





Active Cypher Technical Brief

Active Cypher Overview

- Active Cypher provides data protection from data creation throughout its lifecycle, covering the gaps left by point solutions. We defuse the ticking time bomb of unprotected data that is putting the business at risk. Our solution provides data protection and control for an affordable price.
- Take responsibility for data protection out of the hands of end users, providing unobtrusive security that works everywhere without requiring end-user cooperation or decision-making. Remove friction between IT and users over security protocols.
- Encrypt data end-to-end with the highest standards, making data useless to bad actors so they can't get what they want even if they break through firewalls. Fully protect business operations from the risk of ransomware attacks while turning data breaches from a threat to a nuisance.
- Resolve concerns over data risk with a solution that can be quickly deployed in your environment, protecting and securing data with no additional physical hardware.
- Meet compliance requirements and be able to prove it: Secure data fully and have an immutable chain of custody record of data activity. Stay in control of data exposure without having to trust third parties to keep data safe.
- Keep data assets safe in their own network, within the Microsoft 365 environment, or cloud file storage. Share file content for viewing without sending any source data. Remotely revoke access at any time, rendering assets useless to bad actors no matter where files have been sent or who has opened them.

Business Security Begins with a Trusted, Secure & Resilient Solution

Active Cypher is a modern data protection solution specializing in protecting & securing data across its lifecycle with far less complexity and cost. Our simple and effective approach redefines data loss prevention by enabling data to be self-protected everywhere even when firewalls and other security measures fail.

Data Creation	Data At Rest	Secure Sharing	Data in Motion
 <p>Other solutions require proprietary hardware end-to-end to protect your data</p> <p>Active Cypher operates on any machines, physical or virtual</p>	 <p>Many solutions require you store your data in their proprietary 3rd party cloud</p> <p>Active Cypher protects your data wherever you store it</p>	 <p>Some email protection products offer complicated collaboration security</p> <p>Active Cypher integrates into your users' workflow</p>	 <p>Most solutions focus only on email attachments</p> <p>Active Cypher protects your data wherever you send it and wherever you store it</p>

Active Cypher is deployed as a Microsoft Cloud-based trusted, secure & resilient solution for each client to ensure the integrity of every operation, transaction, workflow, and delivers un-compromised user productivity, while modernizing data loss prevention to its original intent by focusing on data protection.

The Mechanics of Active Cypher

Data Controls, Sharing, with Application and Viewer Management

Active Cypher provides a data protection and control system, and file sharing with application and viewer management that is deployed into the customer's Azure environment. Allows internal or external sharing to a wide variety of device types and operating systems including a robust data sharing and sync service that enhances the mobility and collaboration needs of users with the data security requirements of the enterprise. Securing data is critical to every enterprise. With the concern over the plethora of free or low-cost data sharing apps and sites available, providing end users with a secure alternative that still empowers them to share files with co-workers has become an extremely high priority at every level of management.

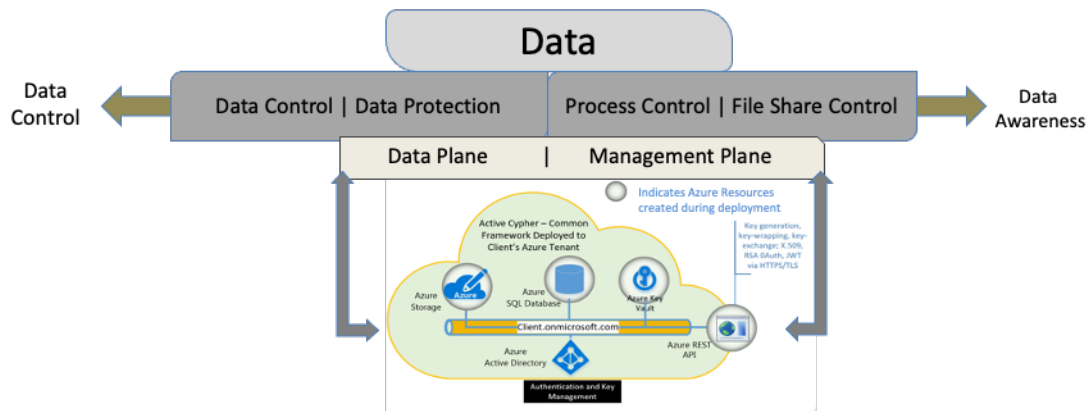
Protection with Controls: AES (Advanced Encryption Standard) encryption of data is seamless and automatic. Customer policies dictate the level of visibility and which data access is available across the sharing management controls. Data controls can be placed around Active Directory Security Groups or Cloud group sharing policy, and external domains, geographic location, or device. Higher risk groups may only be allowed view-only access to shared files, no printing capability, or no downloading of the shared file from their browser. Active Cypher does not transmit any metadata or file data in view-only mode; a "data-free" version of the file is displayed to the end-user without any file data on their device.

Provides Sharing Management: Enterprise-level visibility and control of internally and externally connected authentication and identity providers. Provides Auth0 database and connectors to many other identity providers for securely sharing with external entities, requiring them to authenticate in their native identity system and be authorized in customer's Azure Active Directory in their tenant.

Delivers Application and Viewer Management: Active Cypher offers native apps for Windows in AD environments, HTML5 web browser interface for cloud environments including macOS, Android and iOS. The HTML5 browser viewer supports over 200 file types including medical and streaming media.

Active Cypher is deployed as a Service Oriented Architecture (SOA) to the Client's Azure Cloud environment, bound to the Client's Microsoft security framework. Unlike other security solutions, we are not a 3rd party provider in securing your data. Our solution allows you to manage, operate and control your data, without 3rd party interaction and without access to your encryption keys. After deployment, there is no other access or connection to the client's cloud. Additionally, no new hardware is required. Active Cypher maintains the encrypted contents of your data, while ensuring only verifiable, pre-approved processes can change the contents of your company data while it is exposed to the Operating System (OS) during the viewing and authoring of files.

Active Cypher SOA Architecture



Azure Key Vault – Used to store data that represents information in the Active Cypher security architecture.

Azure Blob Storage Accounts – Active Cypher deploys two Blob Storage Accounts: Master Blob Storage Account and User Blob Storage Account.

Azure SQL Server database – Active Cypher deploys a new instance of a SQL Server in Azure and creates a new SQL database on the server (hybrid/on-prem).

Azure Web Apps – Active Cypher deploys two web applications in Azure: REST API (Application Protocol Interfaces), and REST Proxy.

Active Cypher Azure Active Directory applications:

Native (Auth) WebApp in Azure AD (Active Directory) – Active Cypher registers a native WebApp in Azure AD called “Active Cypher login” which is used for authentication against Azure Active Directory.

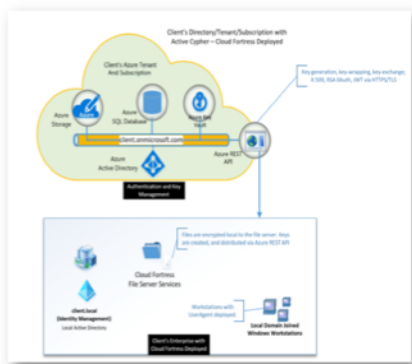
Azure AD (main worker app) – Active Cypher registers a web application in Azure AD called “Active Cypher Web login” which is used for authentication against Azure cloud resources by REST API and REST Proxy during the regular work of these web applications.

Active Cypher Encryption Details:

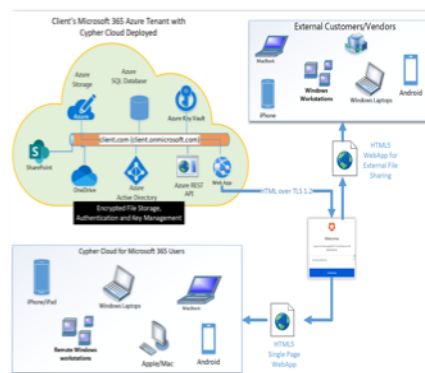
Active Cypher Key – Is a double-key, key-encryption-key service in the Azure Cloud. Symmetric-keys are protected, and distributed through session-based, and machine certificates. Key Wrapping for Secure Key Distribution utilizes Azure Web Apps, Key Vault, Blob Storage, and Azure SQL Database.

Active Cypher Solutions

Cypher Protect HYBRID/ON PREM



Cypher Cloud CLOUD BASED



Cypher Protect

Cypher Protect is a hybrid/on premise software solution that is built to secure files stored on a file server within an Active Directory (AD) environment. Cypher Protect encrypts the contents on the file server based on business policy enacted using AD security groups and user ids. Files are controlled through a Windows agent. File controls include sharing, with time-based expiration, rendering, printing, and downloading. Files can be rendered unavailable through a management console.

Cypher Cloud

Cypher Cloud is a software solution built to secure the files stored in the various file storage services like SharePoint, OneDrive, and Dropbox. It is part of the Active Cypher software solutions to protect the sensitive data for the enterprises. Cypher Cloud ensures that all the files being uploaded to file storages are always encrypted when stored. While downloading the files from the Cypher Cloud Web App, the files are first read from the files storage service, decrypted and then rendered to users' machines memory only.

Both Cypher Protect and Cypher Cloud are built upon Active Cypher's Service Oriented Architecture.

Secure Today Secure Tomorrow

Active Cypher is leading the innovation curve through its focus on what is today seen as "futuristic." History repeatedly has shown the industry that which is "fringe" today becomes a headline tomorrow. Threats from quantum computers, AI/ML-enhanced ransomware, and focused nation state attacks.... will lead to significant issues.



Adding to its product line, Active Cypher is building decentralized identity to conduct confidential business on the open Internet via blockchain, network enforcement, and secure transactions. Through the anonymizing of data, intellectual property can be future proof and secured.

Active Cypher provides data protection with control for file servers and cloud resident files. Data is actively protected, both on file servers and cloud based, providing control over data usage when shared within or external to your organization. File data is rendered useless and cannot be exploited. Our solution provides protection to thwart threat groups changing your data or using it for “malware for money crimes.”

At Active Cypher, we believe that your company’s data should be protected against data loss, whether at rest, in transit, stored or consumed.

Active Cypher puts you back in control of your business operation and critical data.

Protect your data, anywhere.

To learn more, contact Active Cypher today.

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