

AxCrypt

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Introduction

- ❖ Technical Background
- ❖ What is AxCrypt?
- ❖ Encryption Method
- ❖ Demonstration Preview
- ❖ Demonstration
- ❖ Demonstration Summary
- ❖ Conclusion

Technical Background



Nowadays data exfiltration is the biggest threat companies and individuals face. This stolen data usually contains sensitive information like identity data, financial data, and even intellectual property data. This major issue plaguing the world is how we decided what our project should be built around, which is protecting data through encryption. Data exfiltration can occur from multiple ways such as:

- ❖ Phishing
- ❖ Malware
- ❖ Plaintext attacks

There are many other attack vectors as well, so as a result data protection should be a top priority for every entity. Fortunately, we were able to find a tool that specializes in data encryption called Axcrypt. We were able to research and utilize this tool through Axcrypt's own website containing the download, blogs and other useful information correlated to Axcrypt, as well as their personal youtube account which gave us a visual display of utilization. Overall we hope to display the action of providing an extra layer of defense from data exfiltration using encryption.



What is AxCrypt?

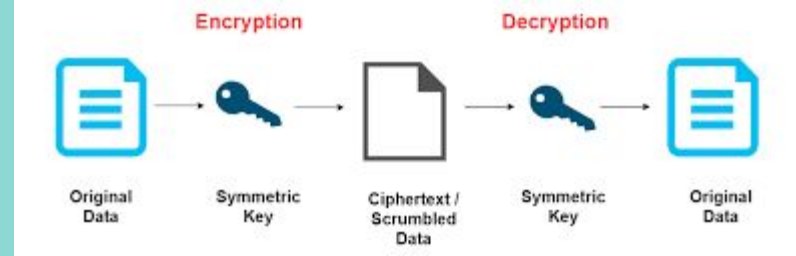


AxCrypt is a file encryption software designed to secure sensitive information by encrypting files and ensuring that only authorized individuals can access the protected content. Here are some key features of AxCrypt:

- ❖ Cloud Storage Compatibility
- ❖ Automatic Folder Encryption
- ❖ Collaboration Features

As for why you might choose AxCrypt over other encryption software, it often depends on your specific needs and preferences. AxCrypt is favored for its simplicity, integration with file explorers, and user-friendly interface. If you prioritize ease of use and seamless integration with your existing workflow, AxCrypt could be a suitable choice.

Encryption Method



- ❖ Axcrypt utilizes a symmetric encryption method, its specific choice being the AES(advanced encryption standard) algorithm with the option of 128-bit or the much more secure 256-bit keys, which we used in our case.
- ❖ Although nothing is 100%, AES-256 is extremely close to it with it being labeled as “quantum-resistant” and essentially impervious to any brute force attacks.
- ❖ A drawback of AES-256 is its resource consumption (more memory and storage required) which leads to strain on processing power, but outside of some computational issues it has much more upside. Overall it is understandable that this is one of the most popular and most secure encryption algorithms available.



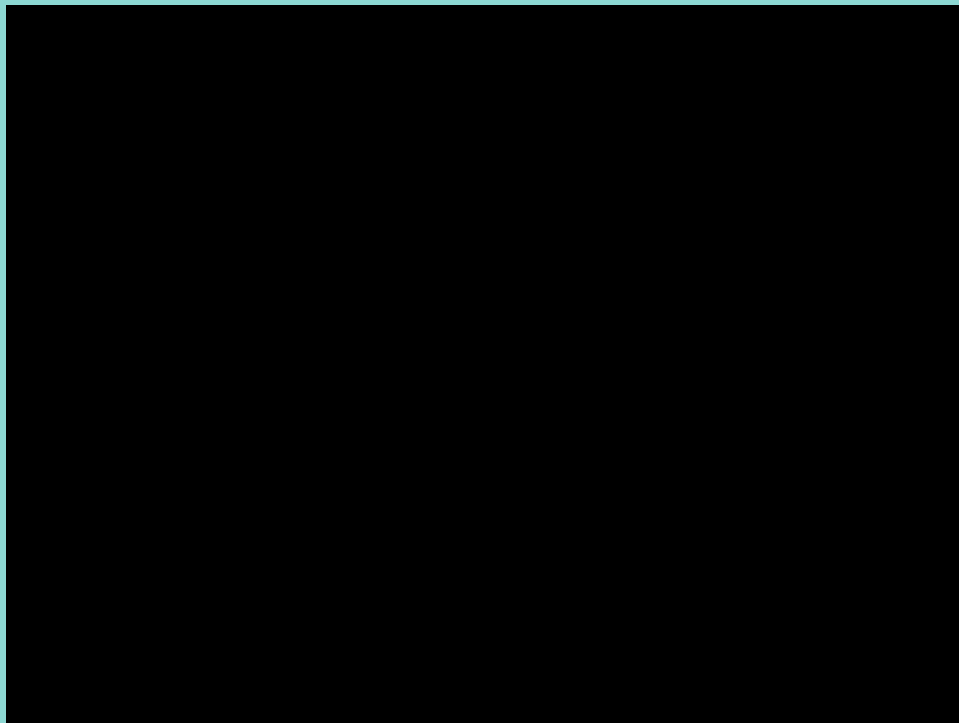
Demonstration Preview

- ❖ Accessing Secure Option Tab:
 - Launch the AxCrypt application and navigate to the secure option tab on the home screen.
- ❖ Selecting File or Cloud Link:
 - Within the secure option tab, choose the file or cloud link that requires encryption. AxCrypt will then initiate the encryption process for the selected file.
- ❖ Encryption Process:
 - AxCrypt utilizes its advanced encryption algorithms to generate a 256-bit key, ensuring the utmost security during the encryption process.
- ❖ Decryption Process:
 - To decrypt a file, select the option to stop securing. This action will prompt AxCrypt to decrypt the chosen file, converting it back to its original format for easy viewing.
- ❖ File Restoration:
 - The decrypted file is now restored to its original format, providing a seamless and straightforward viewing experience.

By following these steps, users can effectively utilize the AxCrypt Application to encrypt and decrypt files, ensuring the highest level of data protection for their sensitive information.



Demonstration





Demonstration Summary

- ❖ Showcased how to encrypt both a file and a folder using AxCrypt
- ❖ Shared key with another person in order to gain access to encrypted material
- ❖ Displayed contents of encrypted file
- ❖ Ability to unencrypt file using the stop secure tab
- ❖ AxCrypt capability to share via encryption credit card information, notes, and username/passwords
- ❖ Real life application of being able to read an encrypted email

Conclusion

- ❖ In Conclusion, AxCrypt serves as a vital tool in the realm of data security, as it offers a straightforward means of encrypting files and additional folders.
- ❖ The interface happens to be extremely user-friendly, and is capable of capturing secure files in different contexts.
- ❖ Axcrypt stands out as a great option for both individual users and major companies due to its comprehensive designs and cloud storage features.
- ❖ Axcrypts commitment to (user data/encryption) safety allows for diverse opportunities to mitigate threats and stay ahead.
- ❖ As the cyber world continues to evolve, axcrypt remains a valuable ally while maintaining its integrity to its crucial assets.