

2021  
May  
14

# Protect your domain name – your online identity





## Hong Kong Internet Registration Corporation Limited

- HKIRC is a not-for-profit organization set up in December 2001, and designated by the Government of the HKSAR to manage and administer all Internet domain names under .hk and .香港 country-code top level domain names
- As of 1 May 2021, the total registration of .hk and .香港 domain names:

282,195

# About me

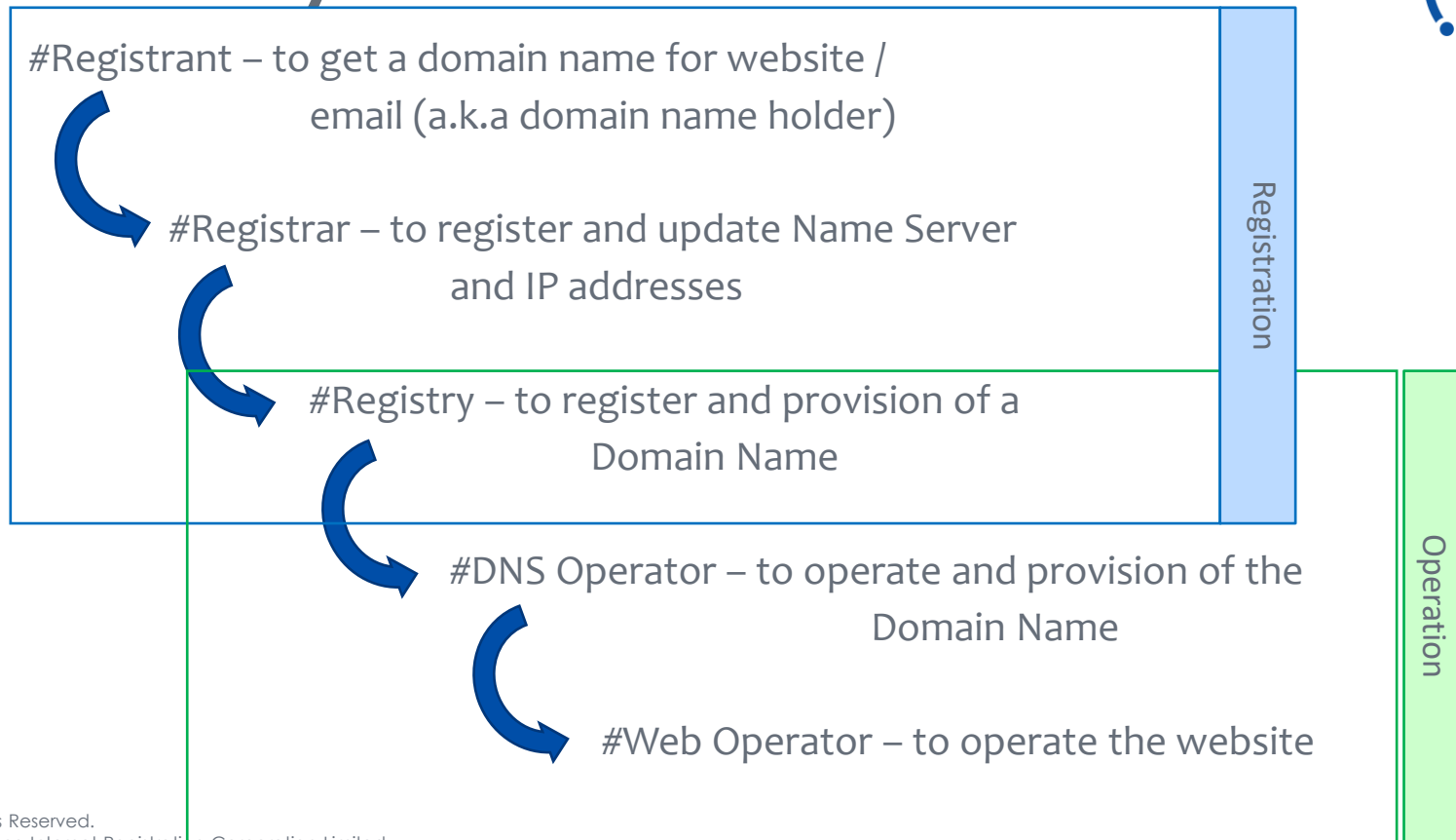


Ben Lee, Head of IT, HKIRC

- also has the role of Information Security Officer
- manages the technical and security of .hk and .香港 country code top level domain name (ccTLD)
- Over 15 years of experience in the domain name industry
- actively participates in the Internet community of the region, e.g. CDNC and APTLD



# DNS Ecosystem



# Why need to protect your Domain Name?



# Domain name your online identity



- Domain name is used to create Website and Email address for business
  - <https://www.mydomain.com.hk>
  - [customerservice@mydomain.com.hk](mailto:customerservice@mydomain.com.hk)

## Purpose of the online identity

- Boost business and brand awareness
- Build trust and loyalty
- Reach potential customers
- Reflect your business reputation



# What is at stake?



The damages to you could include:

## Website defacement

- your customers and visitors could lose confidence in your organisation; damage to your reputation could also be widely publicised.

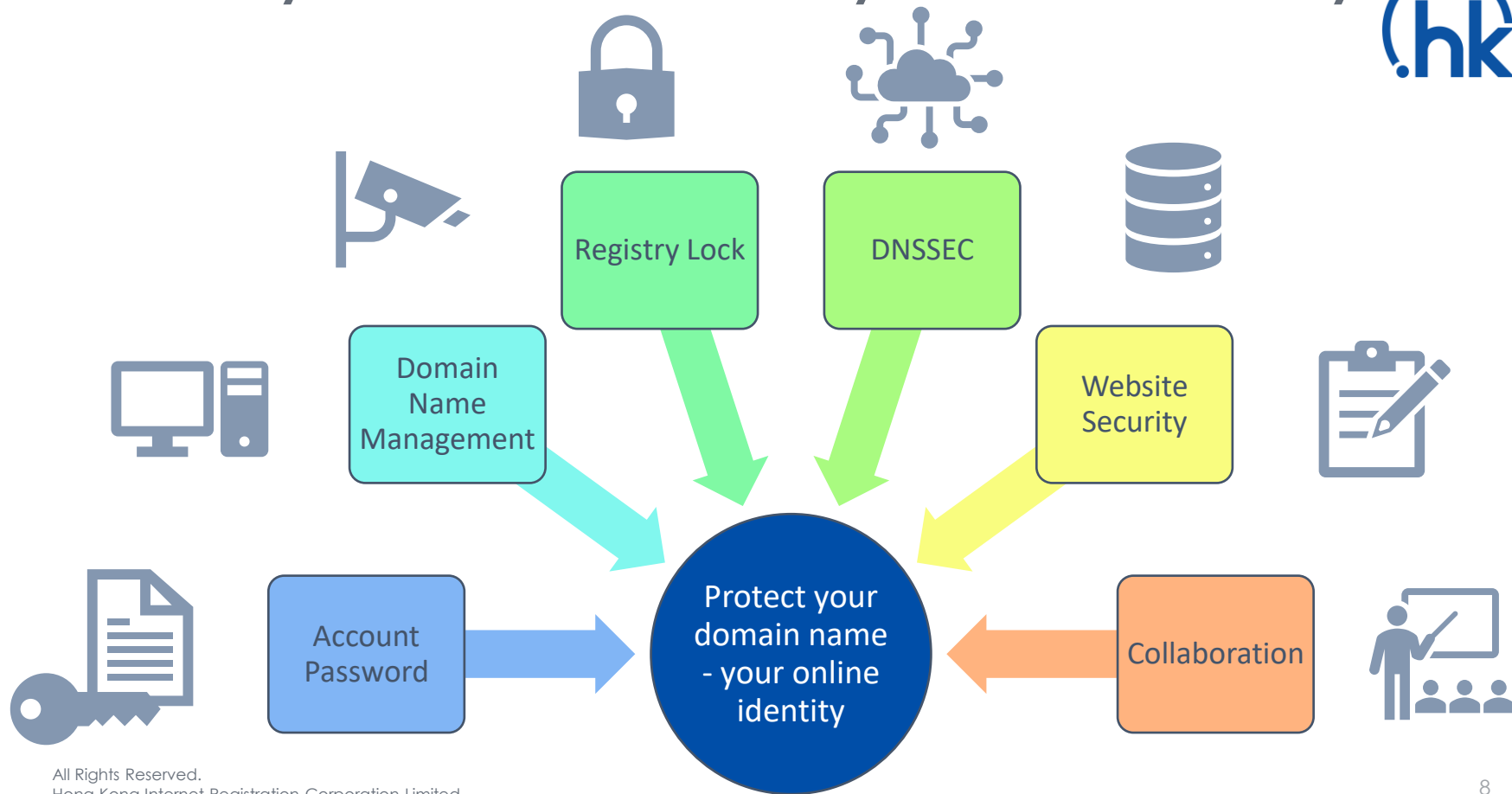
## Loss of revenue / disruption to operations

- if your website is your major sales channel or service portal, revenue loss and service disruption are inevitable during the hijacking.

## Leakage of confidential information

- email traffic could be diverted and stolen by cyber criminals; confidential correspondences would be compromised.

# Protect your domain name – your online identity





# Domain Name account Password Security



# How secure is my password?



- <https://howsecureismypassword.net/>

1. 123456
2. 123456789
3. password
4. 12345678
5. 111111
6. 123123
7. 12345
8. 1234567890
9. 1234567
10. qwerty
11. Abc123
12. 000000
13. 1234
14. iloveyou
15. Password1

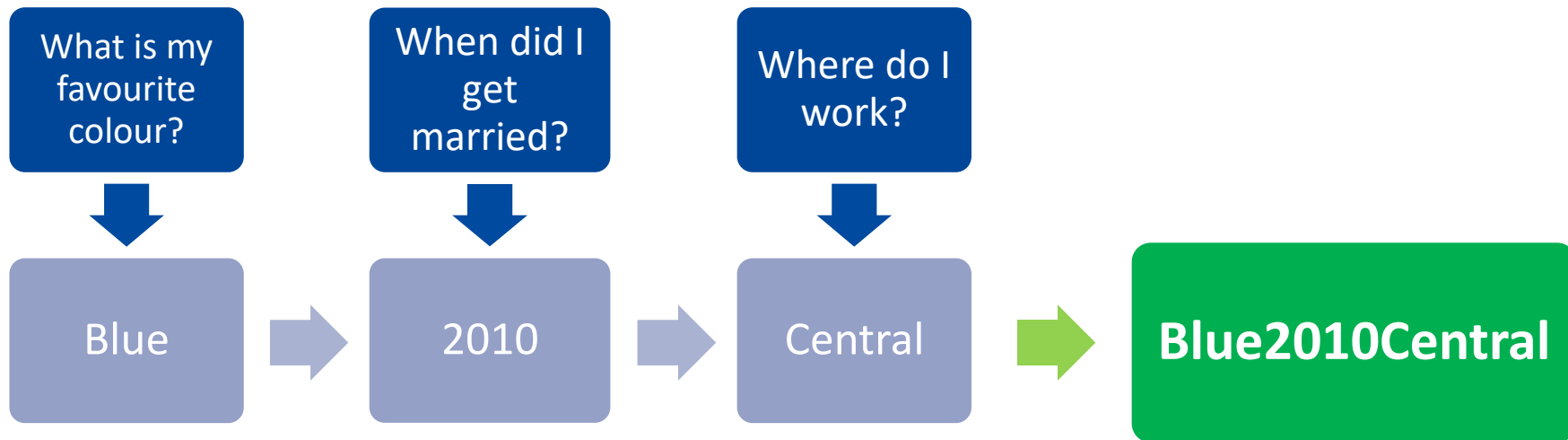


Bad



Good

# Creation of a Strong Password



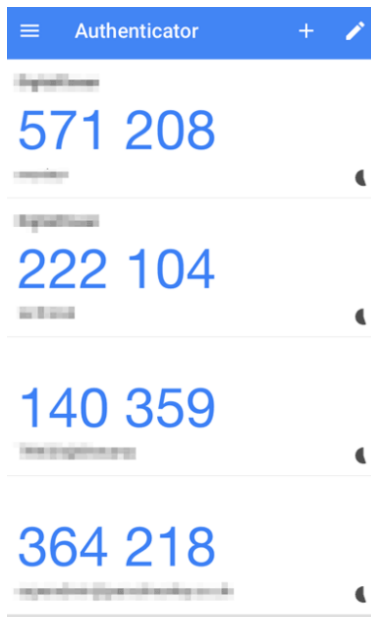
# Enable Two-Factor Authentication



- Two-Factor Authentication (2FA)
- or “Multi-factor authentication” (MFA)
- Hardware token
- Software token



Google Authenticator



# Domain name management Security

# Domain name management Security



## A trustworthy person to hold the domain name account

- Yourself, Your IT staff, Your service provider?

## Correct Registration info of the registrant, the domain name holder

- Business registration, ID
- Support appeal to the registry for help

## Keep contact info up-to-date

- typically have four points of contact: the registrant, technical, administrative, and billing contacts
- registrant contact usually takes precedence
- Consider to use Role account, in case an individual staff is on leave or absent.

## Monitor and watch out for email notices of domain name changes.

- Registrar communicate with the contact points, including Security related transactions. e.g. password changes, contact changes, etc.

## Timely Renew the domain name

- After expiry, the domain name could be taken by others with bad faith

# Registry lock





# What is .hk LOCK



Protect your .hk and .香港 domain names

- .hk LOCK is a registry lock service that protects your .hk /.香港 domain names from unauthorised seizure by cyber criminals, a malicious online activity commonly known as “domain hijacking”.
- By hijacking your domain names, the criminals can divert Internet traffic meant for your websites to other destinations, doing substantial and irreversible harm to your business and reputation.

# Benefits of using .hk LOCK:



## An extra, separate, layer of protection

- Beyond your registrar / ISP;
- Similar to the 2-factor authentication process commonly employed by Internet banking.

## Lowering of security risks

- Even if all of your domain name credentials are accidentally compromised
- .hk LOCK will be the final gatekeeper against unauthorised modifications.

## .hk LOCK will “lock” your domain names

- Against unauthorized changes.
- The prohibition is at the “registry side”, that is, at HKIRC’s system.

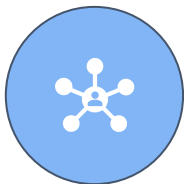
## Your appointed authorised persons only

- Only the authorised persons can “unlock” of the domain name for modification online via .hk LOCK system and panel.

## Unlock and automatic re-lock the domain name

- after the verification has been completed.
- Unlock for a short interval and automatically Re-lock the domain name

# Who should use .hk LOCK?



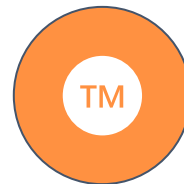
Anybody who  
conducts e-  
commerce and  
transacts  
confidentially with  
clients online



Any websites  
handling sensitive  
and confidential  
information



Banks and  
financial  
institutions,  
governmental  
departments,  
utilities and public  
services

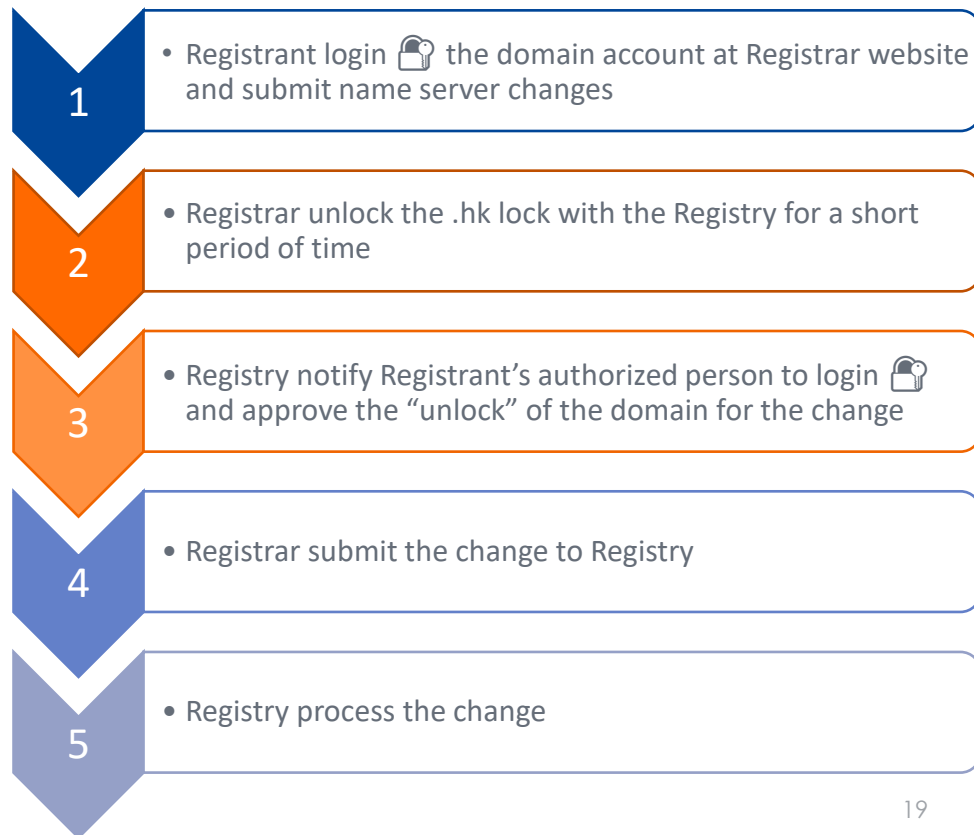
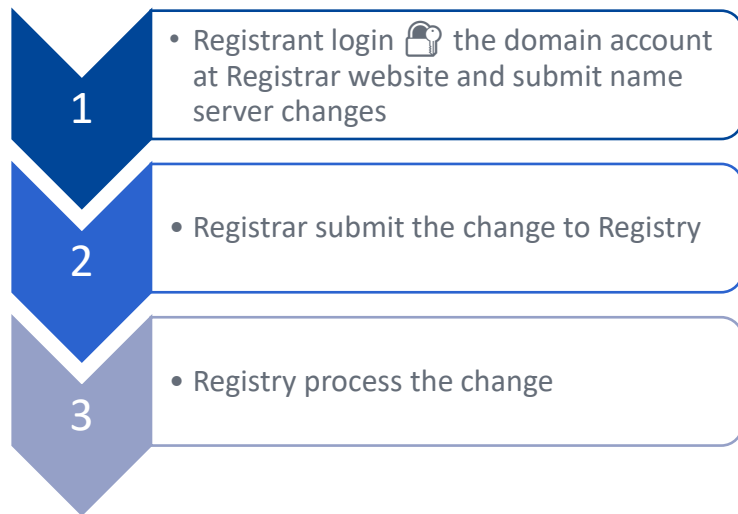


Owners of brand  
and trademark  
domain names



Online shops,  
online service  
providers

# Before and After using .hk LOCK



# How to check my domain name has .hk lock?



## WHOIS Result

### Domain Name Information

Domain Name: HKIRC.HK

### Status Information

Domain Prohibit Status: The domain name is protected by .hk LOCK

### Enquire .hk info (WHOIS)

hkirc.hk



I'm not a robot



Characters above are a graphical image that cannot be read by a machine. This prevents automated or electronic processes from gaining access to WHOIS information.

Search

# Other domain names with Registry Lock

Area / Region	Organisation	Domain names
Hong Kong	HKIRC	.hk .香港
China	CNNIC	.cn .中国
Canada	CIRA	.ca
Europe	EURID	.eu
France	AFNIC	.fr
United Kingdom	Nominet	.uk
Multi-national	Verisign	.com .net .tv .cc .name

# Enable DNSSEC for your domain name







# Why do We Need DNSSEC



**Denial of services** and data access



**Website (e-Commerce) traffic diversion**

- ❖ Theft of customer information
- ❖ Loss of revenue and reputation



**Email traffic diversion**

**Question:** is the existing security measures like anti-virus and network security solutions enough to protect your Internet presence?

## ◎ How does DNSSEC Work



- DNS is a very old protocol which has been in use since **1985**. DNS clients **does not check the authenticity** of the DNS answer.
- A fundamental flaw was discovered in 2008, which allowed malicious hackers to **poison a name server's cache**.
- Other attack vectors include: **man-in-the middle**, **DNS spoofing** and **fake DNS server**

## ◎ How does DNSSEC Work



- DNSSEC was created by Internet Engineering Task Force (IETF).
- DNSSEC was designed to conduct data origin authentication and ensure data integrity through the **Key Pairs** and **Digital Signatures** technologies.
- With key pairing technology, each DNS query can be verified via the “**Chain-of-trust**” and conduct **data origin authentication**.
- By verifying the digital signature with the DNS record, DNSSEC will be able to ensure **data integrity**.

## ◎ Benefits of DNSSEC



The result:

- Provide an **extra level of security** to improve reliability, trustworthiness and quality of the DNS ✓
- Help ensure that internet users will be **directed to the right website or service** they expect when they enter a domain name into their browser ✓
- Safeguard the Internet environment and **strengthen trust in the Internet** as a whole ✓

# Benefits of DNSSEC



The Internet community	Registrars	Website owners	ISPs
<ul style="list-style-type: none"><li>•Enjoying improved security in the zones that are signed;</li><li>•Reducing cyber crimes by fake websites</li></ul>	<ul style="list-style-type: none"><li>•Allowing them to offer domain signing services to their customers</li></ul>	<ul style="list-style-type: none"><li>•Increasing the security of the data returned to their customers</li></ul>	<ul style="list-style-type: none"><li>•Allowing users to verify domain names and corresponding IP addresses;</li><li>•Reducing security concerns from cyber attacks</li></ul>

# How to check my domain name has DNSSEC?



## WHOIS Result

### Domain Name Information

Domain Name: HKIRC.HK

### Status Information

DNSSEC: signedDelegation

### Enquire .hk info (WHOIS)

hkirc.hk

✓ I'm not a robot



Characters above are a graphical image that cannot be read by a machine. This prevents automated or electronic processes from gaining access to WHOIS information.

Search

# Website Security





# Keep your Website Safe



## 1. Software Update

- Update operating system, application and framework libraries

## 2. Data encryption (https SSL/TLS)

- Unauthorised person can steal or modify sensitive information in a web page to conduct identity theft, credit card fraud and other crimes.

## 3. Remote administration

- Adopt secure remote access solution for website administration

## 4. Authentication password

- Adopt strong authentication and password

# Keep your Website Safe



5. Alert notification

- Enable and review event logs and alerts

6. Search indexing

- Prevent data leakage through public search engine

7. Outsourcing

- Select web operator that can meet your security requirements

8. Security scan

- Conduct security vulnerability scanning or penetration test

# SME Website Security Scan Services



## HKIRC web scan service

### OBJECTIVES

- ✓ To assist SMEs in identifying and mitigating security issues
- ✓ To promote security awareness of SMEs on the importance of cyber security
- ✓ To share cyber security best practices

### SCANNING PROCESS



## Free SME In-depth Website Security Scan Services

According to Internet surveys, there is **ONE hacker attack for every 39 seconds**. It is crucial to be alert and enhance one's website security, no one can afford being attacked. As part of the .hk community, we understand how cyber security is important to you, and we are offering a **free website security scan** exclusively to our SME .hk domain owners.



# Security is a Collaborative Effort

# Cybersec Infohub



**Cybersec  
Infohub  
a New Stage**



Cybersechub.hk



Professional  
Insights



Daily  
News



Ask  
Online



Member  
Events



<https://www.cybersechub.hk/en/aboutus/howtojoin>

**Join Us Now**

# References and Websites



# References and Websites



Cybersec Infohub

- <https://www.cybersechub.hk>



**Cybersechub.hk**

HKIRC

[https://www.hkirc.hk/en/our\\_services/cybersecurity\\_services/](https://www.hkirc.hk/en/our_services/cybersecurity_services/)



Cyber Security Information Portal

- <https://www.cybersecurity.hk>



**Cyber Security Information Portal**

# References and Websites



## InfoSec

- <https://www.infosec.gov.hk>



## GovCERT.HK

- <https://www.govcert.gov.hk>



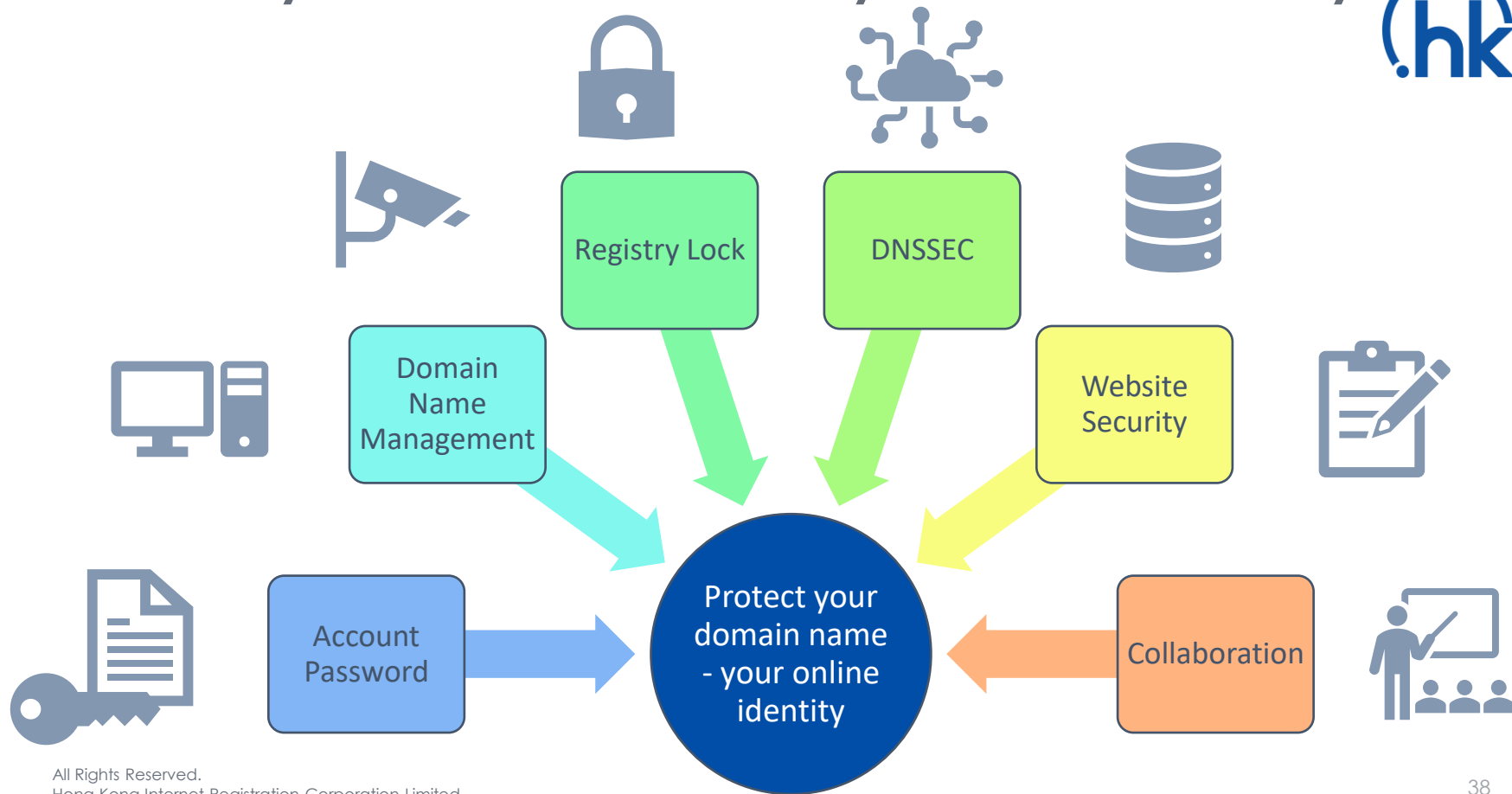
## HKCERT

- <https://www.hkcert.org/security-guideline>





# Protect your domain name – your online identity



# Thank You

