Insights Report

Dropbox Exploits

Resurgence of Compromised Dropbox-Hosted PDF Phishing & Malware Campaigns

mailguard

Executive Summary

In 2020, MailGuard first detected large-scale phishing and malware distribution campaigns leveraging compromised **Dropbox** accounts to send seemingly legitimate emails with links to PDF attachments.

Those **PDFs, hosted on Dropbox, contained embedded URLs pointing to credential-harvesting and malware sites**.

Despite initial takedowns, this tactic re-emerged in late 2024, and many leading security providers still fail to block these messages because they originate from Dropbox's own infrastructure and host benign-looking PDF files.

Email is the starting point for 91% of cyberattacks.

Source: Microsoft.com

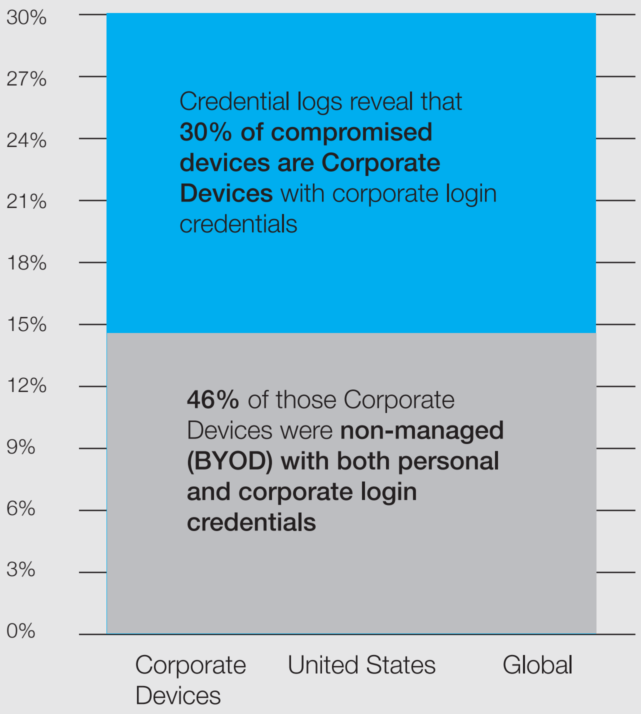
References:
https://www.microsoft.com/en-au/security/business/security-101/what-is-business-email-compromise-bec

Key Threat Insight - Dropbox

How Compromised Dropbox Drives Phishing & Malware Delivery

- **Legitimate Sender Infrastructure:** Emails are dispatched from genuine @dropbox.com addresses or via OAuth-authenticated SMTP, bypassing SPF/DKIM/DMARC checks and trusted-sender filters.
- **PDF Trojan Horse:** The message body links to a PDF on Dropbox (e.g., an "Invoice" or "Proposal"); opening the PDF reveals embedded HTML links or JavaScript that redirect to external phishing portals or initiate drive-by downloads.
- **Persistent Reappearance:** After peak activity in mid-2020, the same technique resurfaced in organizations' inboxes during Q4 2024, demonstrating that many email defences still allow Dropbox-hosted attachments through.

Compromised Devices Based on Credential Log Analysis



Verizon Data Breach Investigation Report

References:
https://www.verizon.com/business/resources/reports/dbir/#2025DBIRNR

Key Threat Insight - Dropbox

Attack Method

1. Account Compromise

a. Cybercriminals phish or brute-force into Dropbox accounts, often those used for business document sharing.

2. Message Crafting & Dispatch

a. Using the compromised account's SMTP or Dropbox's "Share link" API, attackers send emails with genuine dropbox.com links and branding.

b. Subjects mimic urgent business com munications: "Project Proposal Attached," "Invoice #12345 – Expires in 24 Hours," etc.

3. PDF Payload Delivery

a. The shared PDF appears innocuous but embeds hidden hyperlinks (or JavaScript redirects) to phishing sites or malware-hosting servers.

b. Recipients click through believing they are accessing a safe document.

4. Secondary Exploit & Persistence

a. Phishing portals harvest Office 365, Dropbox, or corporate VPN credentials.

b. Malware sites deliver remote-access trojans, info-stealers, or ransomware via silent downloads.

Key Threat Insight - Dropbox

Why It's So Effective

- **Trusted Hosting & Sender:** Dropbox's high-reputation IP ranges and @dropbox.com domains evade allow-lists and authentication checks.
- **Content Camouflage:** A PDF attachment on a trusted link isn't typically scanned by most filters, and static analysis tools often ignore file-sharing domains.
- **User Expectation:** Remote workers routinely exchange PDFs via Dropbox, especially post-2020. Urgent wording ("file will expire in 24 hours") drives quick clicks.

> *"Credential exfiltration through Dropbox-hosted PDFs is particularly insidious: By exploiting OAuth-authenticated SMTP and Dropbox's share-link API, adversaries weaponize high-reputation infrastructure to deliver PDF payloads that embed stealthy phishing and malware redirects, undermining traditional email-authentication and sandbox defences."*
>
> **— Anwar Ibrahim, CTO, MailGuard**

Technical Deep Dive

SMTP & API Abuse

- Attackers leverage the legitimate account's OAuth token to send mail via smtp.dropbox.com or through the Dropbox API's share endpoint.

PDF Link Embedding

- PDFs contain <a> tags redirecting to shortened URLs (bit.ly, tinyurl) that forward to malicious payloads.
- Some use embedded JavaScript in PDF annotations to auto-launch external links upon opening.

Defence Evasion

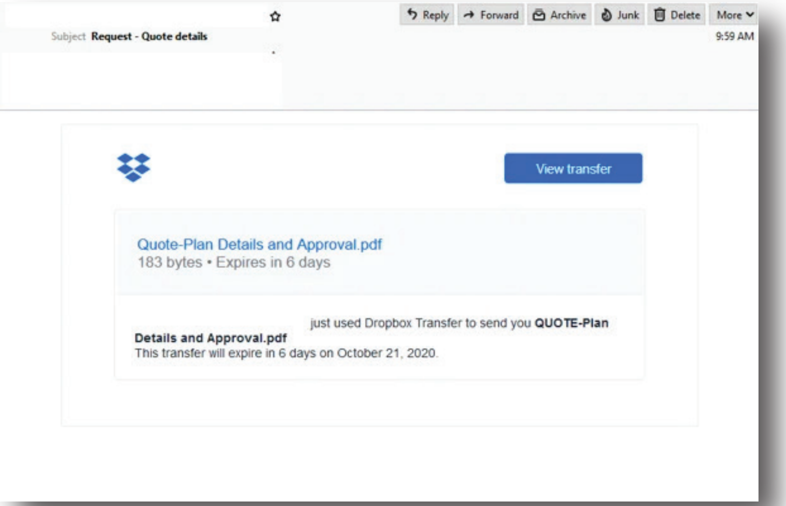
- Static URL-based detectors skip dropboxusercontent.com links.
- Sandboxing solutions often whitelist known cloud-storage endpoints.

Re-emergence Mechanics

- In late 2024, threat actors automated account takeovers via credential stuffing, scaling the PDF-drop method across thousands of business users with minimal detection.

> *"Our forensic analyses show these PDFs use multi-stage redirect chains, often via URL shorteners, before landing on malware payloads. Each stage is designed to evade both static and dynamic scanning engines."*
>
> **— Prathik Chandrashekar, Head of Engineering, MailGuard**

Dropbox Compromise Example 1

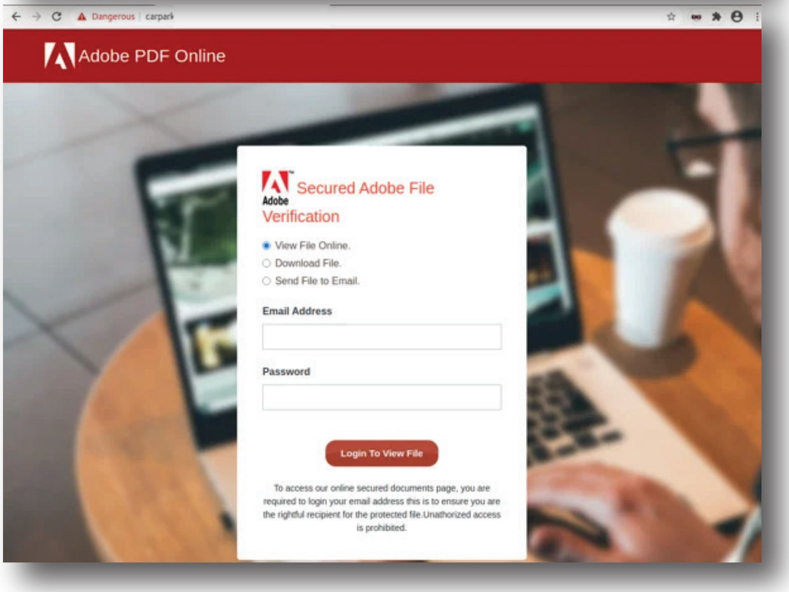


Subject Request - Quote details

9:59 AM

Quote-Plan Details and Approval.pdf
183 bytes • Expires in 6 days

just used Dropbox Transfer to send you QUOTE-Plan Details and Approval.pdf
This transfer will expire in 6 days on October 21, 2020.



Secured Adobe File Verification

● View File Online.
○ Download File.
○ Send File to Email.

Email Address

Password

To access our online secured documents page, you are required to login your email address this is to ensure you are the rightful recipient for the protected file.Unathorized access is prohibited.

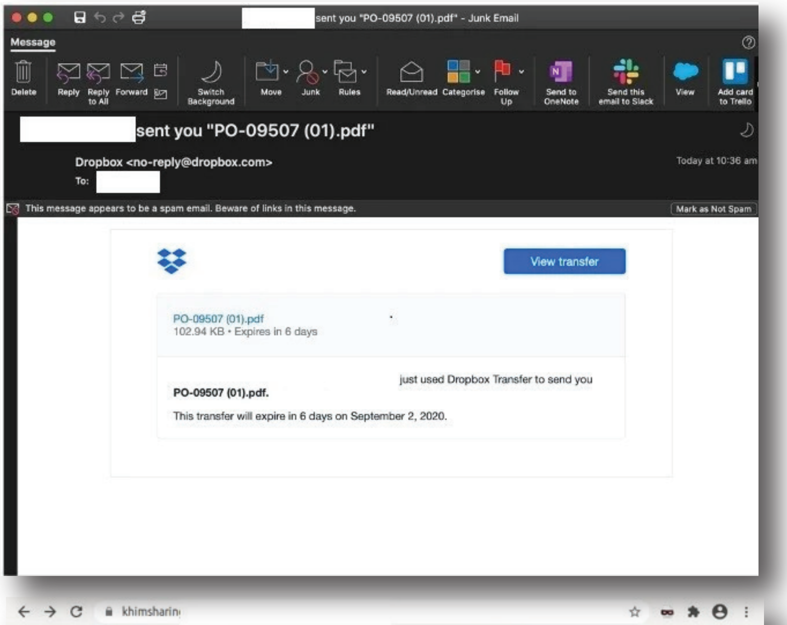
In this first example, a simple subject line of ‘**Request - Quote details’** aims to spike the curiosity of the recipient.

Carrying **Dropbox** brand elements, the email features a link to a **‘Quote-Plan Details and Approval’** PDF document.

Clicking the **‘View Transfer’** button leads users to a phishing page impersonating **Adobe**, that **aims to steal the users email and password**.

After entering credentials and clicking **‘Login to View File’**, the PDF document may also be a **malicious download**.

Dropbox Compromise Example 2



[redacted] sent you "PO-09507 (01).pdf" - Junk Email

[redacted] sent you "PO-09507 (01).pdf"

Dropbox <no-reply@dropbox.com>

To: [redacted]

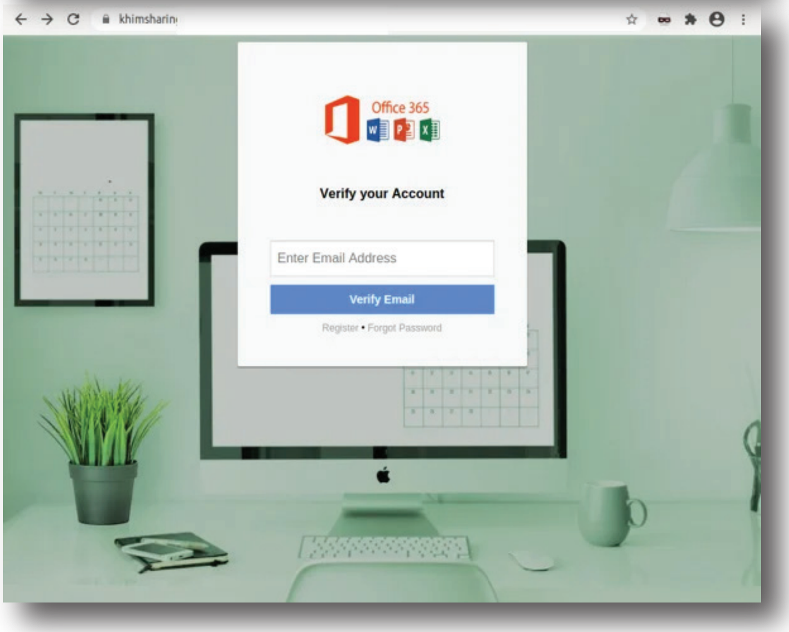
Today at 10:36 am

This message appears to be a spam email. Beware of links in this message.

PO-09507 (01).pdf
102.94 KB • Expires in 6 days

just used Dropbox Transfer to send you **PO-09507 (01).pdf.**

This transfer will expire in 6 days on September 2, 2020.



Verify your Account

Enter Email Address

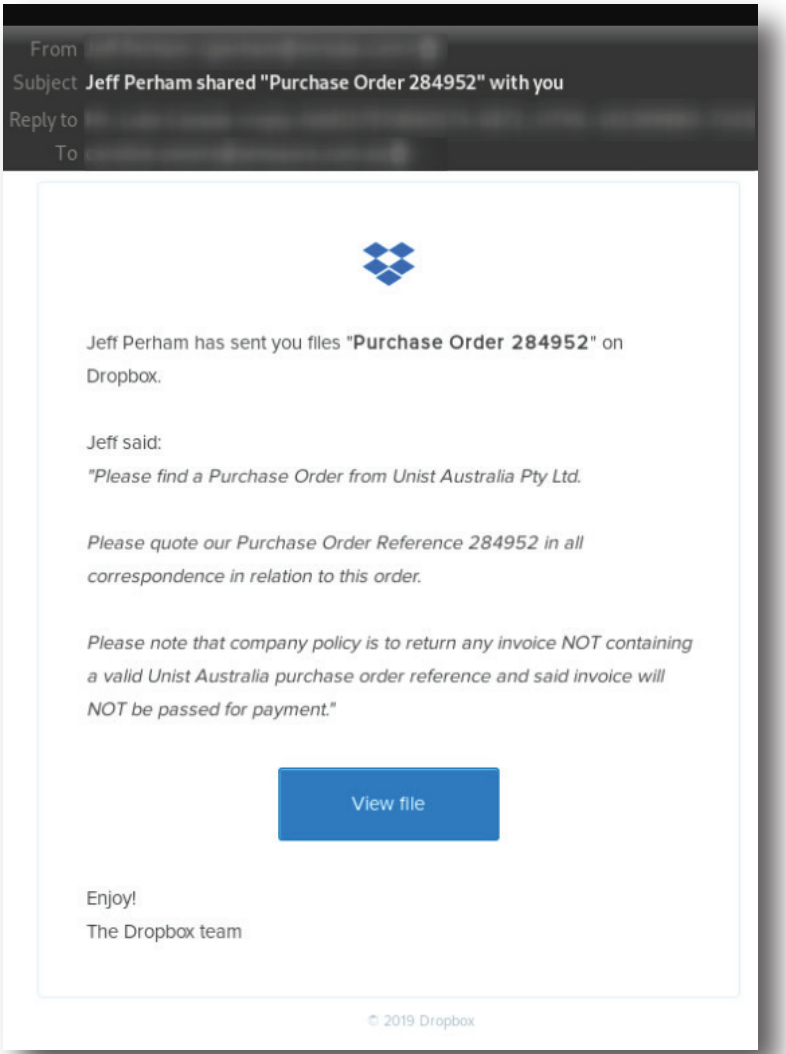
This example leverages **Dropbox** branding and its file transfer mechanism to capture the details of unsuspecting users.

The initial email is **masquerading as a purchase order**, inviting users to click the **'View Transfer'** button to learn more.

Upon doing so, the user is taken to a phishing page that's impersonating an **Office 365 signin**. By entering their email and password, the user is disclosing to the criminals their **Office 365 credentials**.

As with the previous example, once the user has signed in, the purchase order file may indeed be a **malicious download** in disguise.

Dropbox Compromise Example 3



From [redacted]
Subject **Jeff Perham shared "Purchase Order 284952" with you**
Reply to [redacted]
To [redacted]

Jeff Perham has sent you files "**Purchase Order 284952**" on Dropbox.

Jeff said:
"Please find a Purchase Order from Unist Australia Pty Ltd.

Please quote our Purchase Order Reference 284952 in all correspondence in relation to this order.

Please note that company policy is to return any invoice NOT containing a valid Unist Australia purchase order reference and said invoice will NOT be passed for payment."

Enjoy!
The Dropbox team

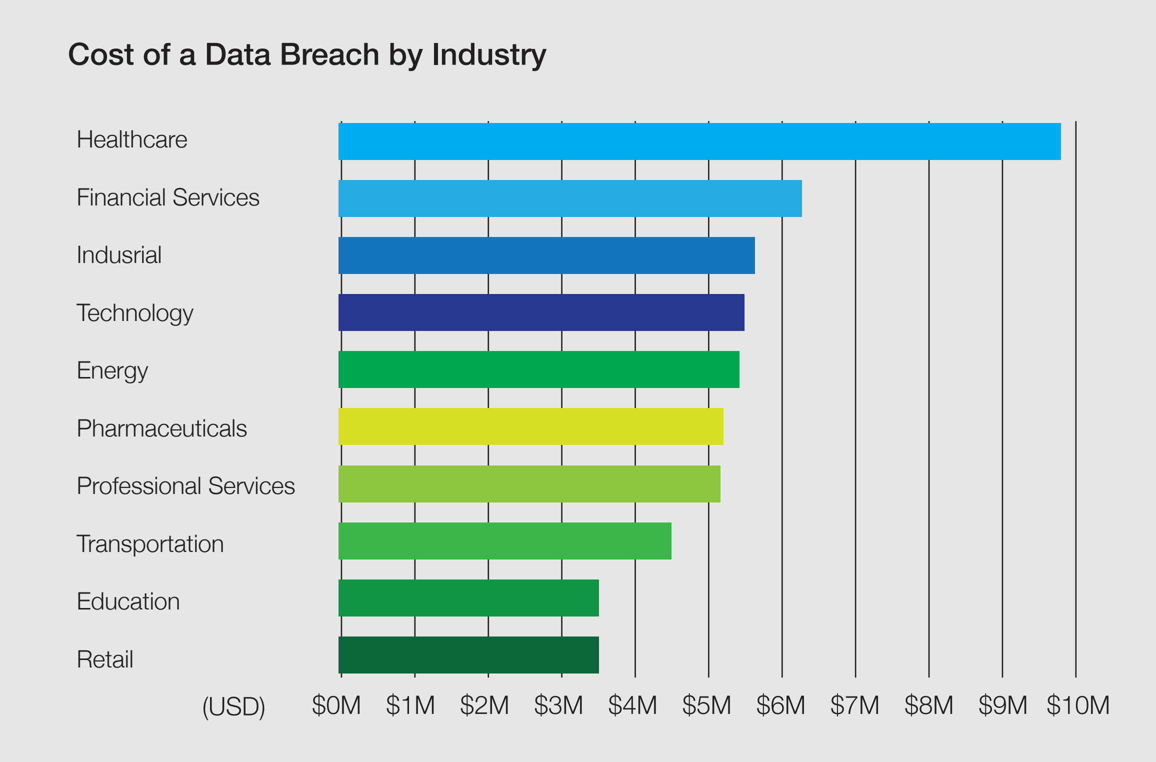
© 2019 Dropbox

And again, this third example **impersonates a Dropbox file sharing email**, with a more well-formed email inviting the user to view another **'Purchase Order'**.

The scam follows the same dynamic, presenting a **phishing page to capture the user's credentials**, and then **downloading a malicious file to their network**.

Consequences of Inaction

- **Credential Theft:** Harvested credentials enable unauthorized access to Office 365, VPNs, and other cloud services.
- **Malware Infection:** Drive-by downloads can deploy ransomware or remote-access tools, leading to network infiltration.
- **Data Exfiltration:** Compromised credentials allow attackers to steal sensitive corporate documents.
- **Regulatory & Reputation Risk:** Breaches expose organisations to GDPR, ISO 27001, and SOC 2 non-compliance fines, plus brand damage.



IBM Cost of a Data Breach Report 2024

References:
https://www.ibm.com/reports/data-breach#Key+stats

Why MailGuard Is Critical

MailGuard delivers:

- **Cloud-Link Analysis:** Behavioural scanners detect anomalous use of Dropbox share links and embedded PDF payloads.
- **Content-Aware PDF Parsing:** Inline inspection of PDF attachments identifies hidden redirect links and JavaScript objects.
- **Account-Takeover Detection:** Monitors for unusual OAuth-email-sending patterns from file-sharing services.
- **Seamless Integration:** Frictionless deployment inline with Microsoft 365 and Google, blocking threats before they reach users.

Don’t Settle for Compromises

All observed **Dropbox-PDF phishing and malware campaigns (2020 & 2024 waves) were intercepted by MailGuard** prior to delivery.

A Strategic Call To Action

Cloud-storage platforms are alluring vectors for attackers due to their trusted status. Email authentication and sandboxing alone cannot stop PDF-based weaponization.

Security teams must deploy advanced, behaviour-driven defences, like MailGuard, that parse and analyse cloud-hosted attachments in real time.

Let's **schedule a time** to review your organisation's security posture and explore how MailGuard can deliver precision defence against the similar persistent threats.

"I couldn't speak more highly of MailGuard as a reliable service provider."

— IT Manager, Porsche

"The entire implementation process was very simple and easy to manage"

— Help Desk Specialist, Lincraft

"We've seen email-based attacks surge. MailGuard and Defender 365 together have helped us stay protected."

— CISO, Silk Logistics

Built in Australia.
Trusted Globally.

MailGuard is a global leader in email threat detection. A pioneer in cloud email security since 2001, MailGuard invented the concept of pre-filtering email threats before inbox delivery, laying the foundation for the Secure Email Gateway (SEG) category.

Today, MailGuard protects organisations globally with AI-powered threat detection, seamlessly deployed inline with Microsoft's ecosystem and Google, among other email providers.

At the heart of our platform is **MyGuard**, our proprietary AI threat engine developed with over **A$35 million in R&D**. MyGuard combines:

- Gen-AI powered LLMs
- Bayesian and fingerprint-based classifiers
- Real-time behavioural heuristics

…to stop advanced threats on first encounter before they reach staff inboxes, including those that bypass Microsoft and other cloud email security vendors

MailGuard is **ISO/IEC 27001:2022 certified**, trusted by **over 5,500 organisations**, including governments, law firms, banks, hospitals, and ASX-listed companies. Recognised for our unmatched speed in detecting zero-day email threats, we have consistently stopped sophisticated exploits, like **QR code phishing, Dropbox-based malware**, and **Azure AD Guest Invite fraud**, months ahead of Microsoft, and other leading platforms.

In an era of rising cyber regulation and board-level accountability, MailGuard enhances your Microsoft 365 or Google security stack with minmal disruption, easy activation, and elite-speed protection, fulfilling your fiduciary and operational responsibilities.

Trusted by Global Leaders.
Since 2001.

- A **leader in advanced ‘zero zero-day’ email threats** missed by Microsoft 365 and other 3rd party vendors.
- Achieve peace of mind with MailGuard, a solution **trusted by global leaders** that ensures your email is secure.
- Benefit from **A$35M+ in R&D, including proprietary AI & ML-powered threat detection**, to boost your cybersecurity confidence.
- AI-powered email threat detection and inline architecture intercepts and blocks threats hours faster, on first encounter.

“It’s the type of innovation that we want to see.”

— Satya Nadella, CEO & Chairman, Microsoft

“MailGuard has developed world-leading cloud and email security IP. This is IP that is unique to Australia; it’s among the leading cloud and email security solutions anywhere in the world.”

— Hon. Malcolm Turnbull, Former Australian Prime Minister

“You are being led by what I see as one of the world’s best, at preventing and protecting your secure infrastructure, securing your people, and securing your business”

— Steve Miller, COO, Microsoft Asia

www.mailguard.com.au

Let’s Connect

Make time today to talk to our local team of experts about fortifying your inboxes.
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