SaaS) turned out to be ideal enablers for an increasingly virtual and mobile workforce. Equipped with the ability to avoid up-front time and cost and to quickly phase out inefficient services, business agility improved.

Today, just under one-third of overall corporate IT budget goes to cloud services, and the industry is on track to reach about $513B by 2022.[6]

With close to 200M users,7 perhaps no SaaS solution illustrates this better than Microsoft Office 365, which didn't just move to the cloud, but also reinvented the office productivity suite and became more resilient to cyber attacks. Now, there are compelling business reasons to move email security to the cloud as well.

Examining Efficacy and Risk of Traditional Email Security Controls

Persistent Security Gaps in Legacy Systems

Given the substantial investments in email security infrastructure over the past few decades, the current state of email security is surprisingly dismal.

An estimated 22.9 phishing attacks are launched every minute of the day, many of which result in a data breach. That data breach costs an average $8.19 million per incident in the United States5, not to mention the long-term damage to brand reputation and regulatory fines.

Executive spoofing has become commonplace because the core email architecture allows end users (instead of the network) to specify the sending identity. Currently, only around 13% of the Fortune 500 have fully protected their corporate domains5, leading not only to fake messages from the C-suite, but similar attacks including brand impersonation, partner invoice scams, and employee payroll scams.

Even with domains protected, workers can be attacked through techniques such as display name deception and look-alike domains. Email-based scams utilizing these techniques can lead to email account takeover (ATO), which allows cybercriminals to pose as the individual to divert money, steal information, and perform other malicious activities. Making matters worse, new single sign-on (SSO) capabilities can exacerbate the incident, leaving sensitive documents, confidential information, and collaboration tools exposed to unauthorized access.

ATO-based attacks are especially dangerous because they are notoriously difficult to detect and serve as a gateway to lateral movement as threat actors glean important context to compromise additional accounts, escalate their privileges, and gain access to other systems,

all of which can result in a data breach across the extended enterprise. We explore a particularly virulent attack modality called vendor email compromise (VEC) in our recent Silent Starling threat dossier.

Malware, virus, and Trojan attacks are still commonplace, but with effective defenses having moved into Microsoft Office 365, attacks have shifted from targeting network and infrastructure to targeting core human emotions of fear, curiosity, and anxiety. These social engineering attacks come without a recognizable payload, so they typically bypass the SEG with plain-text emails that do not utilize the traditional techniques of malicious URLs and attachments.

For its part, the SEG checks incoming email only on receipt and generally does not re-check the inbox for latent threats that evaded detection or that weaponized post-delivery. The legacy protection also only protects against external attacks as email flows into the organization, completely ignoring the email flowing across the organization.

Moving Email Security Forward

The Business Imperative for a Modern Security Architecture

To supplement the protection of the SEG, organizations have turned en masse to phishing simulation training. Currently around 98% of organizations enable employee-reported phishing and about 88% use phishing simulation to train employees.5 But the math is against them.

SOC teams already dealing with a widespread cyber skills shortage manage close to 33,000 reported phishing incidents on average each year. With a false positive rate of 68% globally and around 6.4 hours to investigate each one5, they simply can't keep up. Exploits can take months to detect, while exfiltration of sensitive data can happen in a matter of hours.

Phishing training can help, but organizations can still expect around a 3% failure rate where employees are unable to detect a phish email.8 Unfortunately, it takes only one successful attack to do serious damage. It turns out that aside from the organizational drag that comes from mass distrust of the inbox, putting employees in the direct line of defense against email-based cyber attacks is a somewhat risky proposition, particularly given the existential threats a major breach can represent.

But as ineffective as the SEG tends to be against advanced email attacks, it also presents a significant obstacle to cloud-first strategies. By placing the SEG "inline" as email passes through, the SEG obfuscates the native security features of Exchange Online Protection, preventing Office 365 from optimal function. It changes the email header information viewable by Office 365 and the feedback loop from users goes directly to the SEG, leaving Office 365 none the wiser from user-reported phishing attempts.

All the while, the SEG requires maintenance, training, and support that consumes valuable SOC team resources. Taken together, the cost and overhead of the SEG, the systemic risks to the business plan from attacks that evade it, and the negative impact it has on native security controls built into Microsoft Office 365, the SEG represents a significant hindrance to organizations looking to drive higher labor productivity and worker output.

This, of course, is a big part of the reason organizations adopt Office 365 in the first place and typically as part of their digital transformation strategies. Simplifying IT infrastructure while providing workers new and improved ways to communicate, collaborate, and perform their job functions both safely and securely is a critical objective for organizations looking to attract and retain the best talent as the new generations—the digital natives— enter the workforce.

And while Office 365 provides a level of security closely resembling what organizations would find in a traditional SEG, including the ability to detonate and identify actively malicious payloads with Microsoft Phishing Defense™, additional protections against the most dangerous threats are needed to safeguard the organization from advanced threats such as business email compromise, executive spoofing, and account takeovers.

The New Paradigm for Email Security

Cloud-Based Security for a Cloud-First World

An evolution of the legacy secure email gateway, the next-generation Secure Email Cloud is purposefully built for the cloud-first world and differs in several remarkable ways. Because it's a cloud-native SaaS application and compliments the built-in security features of Microsoft Office 365, it offers several key enhancements.

Many of the legacy features of the SEG are already pre-built into Microsoft Office 365 via Exchange Online Protection (EOP) and the optional Phishing Defense. In fact, Office 365 provides support for all areas that have been traditionally protected by the SEG: pre-content filter based control, integrated antispam, integrated antivirus, attachment sandboxing, URL analysis, and data loss prevention.

Designed to assess incoming emails by analyzing content and infrastructure reputation, these platform-native controls are proving essential to ferreting out spam, malicious URLs and malware, certain keywords, or a high volume of attacks from a single IP. In fact, according to a recent Gartner report, anti-malware and anti-spam features built into Office 365 are now being recognized as best in class.[9]

For those areas not fully protected by native functionality, the Microsoft Office 365 architecture offers APIs such as the Microsoft Security Graph that enable complementary security solutions to integrate seamlessly. This is where many organizations enable the secure email gateway, but because SEGs were designed two decades ago, their architecture nearly always requires that it be inline in the mail flow, slowing down mail delivery and introducing a point of failure. Beyond the mail deliverability and increased risk of downtime, inline SEG architecture actually hinders the effectiveness of the Microsoft Office 365 security by modifying header data before it reaches Exchange Online Protection or Phishing Defense.

Unfortunately, cybercriminals rely on finding new and innovative ways to bypass the filters organizations put into place to protect against them, which is why they have recently turned to identity-based deception. Different from traditional email attacks, this next-generation of email attacks rely on impersonation and plain-text emails to bypass the filters set against the attacks of the past.

This is where the Agari Secure Email Cloud augments the controls set by Exchange Online Protection to prevent advanced attacks on Microsoft Office 365 environments. Designed specifically to identify when a message is malicious based on identity and models of trusted behavior rather than content, Agari prevents the most dangerous types of attacks from ever reaching user inboxes. And for those emails that evade initial detection or weaponize after delivery, Agari provides options to automatically remove emails from user inboxes, effectively preventing users from opening the email or clicking on malicious links.

Using Artificial Intelligence to Protect Email

Modeling the Good to Prevent the Bad

Malicious emails that use identity deception continue to bypass the legacy SEG and the native controls of Office 365 because they are notoriously difficult to detect. Consisting of only a few words, emails reach the targeted end user because there is no malicious content to identify. Those security systems looking for previously recognized signatures of malicious content can find nothing wrong with the email. Once the email passes through security to the inbox, the scam becomes easy to perpetuate. Cybercriminals count on the human emotions of fear, curiosity, and anxiety to convince the recipient to reply. Once engaged in a conversation, the scammer simply needs to ask for a wire transfer, gift card purchase, or payroll diversion to complete their scam.

A way to prevent these attacks from reaching the inbox comes from understanding the perceived identity of the sender and the relationship between sender and recipient. To understand identities and relationships between senders, machine learning models

identity graph relationships and behavioral patterns between individuals, businesses, services, and domains using hundreds of different characteristics at a global scale.

Using these machine learning models, automation, and expert human decision-making informed by massive sets of labeled data, the technology can score each message for convergence or divergence from historic patterns. In this way, the analysis identifies emails as conforming to normal "good" patterns and is thus a legitimate email. Those that diverge beyond a given threshold from established patterns are then potentially malicious or "bad"—no matter whether they contain malicious attachments or something as simple as five words. Instead of looking for the proverbial needle in a haystack, this innovative approach removes the hay to reveal the needle. It models the good to detect the bad.

This new approach gets more effective with every email analyzed. As a result, it effectively transitions the email security paradigm from one that was designed to address isolated events to one that continuously protects the organization against evolving email threats, as quickly as they emerge. And because this technology is always on, it becomes possible to continuously rescore messages and remove those that evaded initial detection from inboxes.

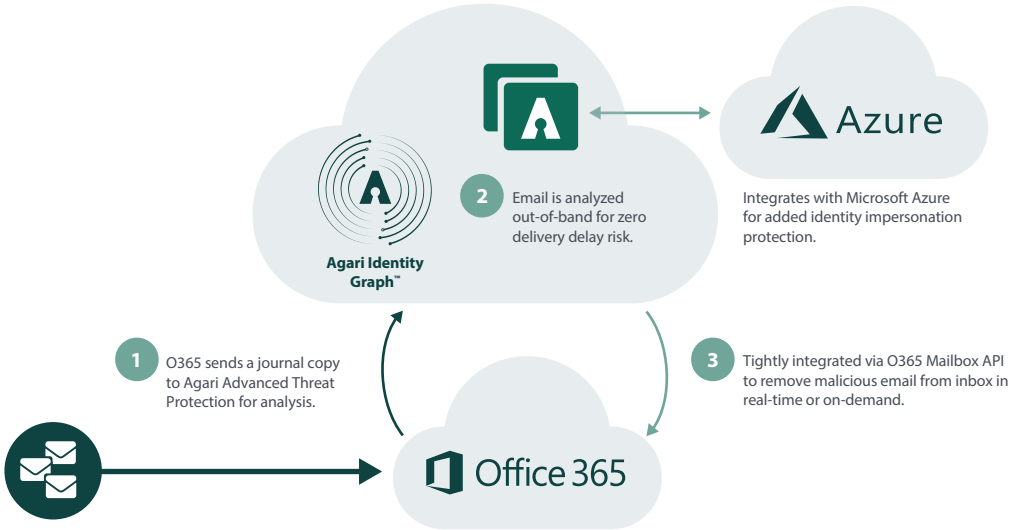
So while Microsoft Office 365 stops the vast majority of the most common types of attacks, Agari provides the defense needed to stop the most dangerous and sophisticated attacks. With this combination of the Agari Secure Email Cloud and Microsoft Office 365, email attacks are stopped with 99.9% efficacy—enabling users to trust their inbox and SOC teams to quickly and efficiently identify and respond to emerging threats.

Microsoft Office 365 + Agari Secure Email Cloud

The Next Generation of Advanced Protection for Cloud Email

The next-generation approach to email security protects against new and advanced attacks better than its predecessors, but it also encompasses additional features not typically present in a SEG. With the ability to authenticate legitimate sender domains, inspect email flowing laterally across the organization, and recheck the inbox to detect and remediate latent threats, the next-generation of email security is designed for modern organizations undergoing a digital transformation.

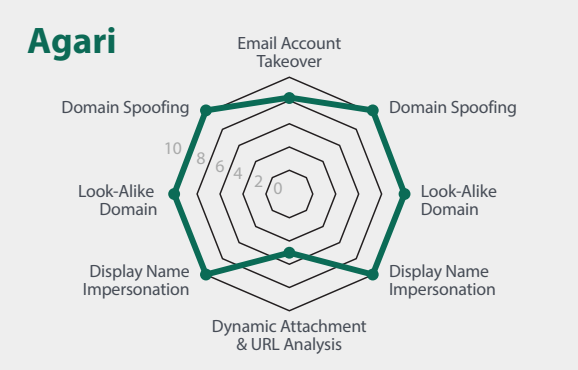
In either a cloud-only or hybrid environment, the Agari Secure Email Cloud uses secure APIs to ensure faster mail delivery and prevent downtime. This ensures that the native Microsoft Office 365 security controls are not blinded by a legacy inline SEG architecture.

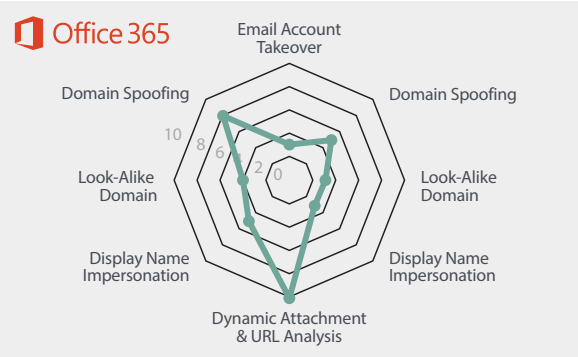


This represents a significant departure from simply tacking on additional products and feature sets to the traditional SEG in what can best be described as a band-aid approach. Instead the new Secure Email Cloud transforms email security from a tactical, event-based approach to a strategic, continuous process that learns from evolving threats to block 99.9% of all advanced attacks and helps SOC teams reduce detection and remediation time by up to 95%.[3]

Advanced Email Security Coverage Charts

Agari, Microsoft, and Combined Solutions





To protect corporate domains from being spoofed, Agari provides DMARC email authentication and helps organizations manage all third-party senders to reach enforcement at p=reject as quickly as possible. This prevents unauthenticated emails from reaching the inboxes of customers, partners, and employees.

This first step in securing the email environment provides the minimum level of protection to prevent brand abuse and stop cybercriminals from tricking unsuspecting customers and employees. In fact, Microsoft itself uses Agari to protect its domains such as microsoft.com, outlook.com, and office365.com.

For the business email compromise scams and account takeover-based threats that use display name deception or look-alike domains, Agari augments the Microsoft security controls to catch additional identity deception-based threats. Using a highly-innovative identity graph to model trust relationships, the Agari Secure Email Cloud detects malicious emails by understanding identities and relationships between sender and recipient. In this way, Agari can adjust to evolving threats and prevent them from reaching inboxes.

And unlike other systems, Agari not only protects against emails coming into the organization (AKA north-south traffic), but also continuously monitors and secures the emails traveling within an organization from employee to employee (AKA east-west traffic) to quickly discover

if an internal account has been compromised. Part of the integrated solution for preventing advanced attacks, this key capability protects against bogus employee-to-employee emails.

Taking email security one step further, the Agari Secure Email Cloud works directly with Office 365 to continuously monitor all inboxes within an organization, detecting latent threats as soon as new threat intelligence is discovered. When new threats are reported along with indicators of compromise through the global Agari SOC Network™, all inboxes protected by Agari are inspected for those threats. SOC analysts are then notified via a convenient mobile app of any threats detected and can then be deleted from all affected inboxes with a few clicks.

For phishing incidents that need closer inspection, Agari Phishing Response™ helps prioritize, triage, investigate and remediate threats in a matter of minutes, so cybercriminals never have the opportunity to redirect money or exfiltrate data. This has been shown to decrease phishing response time by up to 95%.

Combining Agari with Microsoft Office 365 provides next-generation security to protect against new and evolving email attacks and security issues while simultaneously eliminating the need for legacy infrastructure. As cybercriminals become more adept and discover new attack tactics, Microsoft and Agari continue to work together to protect your inbox from evolving threats—increasing confidence in your email ecosystem and saving you time and money.

Conclusion

Moving into the Next Generation of Email Security

After almost five decades in use, the architecture supporting enterprise email has been fundamentally redesigned and moved to the cloud. Microsoft Office 365 sits at the forefront of this movement.

In turn, the legacy Secure Email Gateway has been commoditized, with key signature-based defenses moving into Microsoft 365. The Secure Email Cloud augments these native security controls to protect against modern, identity-based attacks.

Agari Secure Email Cloud works with Exchange Online Protection and Phishing Defense—not against them—to prevent business email compromise, domain spoofing, spear phishing, account takeovers, and all forms of identity-based email attacks.

Microsoft Office 365 and the Agari Secure Email Cloud are proven to work together to help organizations stay safe, reduce phishing incident investigative workloads, and provide premium protection of their email environment so employees, partners, and customers can trust their inboxes.

Two-thirds of Agari customers who use Office 365 have eliminated their SEG entirely and now rely on the native security controls built into the two platforms for complete email security protection. This includes leading organizations such as Informatica, Honeywell, and even Microsoft itself.

Organizations that have moved to Office 365 as well as those with hybrid deployments can rely on the same protections while eliminating the cost, overhead and complexity the SEG introduces to their business.

These protections differs in many ways from traditional legacy protections and include the ability to secure sending domains through DMARC email authentication, continuously protect against evolving identity-based attacks, automate remediation workflows for phishing incidents, and guard against email account takeover-based attacks.

This new paradigm of email security reduces the dependence on phishing training to defend organizations against the costly and time-consuming business disruption caused by modern attacks. It also simplifies the security infrastructure, reduces capital expenditures, and overhead while better equipping organizations to achieve the intended business benefits from their cloud deployment.

Appendix

Comparison of Microsoft O365 + Agari and the Traditional Secure Email Gateway

Advanced Threat & Impersonation Protection	O365 + Agari	Traditional SEG
Attachment Sandboxing		
URL Rewriting and Live Analysis		
Behavioral Relationship Analysis		
Display Name Impersonation Prevention (Own Users & Brand)		
Display Name Impersonation Prevention (External Users & Brand)		
Look-alike/Cousin Domain Spoofing (Own Brand)		
Look-alike/Cousin Domain Spoofing (External Brands)		
Domain Spoofing Prevention (Own Brands)		
Domain Spoofing Prevention (External Brands)		
Account Takeover Attack Prevention (Internal & External)		

Email Authentication	O365 + Agari	Traditional SEG
SPF, DKIM, DMARC Builder		
Validation of RUA & RUF Data Feeds		
Automated Sender Discovery & Inventory Management		
Hosted DMARC, SPF, & DKIM Records		
Workflow-Driven Authentication Configuration Management		
Native Look-alike/Cousin Domain and Non-Authorized IP Threat Intelligence		
API Access to Threat Intelligence		
Takedown Vendor Integration Support		

Phishing Response	O365 + Agari	Traditional SEG
Employee Incident Reporting		
Automated Triage (ID, Classify, Prioritize)		
Incident Management Workflow		
Incident Resolution Time Tracking		
Integrated Forensic Investigation and Analysis		
Automated Message Removal from O365 Inbox		
Closed-Loop Management Reporting		
Continuous Latent Threat Detection / Response		

Note: Graphic represents Agari SEC with Microsoft Office 365 E5.

Reporting & Configuration	O365 + Agari	Traditional SEG
Identity Access Management with Role-Based Access	●	●
Automated User and Administration Notification	●	●
Real-time Removal of Unwanted and Malicious Email	●	●
'Claw Back' Removal of Unwanted and Malicious Email	●	◔
Full Support of Azure Active Directory for Policy and Impersonation Control	●	◑
Executive Dashboard Overview	●	●
Threat Disposition Reporting	●	
Real Time Threat Reporting	●	
Pre-Built Email Filtering Reports	●	●
Advanced Message Search	●	●
ROI-based Reporting	●	
Impersonation-Based Threat Taxonomy Dashboard with Forensic Drill Down	●	
Out-of-Band Deployment	●	

Compliance and Email Hygiene	O365 + Agari	Traditional SEG
Antivirus Protection	●	●
Antispam Protection	●	●
Data Loss Prevention	●	●
Email Archiving	●	●
Sender/IP Reputation Analysis	●	●
TLS Encryption	●	●
Email Message Encryption	●	●
SPF, DMARC, DKIM Inbound Validation	●	●
Content Filtering Control	●	●
Sharepoint, One Drive and MSFT Teams File Scanning	●	

Agari Microsoft Both

Note: Graphic represents Agari SEC with Microsoft Office 365 E5.

Discover How Agari Can Improve Your Current Email Security Infrastructure

As your last line of defense against advanced email attacks, Agari stops attacks that bypass other technologies—protecting employees and customers, while also enabling phishing response teams to quickly analyze and respond to targeted attacks. Try our simulated demo, or get a free trial today to discover how much money you can save by adding Agari to your email security environment.

www.agari.com/trial

Calculate the ROI of Implementing Agari

Discover how much money you can save by adding Agari to your email security environment with our custom ROI analyzer.

www.agari.com/roi

1. Microsoft CEO Satya Nadella's 6 Key Statements at Inspire 2019
2. Email Security Market Work US $18 Billion by 2023 at 22% CAGR ...
3. Agari Research
4. Gartner Magic Quadrant for Security Awareness Computer-Based Training
5. Agari Q4'19 Email Fraud and Identity Deception Trends report
6. IDG 2018 Cloud Computing Survey, CBInsights Microsoft Strategy Teardown ...
7. Office365itpros: Office 365 Reaches 180 Million Monthly Active Users
8. Verizon 2019 Data Breach Investigations Report
9. Gartner Solutions Comparison for Nine Secure Email Gateways, 18 January 2019

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