



ANNUAL REPORT 2021

HIGHLIGHTS OF 2021

1.1 Summary of Major Activities

As the COVID-19 epidemic continues to impact our daily lives, the public is becoming more dependent on e-services. On the other hand, the associated cyber threats grow in scale and sophistication and bring significant impacts on the smooth operation of e-services. The Government Computer Emergency Response Team Hong Kong (GovCERT.HK) is committed to strengthening the security measures of the government systems and Internet infrastructure, as well as collaborating with various stakeholders to provide a reliable and secure cyber world for the community.

We attach great importance to information security and facilitate the protection by the departments of the Government of the Hong Kong Special Administrative Region of the People's Republic of China (the Government) of their information infrastructure and data assets against cyber threats by various effective measures, through such measures as monitoring cyber threat trends, conducting risk assessments, and providing security alerts and advice. Numerous webinars and trainings were also organised to raise the information security awareness of the government staff and refreshing their knowledge in dealing with the latest cyber security threats and evolving technologies. In addition, the annual inter-departmental cyber security drill was held to strengthen the capability of government departments to defend against emerging cyber attacks and foster cyber security collaboration among the GovCERT.HK, the Hong Kong Police Force (HKPF) and other government departments.

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To strengthen the overall defensive capability and resilience of the city against cyber attacks, we continued to promote trusted partnership and closer collaboration among local cyber security stakeholders across different sectors for sharing cyber security information and providing actionable insights to the community via the Partnership Programme for Cyber Security Information Sharing (Cybersec Infohub, www.cybersechub.hk). The programme kept on a steady growth of membership base with some 870 organisations, which was more than double as compared with 2020.

Situational awareness helps organisations and individuals protect their assets in the cyber realm. In 2021, we continued publishing threat trends, early warnings and advice through the GovCERT.HK web portal (www.govcert.gov.hk) to enhance government departments' understanding of the cyber threat environment, the associated risks and impacts, and also the adequacy of the risk mitigation measures.

We also put a lot of efforts in promoting security awareness and raising defensive capabilities among local enterprises and the community by collaborating with various major cyber security stakeholders to hold cyber security publicity events regularly.

HIGHLIGHTS OF 2021

1.2 Achievements and Milestones

Cyber Security Information Sharing

With the objective to foster cross-sector collaboration for a better visibility of cyber threats, Cybersec Infohub has been receiving critical acclaim and support from the industry. In 2021, the participating organisations from a wide spectrum of industries have more than doubled and so has the number of posts shared in the collaborative platform. To facilitate users with different levels of background in utilising the information shared in the collaborative platform, we implemented a new user interface to suit the needs of business users as well as cyber security professionals. A lot of system enhancements and new features were also implemented to further strengthen the sharing capability of the platform and enhance the user experience. For example, the machine-to-machine sharing application programming interface was implemented to facilitate automatic integration of cyber threat information with the systems of member organisations for more timely responses when tackling potential cyber threats.

Furthermore, we successfully organised 10 member events, including thematic webinars, technical professional workshops and closed-group discussion, to build a better trust and closer bonding among members.

HIGHLIGHTS OF 2021

Liaison and Collaboration

We worked closely with the Computer Emergency Response Team (CERT) community and actively participated in the Asia Pacific Computer Emergency Response Team (APCERT) activities in handling threat information and coordinating incidents. We also supported our working partners in organising various events, such as the Capture the Flag (CTF) Challenge 2021, the Cyber Youth Programme 2021 and the Cyber Security Competition 2020/21 organised by the Hong Kong Computer Emergency Response Team Coordination Centre (HKCERT), the Hong Kong Internet Registration Corporation Limited (HKIRC) and HKPF respectively.

Awareness Building and Public Education

Human element is often regarded as the weakest link in information security. To elevate the security awareness against phishing attacks in the Government, an “Anti-Phishing Resources Centre” was launched with interactive quizzes and lively promotional materials to refresh our government staff with the latest tactics and techniques to protect themselves from getting phished.

GovCERT.HK also endeavours in public education to enhance the knowledge and capability of the public to defend against cyber attacks. In 2021, we organised 16 school visits and several security talks for the elderly in response to the increasing adoption of digital technology.

ABOUT GovCERT.HK

2.1 Introduction

The Government Computer Emergency Response Team Hong Kong (GovCERT.HK) is a governmental Computer Emergency Response Team (CERT) responsible for coordinating incident responses for over 80 departmental Information Security Incident Response Teams (ISIRTs) of the Government.

Since its establishment, GovCERT.HK has profoundly shaped the management framework and coordination mechanism of incident handling, and empowered close collaboration with the industry, critical Internet infrastructure stakeholders and the global CERT community for timely exchange of cyber threat information and coordinated responses.

GovCERT.HK works closely with HKCERT and local industries on cyber threat intelligence sharing, capability development, public education and continuous promotion on cyber security through social and mass media. GovCERT.HK also actively collaborates with other governmental and regional CERTs, and international organisations in sharing cyber threat intelligence and incident information; participating in training events, workshops, forums and drills; and organising activities for public awareness promotion and capability development.

2.2 Establishment

GovCERT.HK was established on 1 April 2015 through the consolidation of internal information technology (IT) security teams within the Office of the Government Chief Information Officer (OGCIO) of the Government.

2.3 Resources

GovCERT.HK is an establishment under OGCIO and funded by the Government.

2.4 Mission and Constituency

Being the governmental CERT, GovCERT.HK centrally manages incident responses within the Government and develops CERT-related services to assist government departments in understanding the associated risks of information and cyber security, implementing appropriate security measures, monitoring potential threats and responding to security events with a view to ensuring that the government's information infrastructure is well protected.

ACTIVITIES AND OPERATIONS

3.1 Scope of Services

GovCERT.HK is the CERT for the Government, providing centrally managed incident response services and timely security advice, coordinating cyber security drills, promoting public awareness and capabilities, and engaging global CERT community with a view to enhancing information and cyber security in the region.

3.2 Security News Bulletins

In 2021, GovCERT.HK published the following security bulletins to raise the awareness among government users and the general public.

- “Security Vulnerabilities and Patches” information was consolidated on every working day and disseminated to registered subscribers through emails;
- “Security Industry News” was gathered on every working day and top news with wide impact was compiled and disseminated to registered subscribers through emails; and

- “Weekly IT Security News Bulletins” was published every week to summarise selected recent security news and product vulnerabilities for security practitioners’ reference. The Bulletins were distributed to registered government subscribers through emails and posted on the GovCERT.HK website as public information.
(www.govcert.gov.hk/en/secbulletins.html)

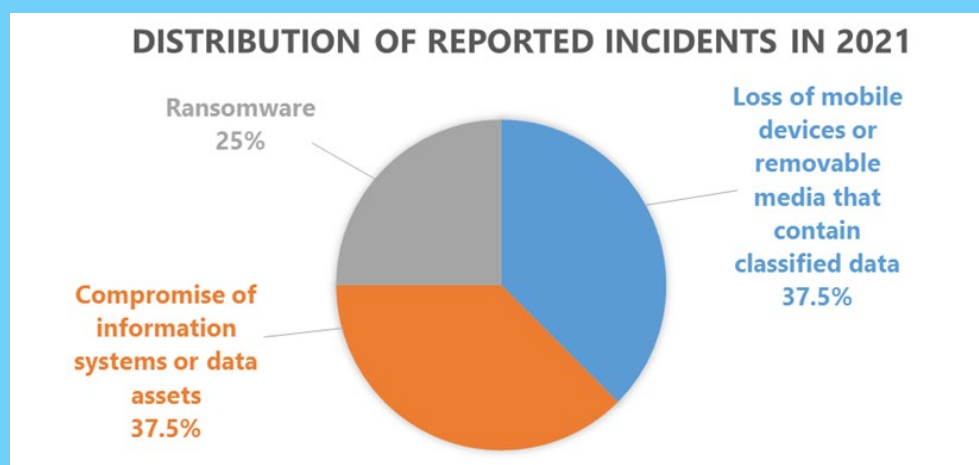
3.3 Alerts and Advisories

To meet the challenges of the increasing cyber security threats, we continued to strengthen the collection and analysis of cyber risk information from more sources and make use of big data analytics to provide targeted and timely warnings to government departments, so that early warnings of vulnerabilities and threats could be issued and timely preventive measures could be taken. In 2021, GovCERT.HK issued over 170 security alerts for known security vulnerabilities in computing products that are widely used in government installations. For those vulnerabilities with greater potential impacts on the Government, we took proactive steps to ensure all government departments addressed the vulnerabilities in a timely manner so as to mitigate the risks of exploitation.

We also kept on analysing cyber security threats shared by various sources and identified by our detection capabilities. In response to any imminent threats posed to the Government, our security advisories would provide government departments with our latest observations and appropriate actionable advice.

3.4 Incident Handling Reports

In 2021, GovCERT.HK handled eight reported incidents that were related to government installations. The following chart shows the types of reported incidents handled in 2021.

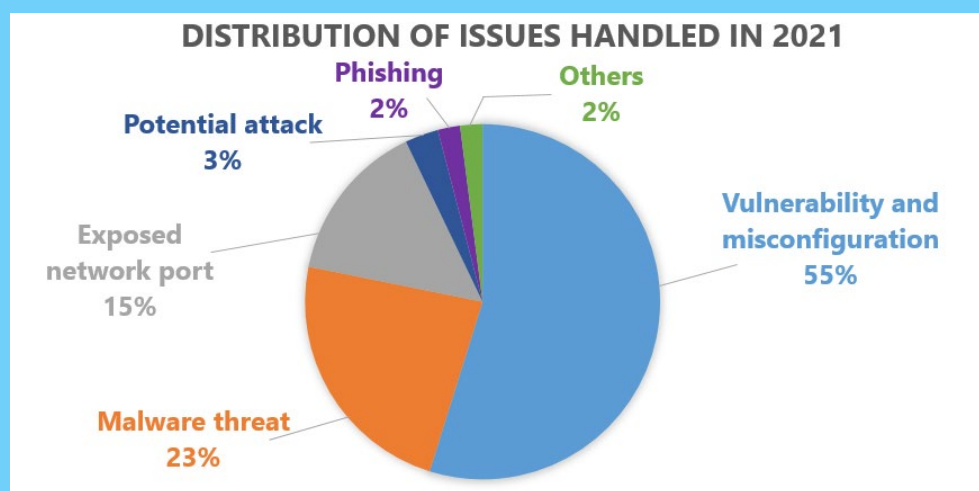


To facilitate public access to the statistics of information security incidents in the Government, relevant data has been made available on the Government's Public Sector Information Portal.

(www.data.gov.hk/en-data/dataset/hk-ogcio-sec_div_01-information-security-incident)

3.5 Abuse Statistics

In 2021, GovCERT.HK also dealt with around 200 cyber security issues by assisting government departments in taking effective and prompt measures to prevent and reduce the risks and impacts of cyber attacks on their information systems . The following chart shows the types of security issues handled in 2021.

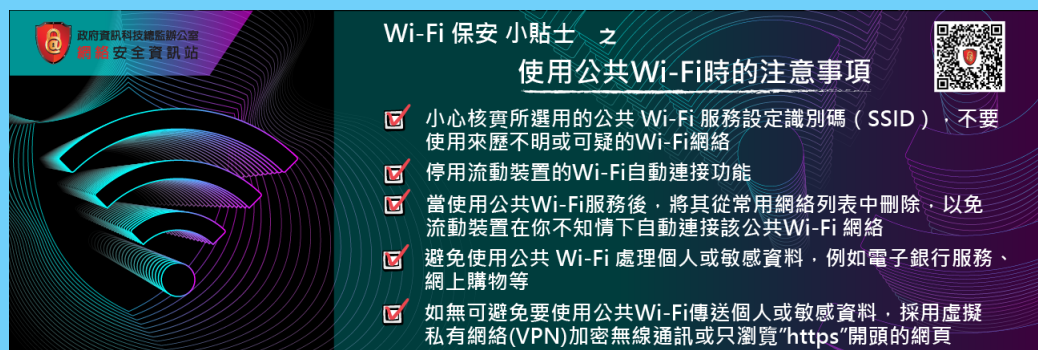


3.6 Publications and Mass Media

In this era of digital transformation, every generation starts adapting to digital living and relies more heavily on technologies. Associated with more digitalisation are more risks. To actively reach out to the targeted audience, we continued to launch various promotional activities through multiple channels such as radio broadcast, social media (like YouTube, Facebook and Twitter) and school visits to share tips and best practices against cyber threats.

- We partnered with Radio Television Hong Kong (RTHK) to broadcast radio episodes “e-World Smart Tips” every Saturday morning to help the public understand more about information security in various aspects and raise their awareness of the issue. The radio episodes in each month featured a specific theme and offered associated tips on mitigating the risks of cyber threats through daily life examples and in a lively and interesting way. In 2021, we covered a wide range of topics including Wi-Fi security, safe online shopping, phishing attacks, social networking security, Internet of Things (IoT) devices security, and more.

(www.cybersecurity.hk/en/media.php#Radio)



- A set of practical guidelines with different themes were published to educate small and medium enterprises and the public to guard against cyber attacks. (www.cybersecurity.hk/en/resources.php#leaflets)



- To raise public awareness of Internet safety and etiquette, we organised the “Be Smart Online, Stay Away from Pitfalls” GIF Graphic Design Contest in 2021. Participants designed sets of innovative and creative GIF graphics to convey the message of Internet safety and etiquette. The winning entries are made as instant messaging stickers and now available at www.cybersecurity.hk/en/contest-2021.php. Anyone may download them and share with his/her family and friends.



- By leveraging the OGCIO Facebook page, we have shared a series of posts with timely updates and tips on cyber security topics such as supply chain attack and cyber-bullying. The social media channel with highlighted key points and linked resources helped strengthen our communications with the public. (www.facebook.com/OGCIOHK)



3.7 GovCERT.HK Technology Centre

To facilitate the development of government staff's capability in more specialised knowledge and skills to tackle evolving cyber threats, our GovCERT.HK Technology Centre offers government departments a controlled environment with relevant facilities and equipment for tackling potential security issues. The overall security of government web applications and services is enhanced by making use of such tools to identify web vulnerabilities, misconfigurations, compromised passwords, etc.

EVENTS ORGANISED / HOSTED

GovCERT.HK regularly organises awareness trainings and solution workshops to share the latest knowledge on security measures, best practices, skills and security solutions with various levels of government users to continuously strengthen their knowledge on cyber attacks and enhance their information security skills, thereby strengthening their capabilities in guarding against cyber attacks.

4.1 Training

In 2021, we organised various webinars and trainings for government users as well as IT staff to raise their information security awareness and update their knowledge of the latest IT security technologies and solutions. Over 2 000 government staff members participated in these events, which covered a broad range of topics including security measures and best practices for remote working, defence against phishing, operating system security, promotion of various security solutions, etc.

To facilitate government departments' obtaining hands-on experience in various IT security solutions, different security solution vendors were invited to deploy their cutting edge solutions to the Security Solution Showcases Platform. Also, the platform was upgraded to allow government departments to access remotely in order to encourage the acquisition of latest security solutions for protecting government information systems and data assets.

4.2 Drills and Exercises

Inter-departmental Cyber Security Drill

GovCERT.HK coordinates government departments to conduct the annual inter-departmental cyber security drills to enhance their incident handling capabilities and test their familiarity with the predefined incident response procedures.

In 2021, we continued to organise the drill with the Cyber Security and Technology Crime Bureau (CSTCB) of HKPF to strengthen the cyber security incident response capability of the Government. Due to the epidemic situation, the drill was held online with around 40 government departments and 100 government incident response practitioners joined. It included a scenario-based table-top exercise and an incident response workshop.

Anti-Phishing Resources Centre

To further support the promotion of phishing awareness in the Government, a thematic web page of “Anti-Phishing Resources Centre” was launched in 2021. The resource hub consolidates promotional materials, including interactive quizzes, infographics, animations, posters and etc., to promote to government users with the latest threat trend and phishing techniques.

APCERT Drill

As an Operational Member of the APCERT, GovCERT.HK participated in the APCERT Drill with the theme of “Supply Chain Attack through Spear-Phishing – Beware of Working from Home” in August 2021. GovCERT.HK played the role of Exercise Controller in addition to Player and Observer in the drill.

4.3 Conferences and Seminars

Build a Secure Cyberspace Promotional Campaign

To enhance the knowledge to avoid cyber pitfalls and build the law-abiding awareness of the public, a series of promotional activities under the theme “Be Smart Online, Stay Away from Pitfalls” were organised in 2021 for businesses, organisations, schools and the public to raise their cyber security awareness and strengthen their cyber security postures.

- Two webinars were organised under the “Build a Secure Cyberspace” promotional campaign in May 2021 and September 2021, aiming to raise public awareness of cyber security and introduce precautions against cyber attacks.



School visits, InfoSec Tours with RTHK

To promote cyber security awareness and cyber etiquette in the community, GovCERT.HK organised visits to primary schools, secondary schools and tertiary institutions to deliver information security talks to students, teachers and parents. GovCERT.HK also partnered with RTHK to deliver InfoSec Tours using pre-recorded talks on the platforms of RTHK and YouTube, aiming to deliver information security message in a relaxing way.

(www.cybersecurity.hk/en/school-visit.php)

- A number of school visits were conducted in 2021, reaching out to students, teachers and parents to raise their awareness of cyber security and instil them with the proper attitude in using the Internet.
- In response to the increasing adoption of digital technology by the elderly in their daily lives, OGCIIO also conducted security talks for them to raise their cyber security awareness.
- Two InfoSec Tours videos with topics of “Responding to the temptation of the online world” and “Study at home safely” were produced for broadcasting.



Cybersec Infohub engagement activities

To encourage the engagement and effective discussion among different sectors under the Cybersec Infohub partnership programme, various activities such as sector-specific closed group meetings, technical professional workshops and webinars were arranged in 2021 with positive responses received.



LOCAL AND INTERNATIONAL COLLABORATION

5.1 Local Collaboration

Cybersec Infohub

To foster closer collaboration among local information security stakeholders of different sectors to share cyber security information through the Cybersec Infohub programme, GovCERT.HK continued promoting and operating the programme side by side with HKIRC since September 2020. The programme has attracted some 870 participating organisations and more than 1 800 representatives from various sectors as of end of 2021.



We have always been encouraging exchanges of cyber security information within key industries with higher risks to cyber attacks, such as banking sector and Internet services providers. To enable closer collaboration in insurance sector, we collaborated with the Hong Kong Insurance Authority to motivate their members to actively participate in the programme and share information with other sectors.

Internet Infrastructure Liaison Group (IILG)

To help maintain the healthy operation of the Internet infrastructure of Hong Kong, GovCERT.HK continued to support the IILG which was established and led by OGCIO to foster closer liaison with the Internet infrastructure stakeholders, aiming to collaborate with the stakeholders for the smooth operation of the local Internet infrastructure. In 2021, the IILG collaboration mechanism was activated four times to support major events and take precautions against cyber threats.

Cyber Security Professional Awards (CSPA)

The CSPA 2021 was co-organised by CSTCB, GovCERT.HK and HKCERT, to recognise the excellence of cyber security personnel in safeguarding cyber security of Hong Kong and serve as an opportunity to showcase their unique capabilities. The CSPA has been providing a platform for cyber security professionals across sectors to share their knowledge and experience, which also aims at building an intact cyber ecosystem.



Nurturing Cyber Security Talents

We reckon that cyber security talents are instrumental in creating a safe environment for the economy to thrive. We continue to collaborate with and support our working partners to organise various programmes and campaigns in order to attract the young generation to develop their professional skills in cyber security and join the information security industry in a long run.

To arouse cyber security awareness and enrich the knowledge of cyber threats among the students in Hong Kong, we supported CSTCB in holding the Cyber Security Competition 2020/21 with the theme “Cyber Security Starts from You”, which attracted over 12 000 participants. The competition included events such as cyber security quizzes, interactive games and a presentation.

We also supported CSTCB to organise the Cyber Security Expo 2022, taking the theme on technology application and cyber security, to feature a series of activities for the participants. Among the activities, Cyber Security Innovation Challenge for students was open for submission in October 2021 and it attracted more than 300 participating schools.

In addition, we supported HKCERT in organising “CTF Challenge 2021” to strengthen the cyber security skills and awareness of young people and nurture more talents, with some 310 teams to compete. CTF also encouraged problem solving through teamwork and creative thinking in coping with the cyber security tasks to gain real life experience.



Last but not least, we also supported HKIRC to organise the HKIRC Cyber Youth Programme 2021 with an aim to nurturing technology talents with professional knowledge and skills. Over 100 students joined a four-day cyber security course for free to get a taste of the latest cyber security equipment and tools, as well as to learn cyber security knowledge and skills.

5.2 International Collaboration

To foster closer collaboration with international security experts for sharing experience in information security and strengthening the knowledge of emerging cyber threats, vulnerabilities and appropriate mitigation solutions, GovCERT.HK strives to learn from the CERT community on global trends in international standards development, global information security and data privacy policies, cyber crime initiatives and technological researches.

GovCERT.HK participated in the following events in 2021:

- 2021 China Cybersecurity Week
- Annual Technical Meeting for CSIRTs with National Responsibility
- APCERT Annual General Meeting and Conference
- APCERT Drill
- APCERT online training sessions
- APISC Security Training
- CNCERT/CC Annual Conference
- CNCERT/CC Online Conference for International Partnership
- FIRST Annual Conference

FUTURE PLANS

6.1 Upcoming Projects

In view of the rapid development of e-government services and the increasingly complex cyber threats, we will launch a comprehensive health check programme, in which additional and in-depth health checks will be conducted, and followed up with testing services for government Internet-facing systems and public-facing mobile applications. The programme aims at further strengthening the government security posture by adding an extra layer of security verification to government departments' own standing assessment processes. The proactive approach will improve the visibility of the overall security status of government systems, thus enabling the Government to formulate complete and pragmatic recommendations.

In addition, we will further support and facilitate the promotion of phishing awareness in the Government, by starting a new round of phishing drill campaign.

6.2 Future Operations

Facing the ever-increasing cyber attacks, GovCERT.HK is striving to collaborate with different stakeholders to further promote cyber security and nurture future talents such as liaising with HKCERT to organise another round of CTF Challenge for the community to increase their interests and knowledge in cyber security and a new promotional campaign to help small and medium enterprises in preventing and handling security incidents.

To enable a more fruitful sharing and closer collaboration in the Cybersec Infohub, we will further promote the programme, explore more collaboration opportunities with various industries, such as arranging closed group experience sharing sessions and leveraging the platform to enable more effective sharing of cyber threat intelligence.

CONCLUSION

The proliferation of cyber attacks, coupled with the growing cyber threats associated with artificial intelligence, blockchain, cloud computing and financial technology, has posed ever-increasing challenges on cyber security. GovCERT.HK will strive to work closely with various stakeholders, both locally and globally, to maintain a secure, stable and reliable e-government and cyberspace for a safer and better tomorrow.

Contact: cert@govcert.gov.hk

Websites: www.govcert.gov.hk
www.cybersechub.hk
www.cybersecurity.hk
www.infosec.gov.hk