

Protecting Accounts and Data with ITU X.1280 and X.1220

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Passwordless Alliance



Passwordless Alliance

Presentation

2025 ITU Regional Asia-Pacific CyberDrill

Ulaanbaatar, Mongolia

<https://www.youtube.com/watch?v=rBUK45fdBtY>

01

Security Challenges

02

Protecting Accounts
with X.1280

03

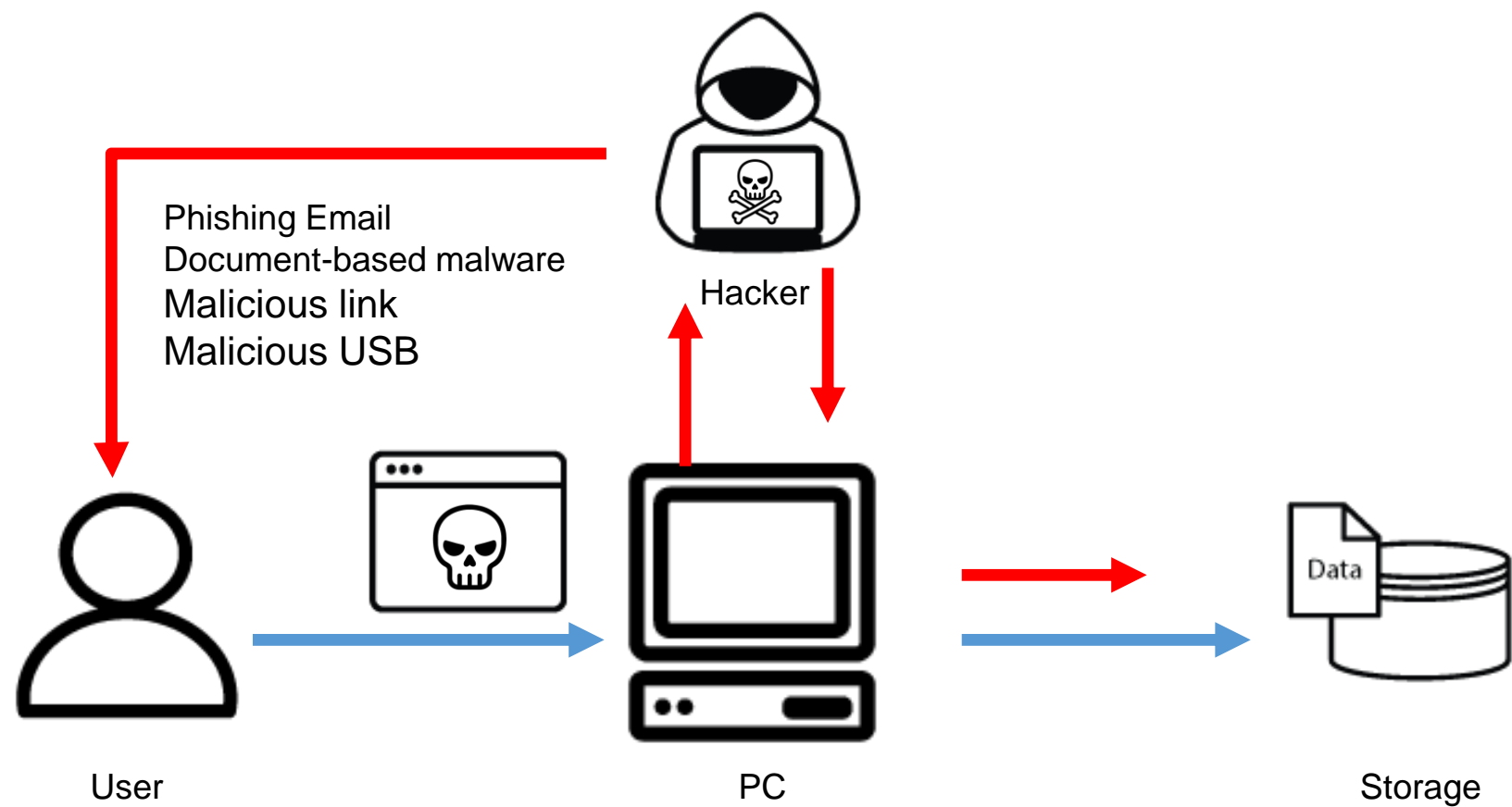
Protecting Data with
X.1220

04

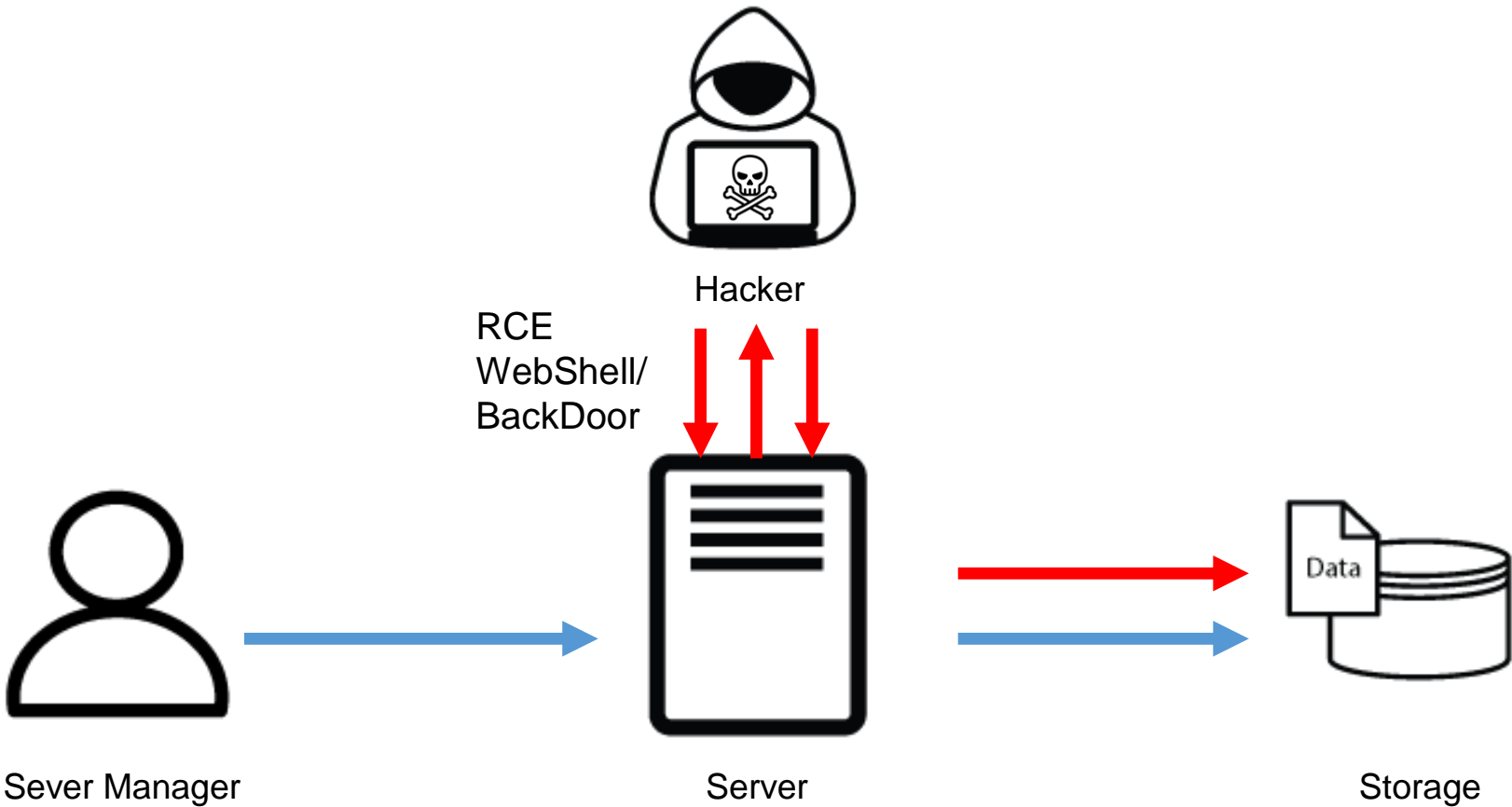
Summary
Q&A

Our PCs and servers are vulnerable.

1. Security Challenges



1. Security Challenges



We cannot prevent attacks on PCs and servers!

**Once attackers compromise PCs and servers,
they always target our accounts and data.**

How can we protect accounts and data even if PCs and servers are compromised by attackers?

01

Security Challenges

02

Protecting Accounts
with X.1280

03

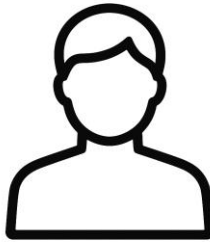
Protecting Data with
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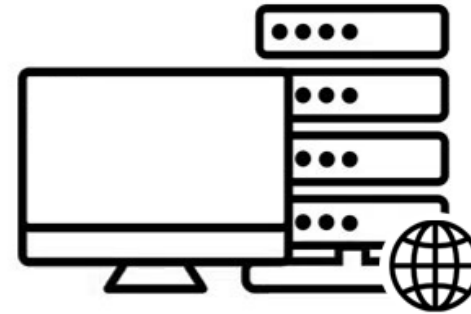
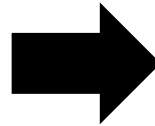
Summary
Q&A

**We have a responsibility to
provide proof to the online system.**

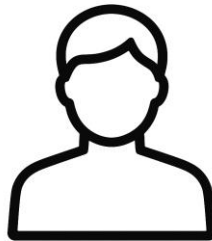
Input-Based User Credential



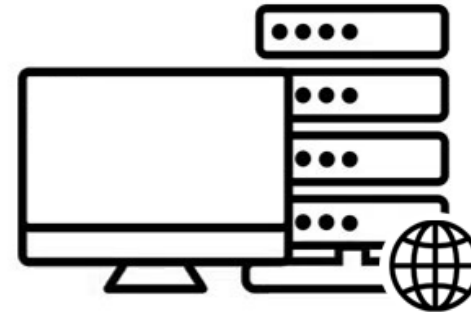
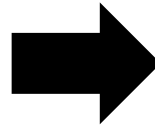
User Password



Input-Based User Credential



User Password



**We need a solution that can protect accounts
even if attackers are already
on PCs and servers.**



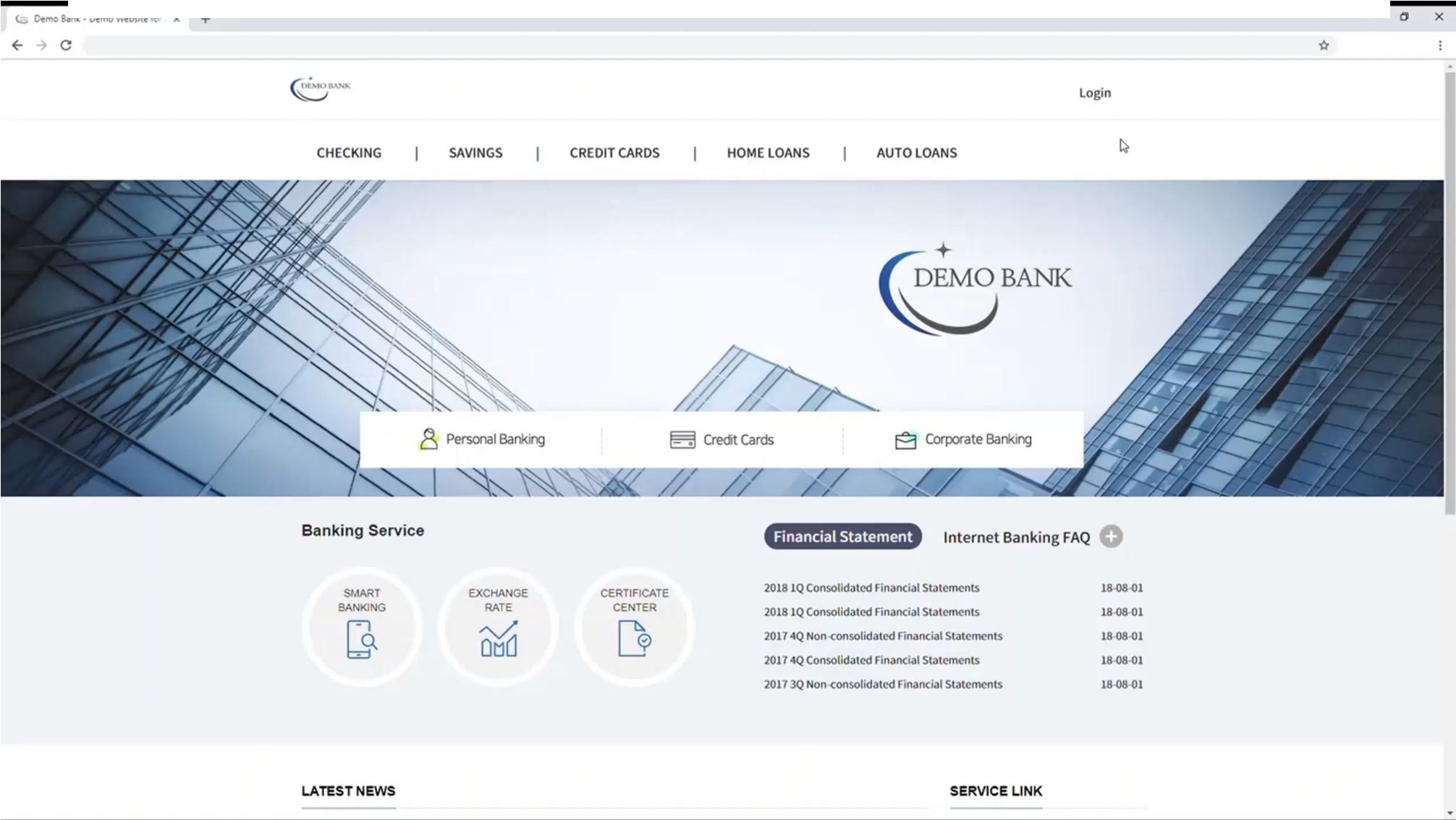
ITU-T X.1280



ITU-T X.1280

**Shift the proof responsibility
from the user to the online system**

2. Protecting Accounts with X.1280



2. Protecting Accounts with X.1280



<https://youtu.be/ebN2kTGZIRE>

2. Protecting Accounts with X.1280



AutoPassword™ Logon

Support : 070-4313-3640

Demo PC

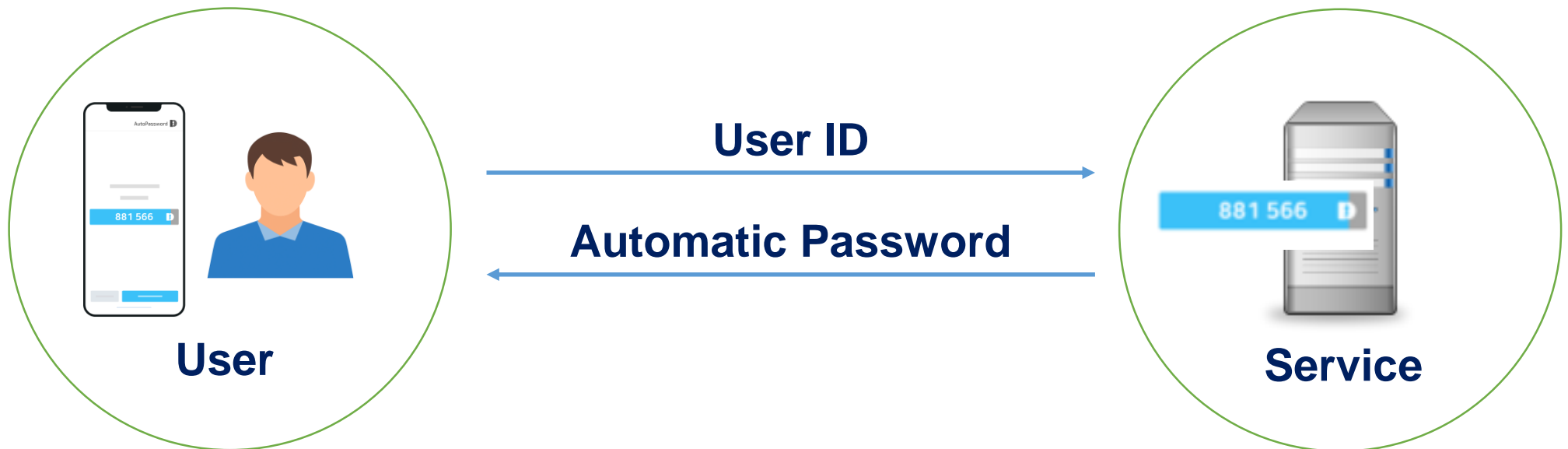
×→

Settings

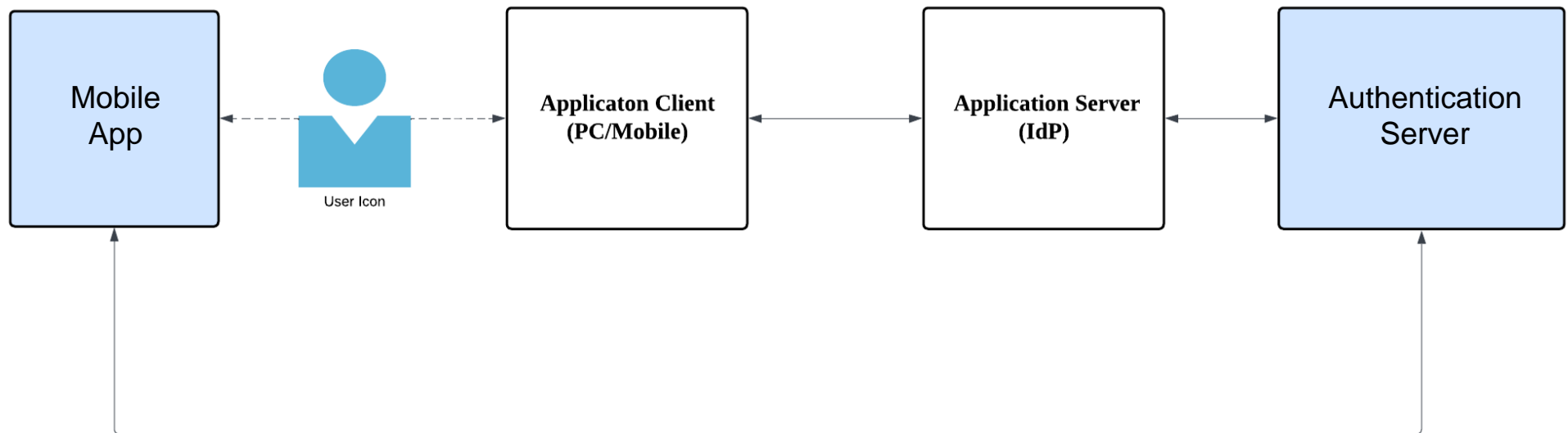
2. Protecting Accounts with X.1280

```
login as: █
```

Verify Automatic Password by User



2. Protecting Accounts with X.1280





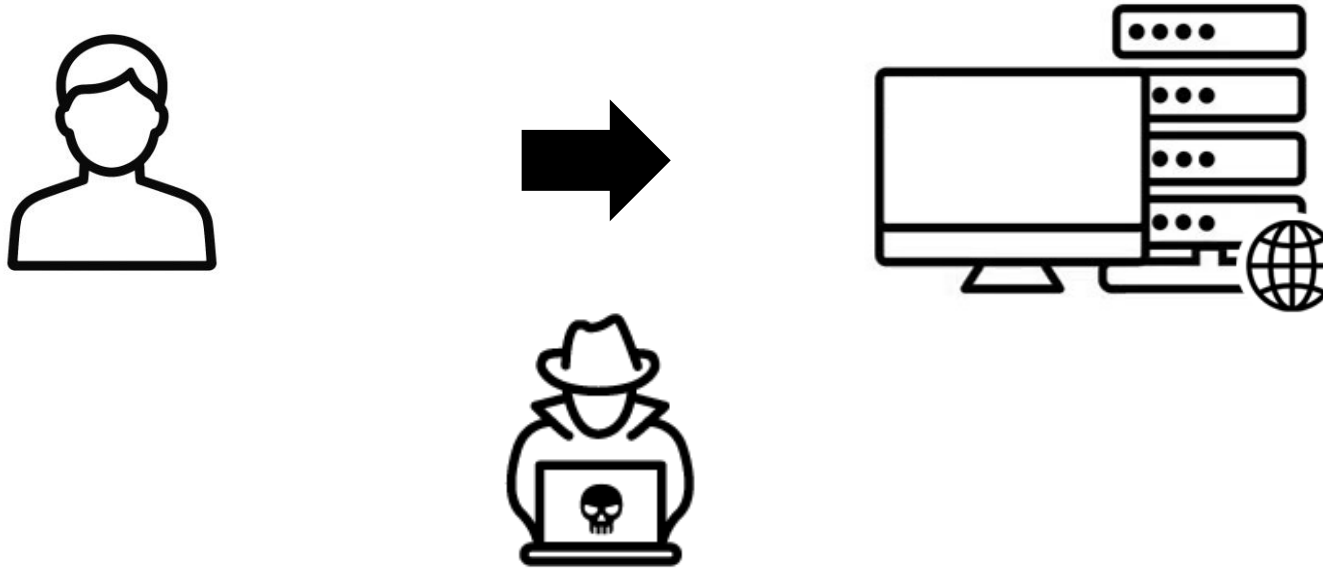
The Five Benefits of ITU-T X.1280



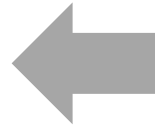
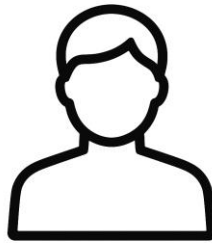
1/5

**Authentication technology
that cannot be stolen or forged through
phishing, pharming, or man-in-the-middle
attacks.**

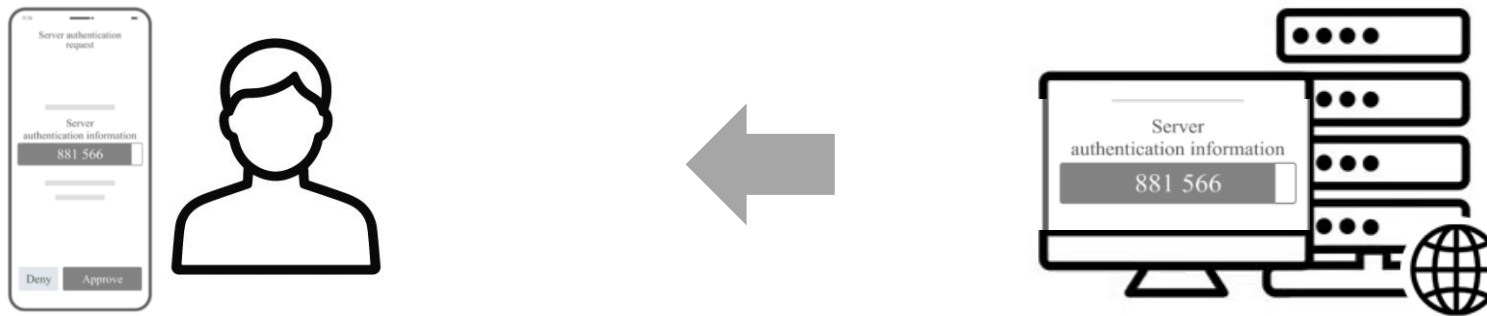
Input-Based User Credential



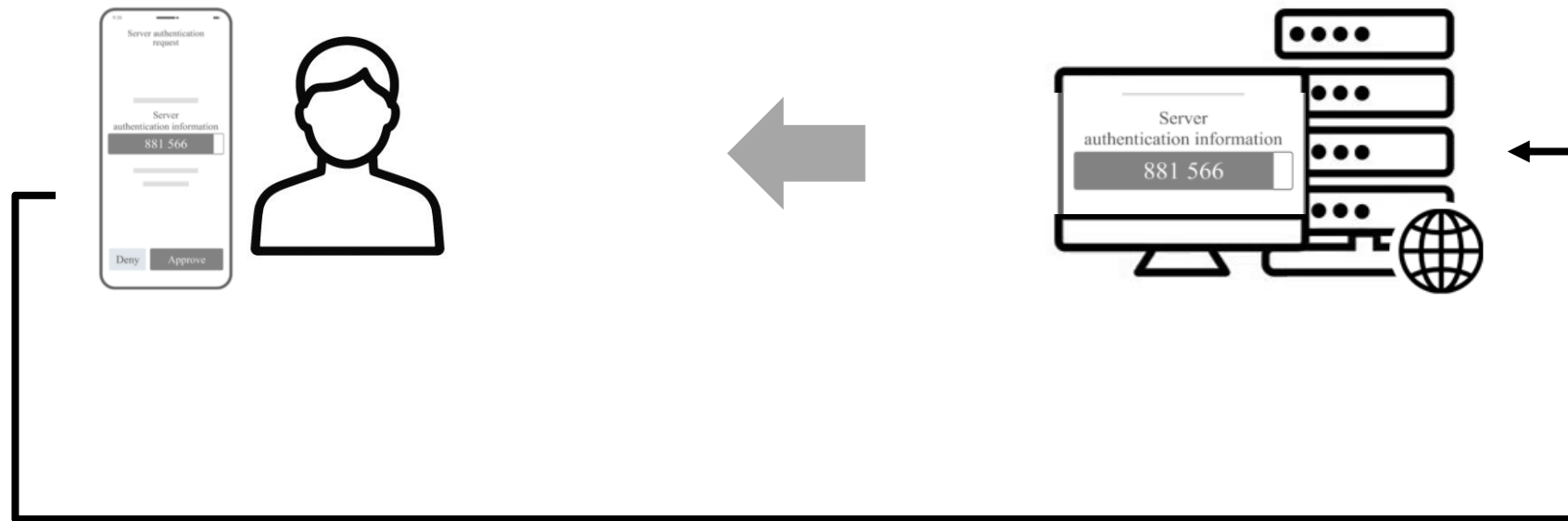
Output-Based User Credential



Output-Based User Credential



Output-Based User Credential



Out-of-band Server and User Authentication

Position of ITU-T X.1280

	User authentication	Server authentication
In-band Authentication	OTP/ Google OTP PKI User Certificate Biometrics FIDO Passkey	SSL Server Certificate
Out-of-band Authentication	Mobile Push Authenticator Duo	

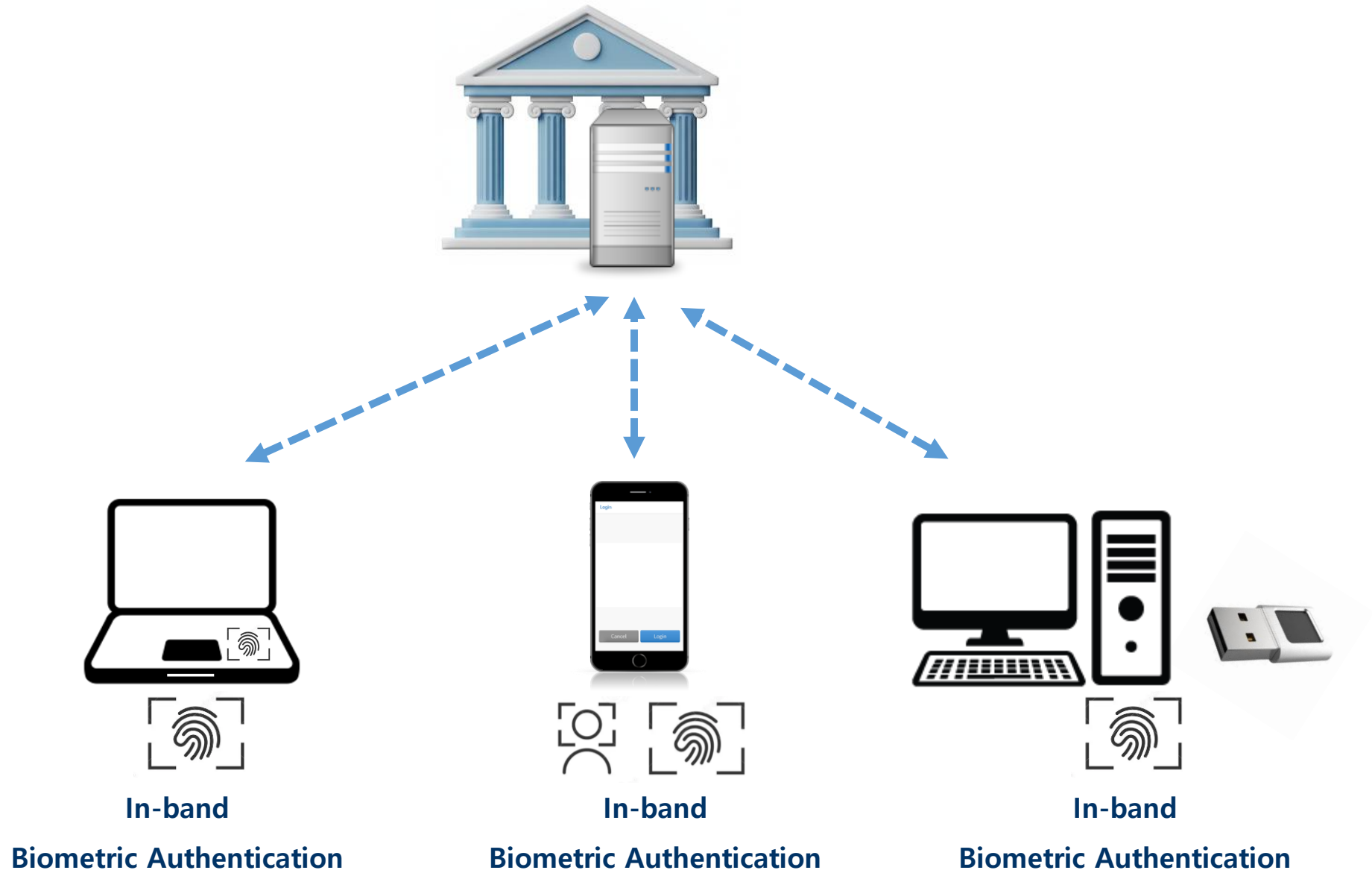
ITU-T X.1280

2/5

The most cost-effective biometric authentication technology.

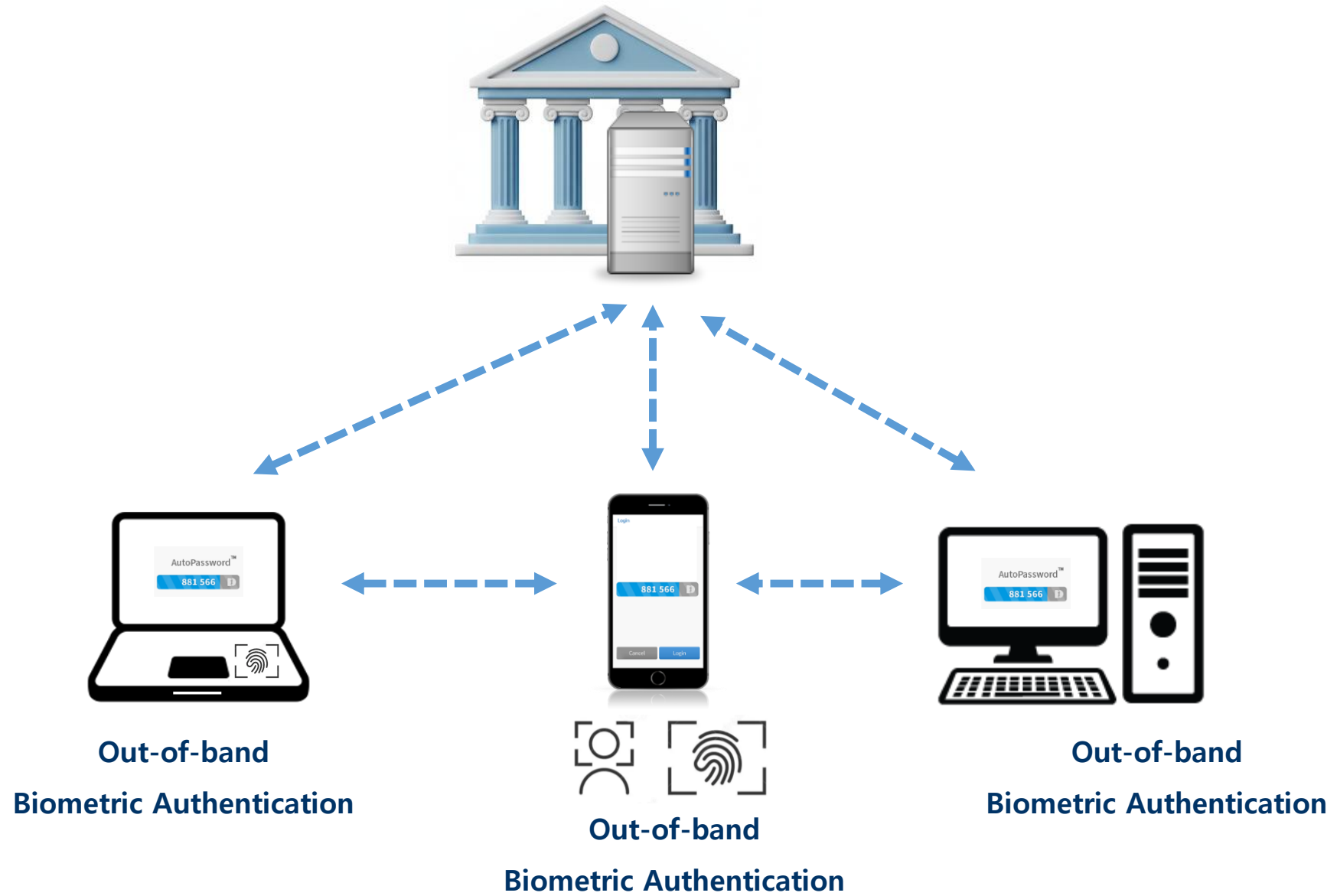
Traditional biometric authentication technologies are in-band methods that require a biometric sensor on each device.

2. Protecting Accounts with X.1280



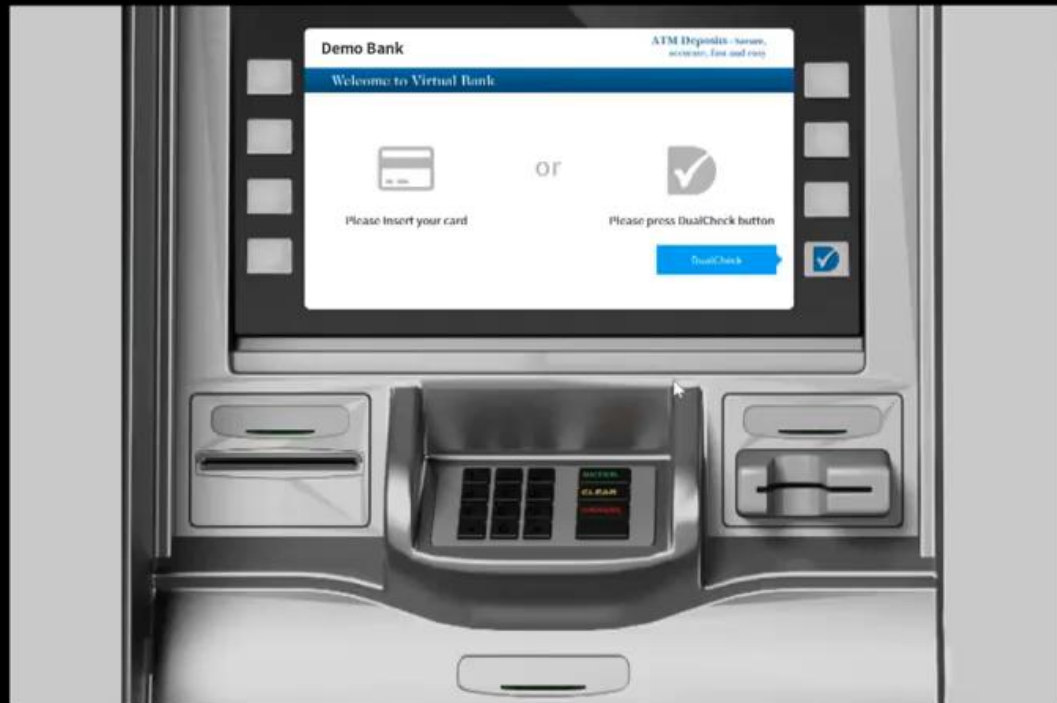
High-cost authentication technology that requires a biometric sensor on every device.

2. Protecting Accounts with X.1280



**Low-cost authentication technology that
relies only on
the smartphone's biometric sensor.**

2. Protecting Accounts with X.1280





ITU-T X.1280

**By shifting the burden of proof
from the user to the online system,**

**this becomes the safest, most convenient, and
most cost-effective authentication technology
for the era of PCs, mobile, IoT, cloud, and AI.**

2. Protecting Accounts with X.1280

 KB 국민은행	KB Kookmin Bank – No1 housing bank in Korea. Establishment and implementation of a strengthened user authentication system based on mutual authentication through a Zero Trust pilot project.
 우리은행	Woori Bank – No1 commercial bank in Korea. Passwordless-based PC access management and application access management for Woori Bank employees.
 유안타증권	Yuanta Securities – Passwordless-based PC access management and application access management for Yuanta Securities employees.
 INSS INSTITUTE FOR NATIONAL SECURITY STRATEGY 국가안보전략연구원	Institute for National Security Strategy – Deployment of authentication technology to secure critical business emails.
 KORAIL	Korea Railroad Corporation – Implementation of passwordless authentication to enhance user terminal authentication security for the next-generation Nara Marketplace system.
 KOMSA 한국해양교통안전공단	Korea Maritime Transportation Safety Authority – Strengthening user login security for external webmail access through passwordless authentication.
 한국관광공사	Korea Tourism Organization – Strengthening authentication security for administrators and partners in the development and operation of the “Visit Korea” system.
 KIAT	Korea Institute for Advancement of Technology – Implementation for employees to operate separate access controls between internal and external networks in internal business systems.
 구리시	Guri City Hall – Compliance with security regulations by enhancing login security for critical server access and implementing automatic password changes.
 CW 건설근로자공제회 Construction Workers Mutual Aid Association	Construction Workers' Mutual Aid Association – Strengthening server login security to improve internal system operations.

2. Protecting Accounts with X.1280



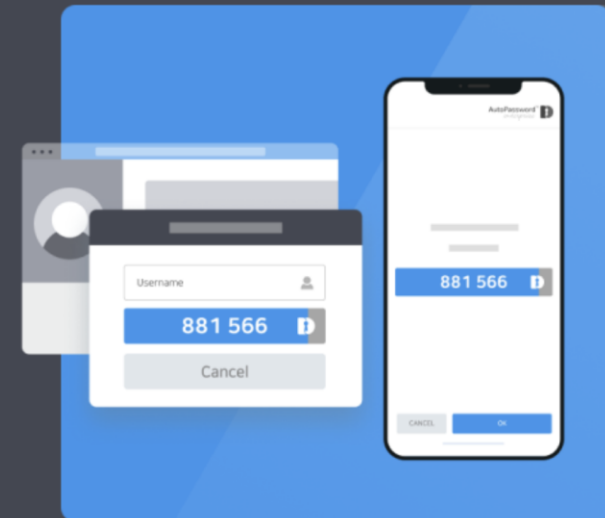
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Is the responsibility for authentication still being shifted to users?

Input-based user authentication not only causes inconvenience to users, but is also vulnerable to phishing or pharming attacks. Help users use the service with confidence by introducing an output-based service authentication method in which the online service takes responsibility for authentication.

The international standard ITU X.1280 is a mutual authentication technology that allows users to verify online services. If you are looking for a secure authentication technology, adopt mutual authentication technology that allows users to verify services. Passwordless X1280 with mutual authentication technology can be used for free in all B2C online services.



www.PasswordlessAlliance.org

01

Security Challenges

02

Protecting Accounts
with X.1280

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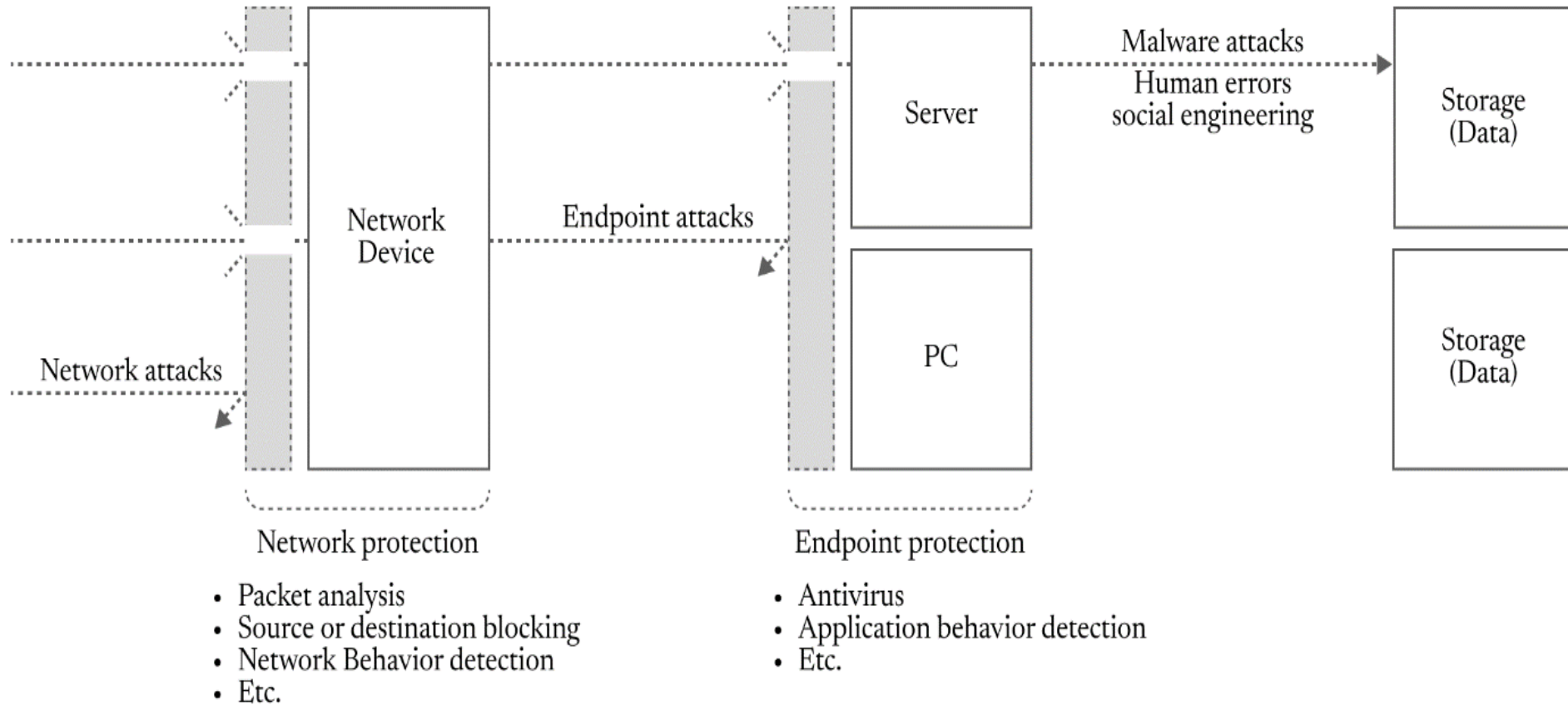
Protecting Data with
X.1220

04

Summary
Q&A

If an attacker already has administrative privileges on PCs and servers, preventing the attack is impossible.

3. Protecting Data with X.1220



**We need a solution that can protect data
even if attackers are already
on PCs and servers.**



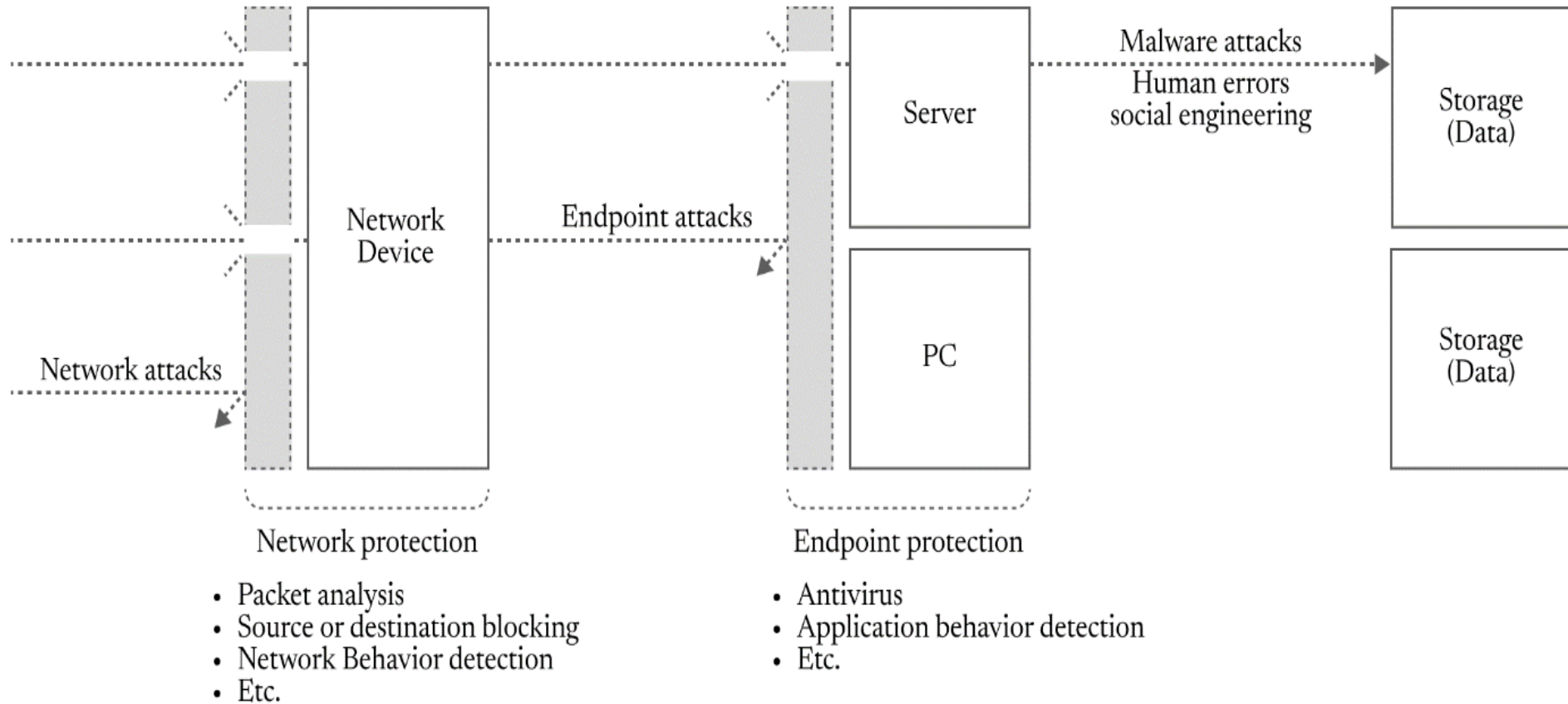
ITU-T X.1220



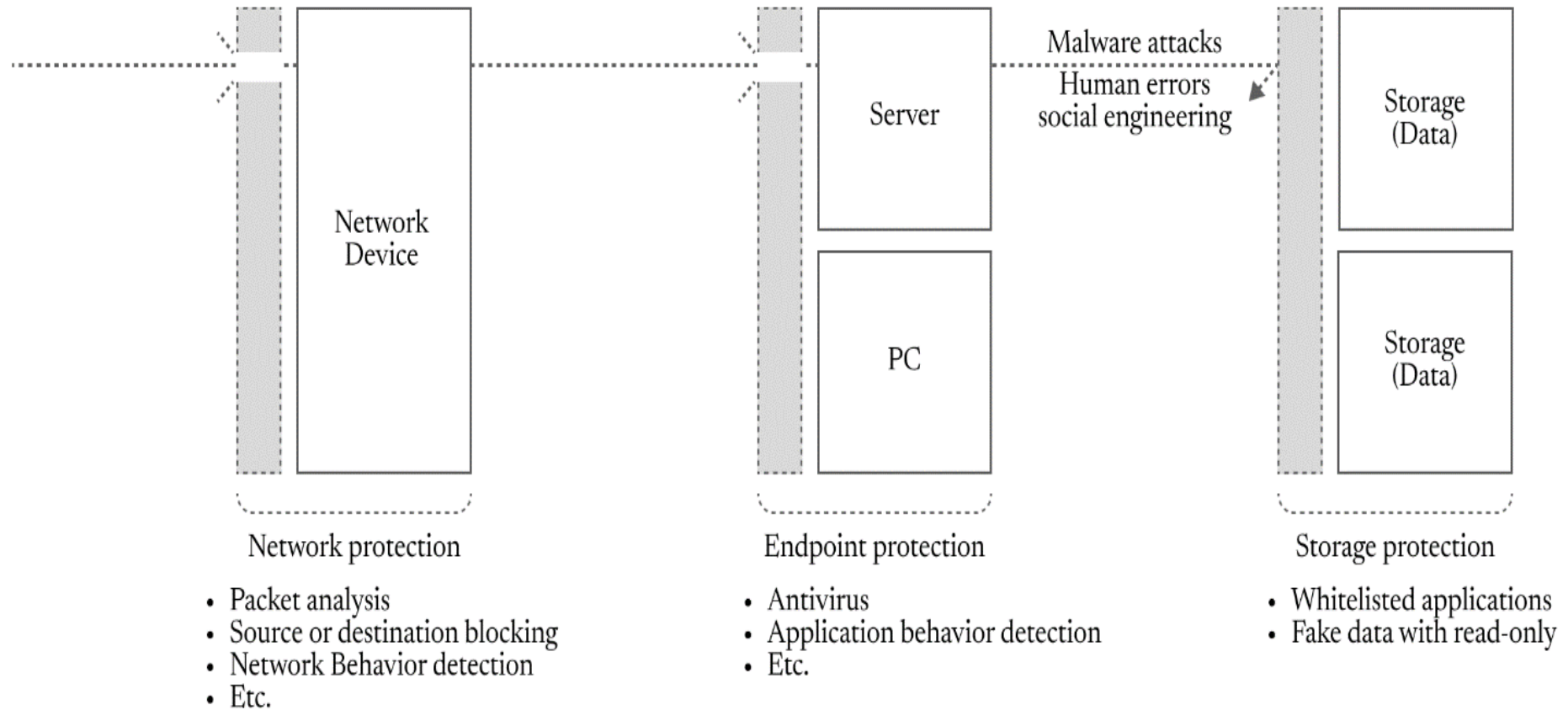
ITU-T X.1280

**Add an inspection unit to the storage
like a firewall for a network**

3. Protecting Data with X.1220

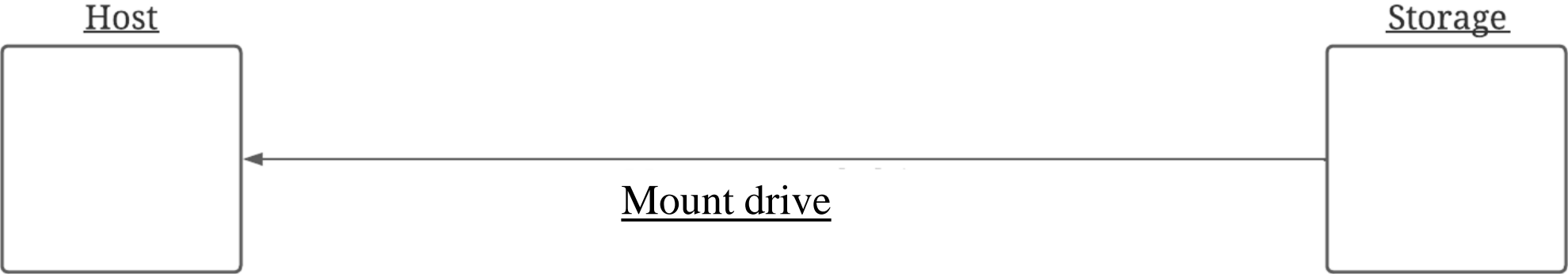


3. Protecting Data with X.1220

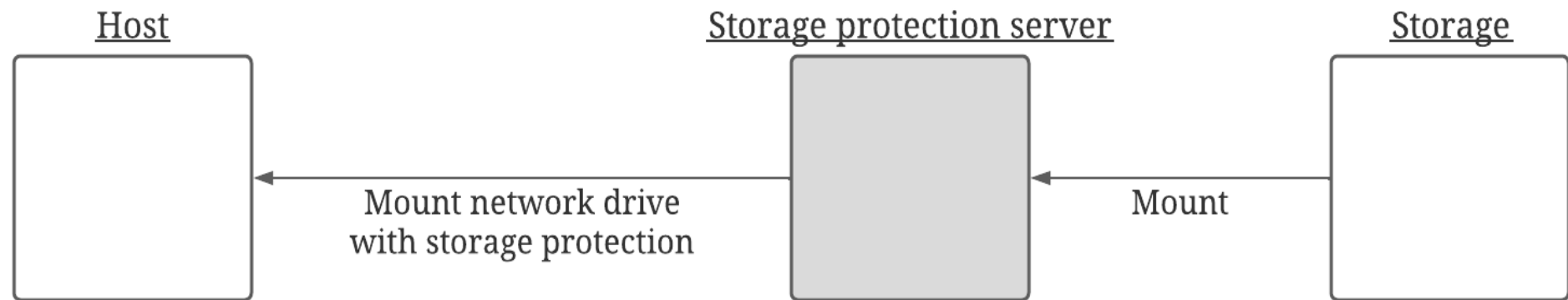


**Only pre-registered programs on the storage
are allowed to access data.**

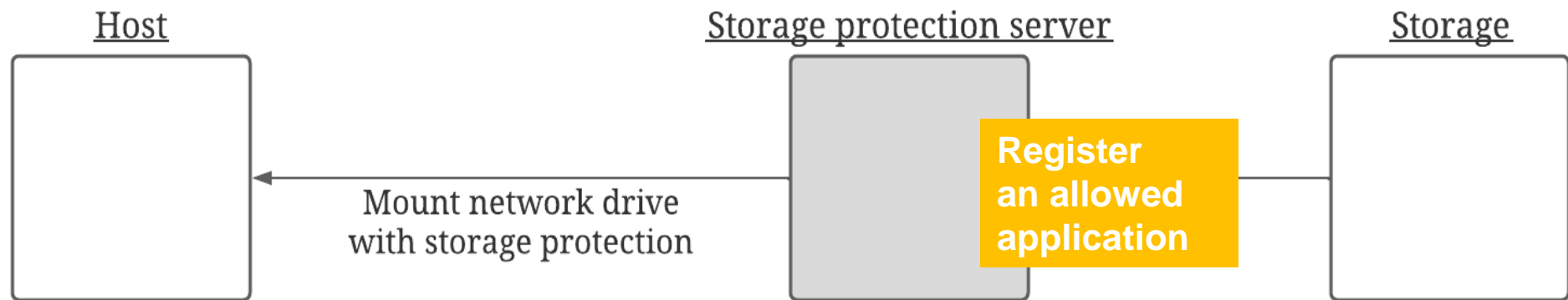
3. Protecting Data with X.1220



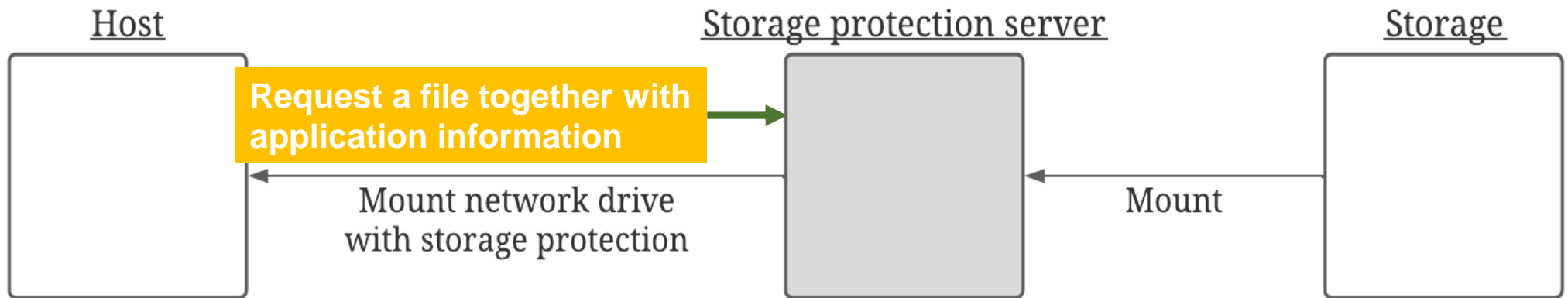
3. Protecting Data with X.1220



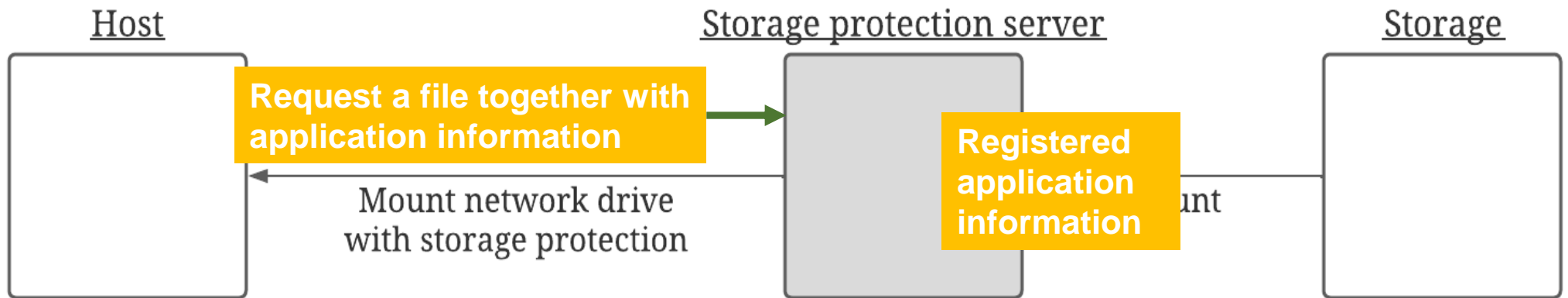
3. Protecting Data with X.1220



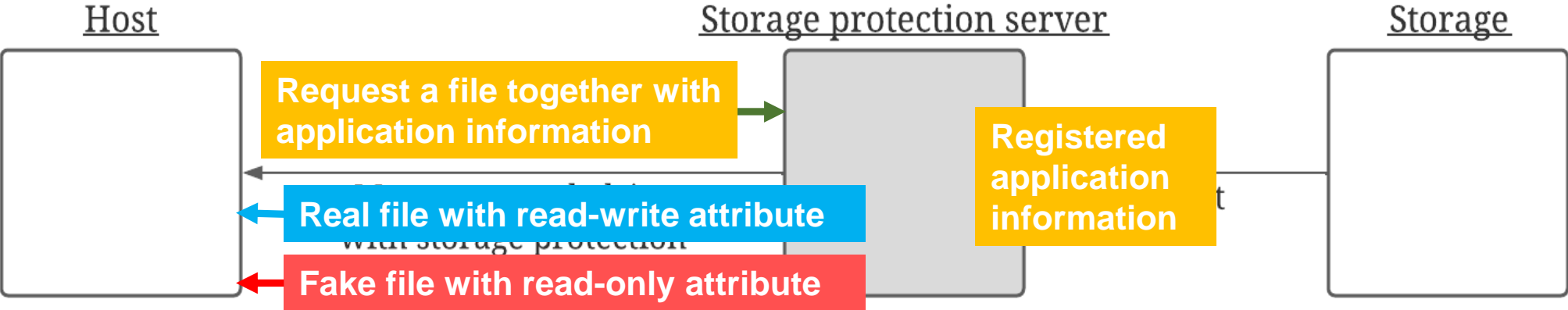
3. Protecting Data with X.1220



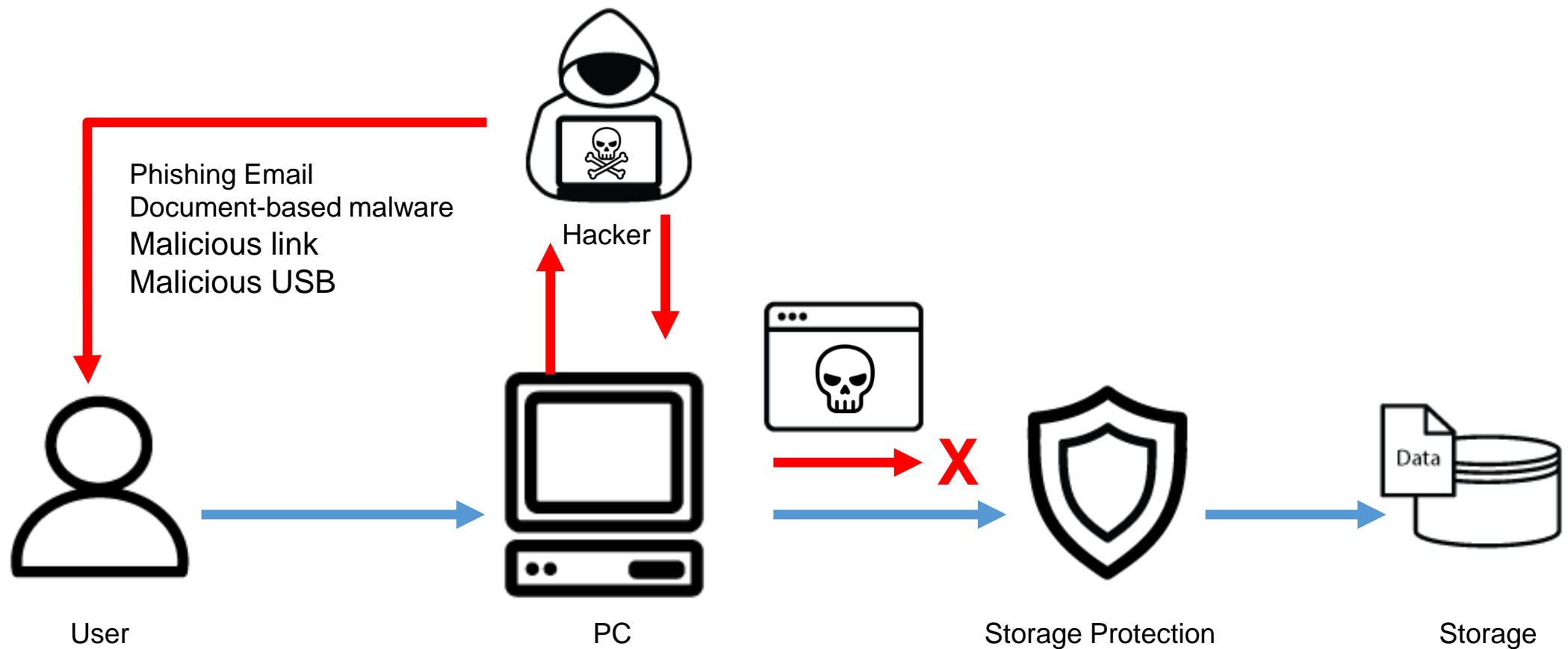
3. Protecting Data with X.1220



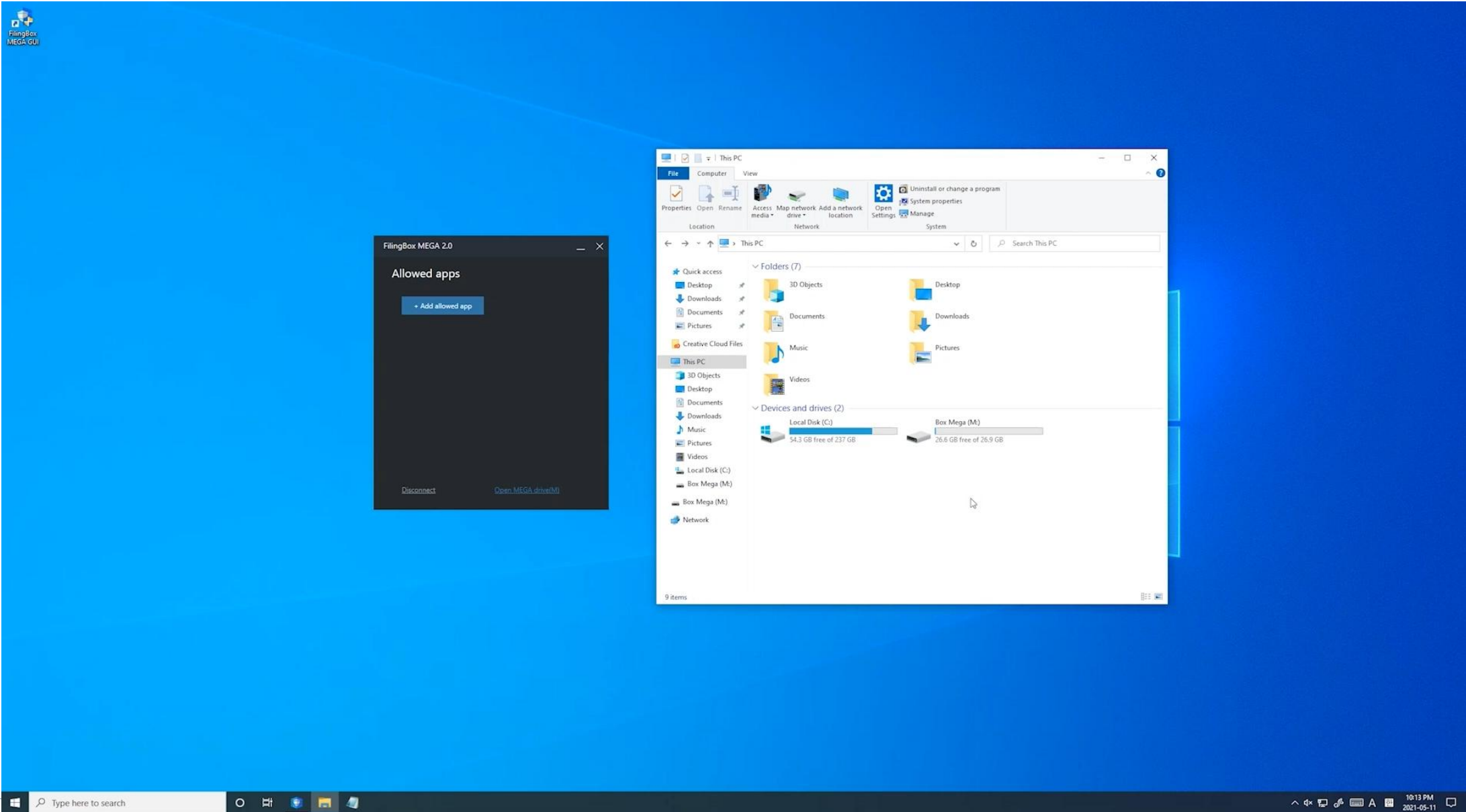
3. Protecting Data with X.1220



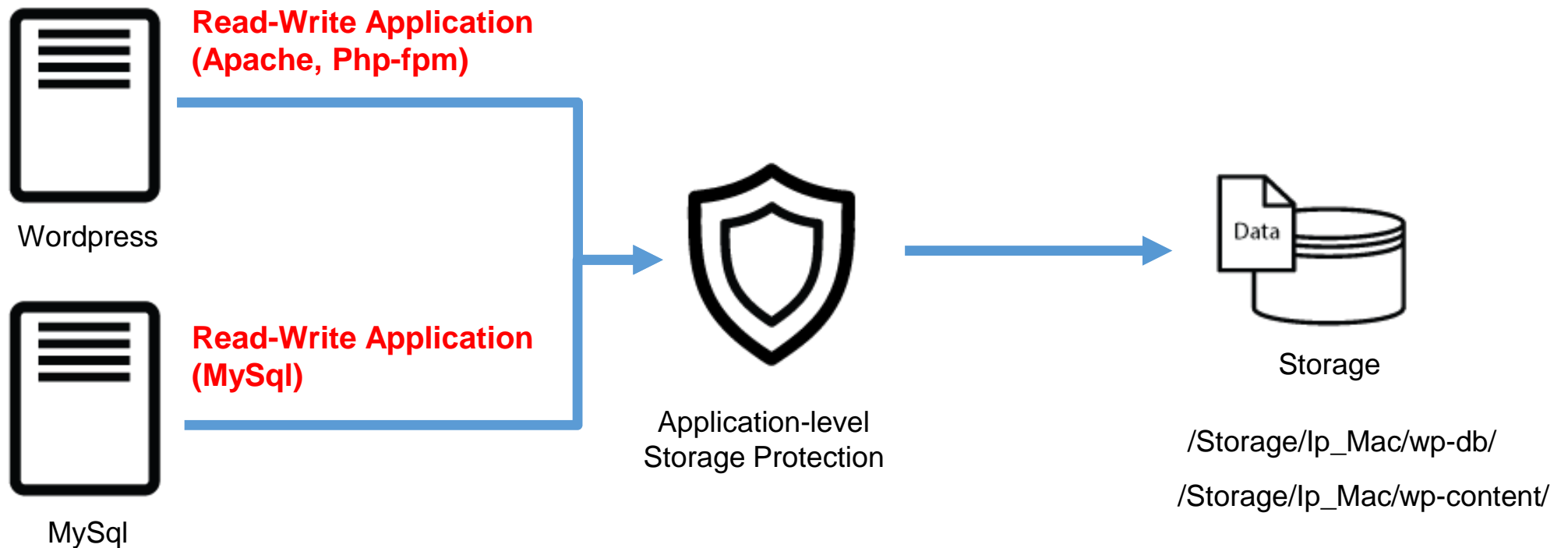
Blocks attempts to steal or encrypt files using administrator privileges on a PC.



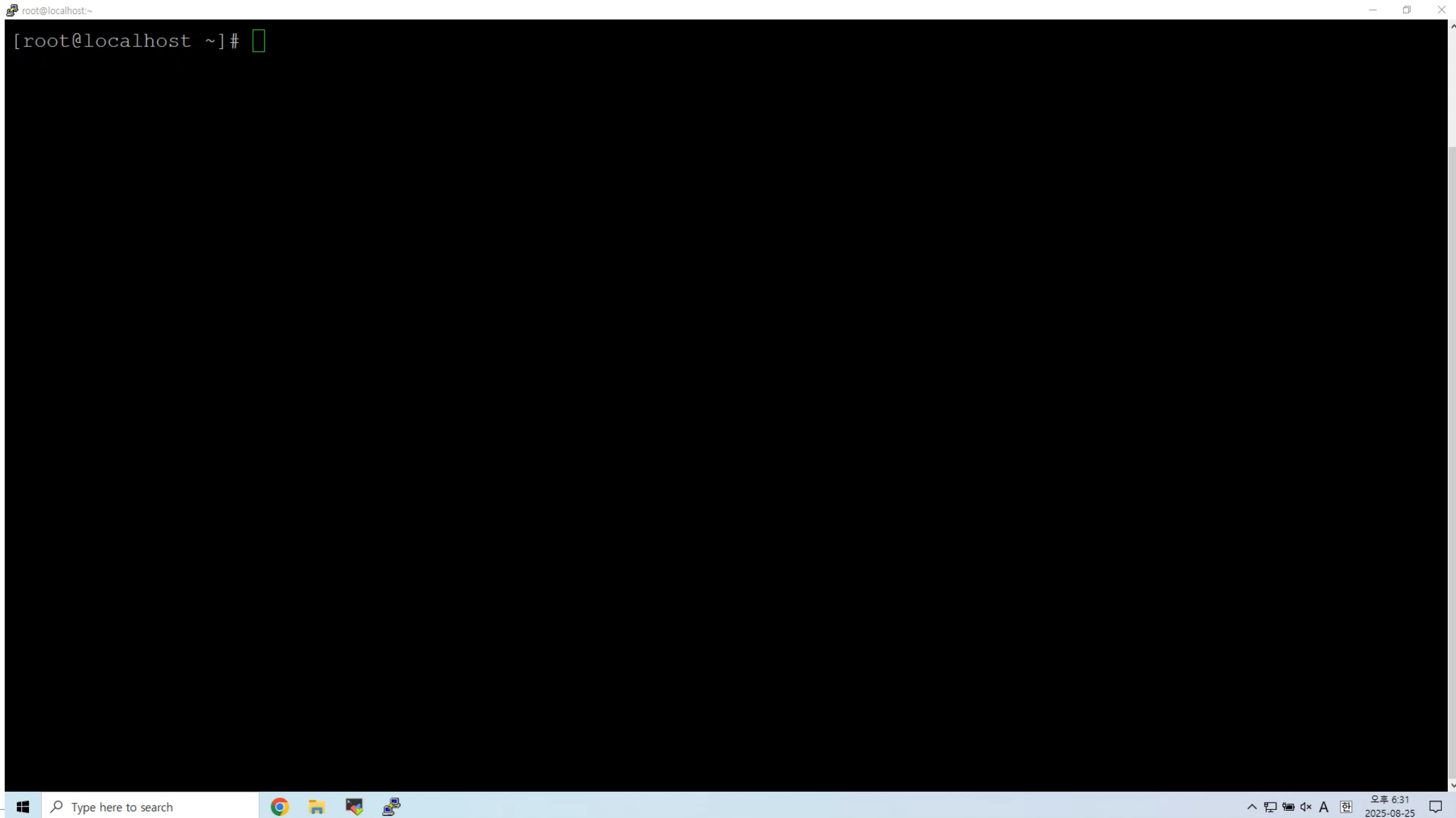
Protecting a Word file on PCs



Protecting user-uploaded files and database files on the WordPress server



Deleting database files with administrator privileges on regular storage



3. Protecting Data with X.1220

Stop administrator-privileged deletion of database files on storage protection

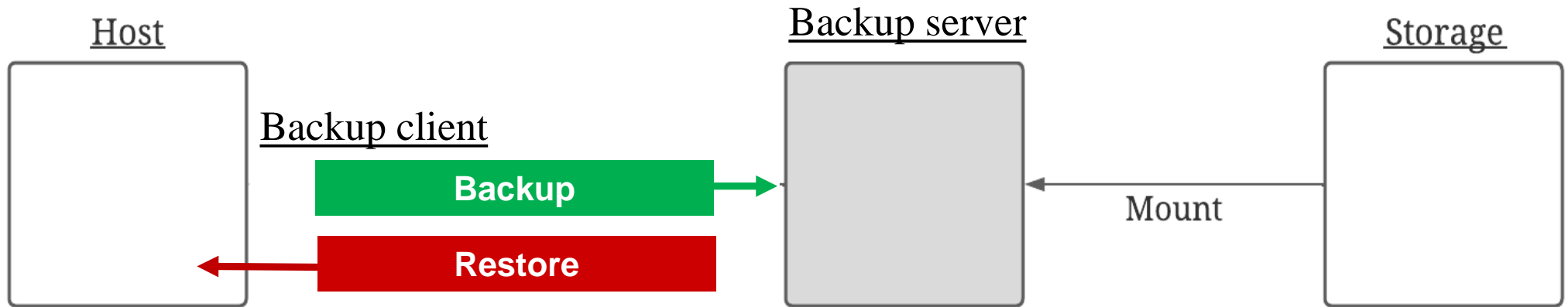
root@localhost/namusoftware/megaclient

```
[root@localhost megaclient]#
```

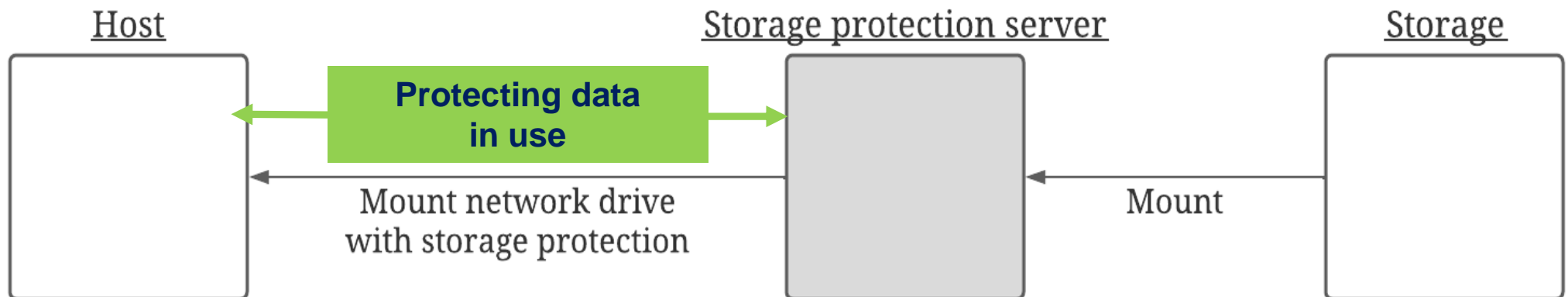
**How is Storage Protection
different from backup?**

Incident Prevention

Backup (focused on recovery after an incident)

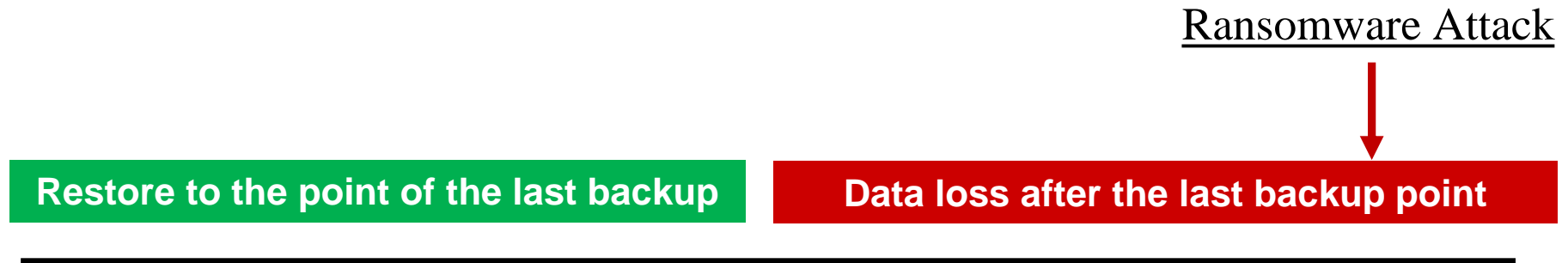


Storage Protection (focused on prevention before an incident)

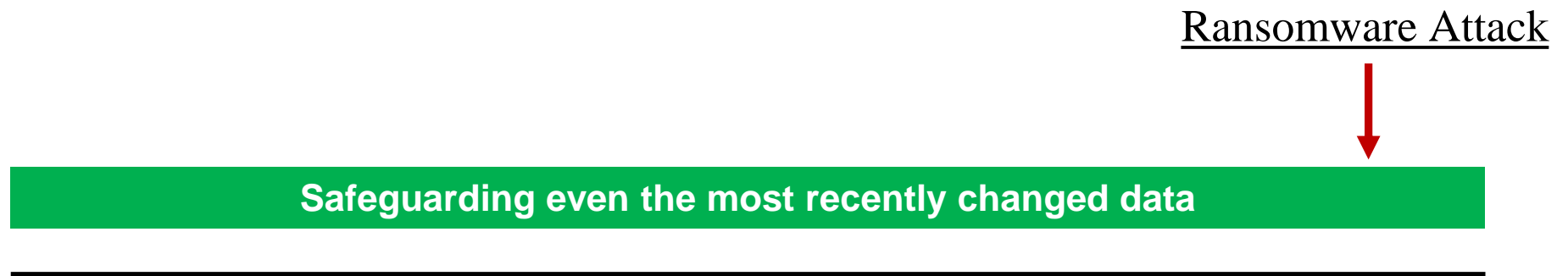


Protect even the final data

Backup (restores to the point of the last backup created)



Storage Protection (safeguards data up to the most recent state)



3. Protecting Data with X.1220

Name	Use cases
 KB 국민카드	KB Kookmin Card – Establishment of a collaborative file server to protect personal information of employees and partner companies.
 NH투자증권 NH INVESTMENT & SECURITIES	NH Investment & Securities – Deployment of an enterprise-wide file sharing system and establishment of export storage.
 MIRAE ASSET 미래에셋생명	Mirae Asset Life Insurance – Implementation of a secure file server system for collaboration.
 MG캐피탈	MG Capital (formerly M Capital) – Establishment of a business data backup system for ransomware response.
 KORAIL	Korea Railroad Corporation – Establishment of a file server to protect critical data on user PCs and prevent ransomware for the next-generation Nara Marketplace system.
 통계청	Statistics Korea – Implementation of a centralized document management system for population census data.
 안동시	Andong City Hall, Gyeongbuk – Implementation of a secure web hard system to prevent ransomware.
 단양군	Danyang County Office, Chungbuk – Establishment of a PC data backup system for ransomware response.
 Jindo	Jindo County Office, Jeonnam – Implementation of a cloud-based file sharing system for internal staff collaboration.
 보은군	Boeun County Office, Chungnam – Introduction of a secure web hard system to prevent damage and leakage of administrative data from staff PCs.
 칠곡군 CHILGOK-GUN	Chilgok County Office, Gyeongbuk – Implementation of a file sharing system for ransomware defense and collaboration.
 남동구	Namdong District Office, Incheon – Implementation of a centralized file management system.
 대덕구	Daedeok District Office, Daejeon – Establishment of a PC data backup system for ransomware response.
 광주광역시북구	Buk District Office, Gwangju – Implementation of a cloud storage system to prevent ransomware.

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[국제표준 스토리지 프로텍션 이해하기](#)



01

Security Challenges

02

Protecting Accounts
with X.1280

03

Protecting Data with
X.1220

04

Summary
Q&A

Our PCs and servers can be compromised!

**With X.1280 and X.1220,
we can protect accounts and data
even if PCs and servers are compromised.**

Contacts

John Jonghyun Woo

`jhwoo@passwordlessalliance.org`
