



# CYBERSECURITY THREAT MANAGEMENT(CSTM)





## Garranto Academy

Garranto Academy has been at the leading edge of learning and training since 2016. Garranto Academy is a Singapore-based EdTech that offers skill development training to people globally. Garranto Academy is a trustworthy training partner in the Asia-Pacific region



### NATIONAL SKILL DEVELOPMENT

Collaborate with the Ministry of Education on this goal to aid the knowledge gap and skills gap..



### CORPORATE TRAINING

Helps organizations in fixing and closing the knowledge gap globally.



### EXPERT TALK/MASTER CLASS

Expert Talk is an initiative by the Garranto Academy that will enhance your skills



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# CYBERSECURITY THREAT MANAGEMENT PROGRAMME OBJECTIVE

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**Understanding the Cyber  
Security & Information Security  
concepts**



**Understanding the Cyber Threats**



**Understanding Cyber Security  
Management frameworks**



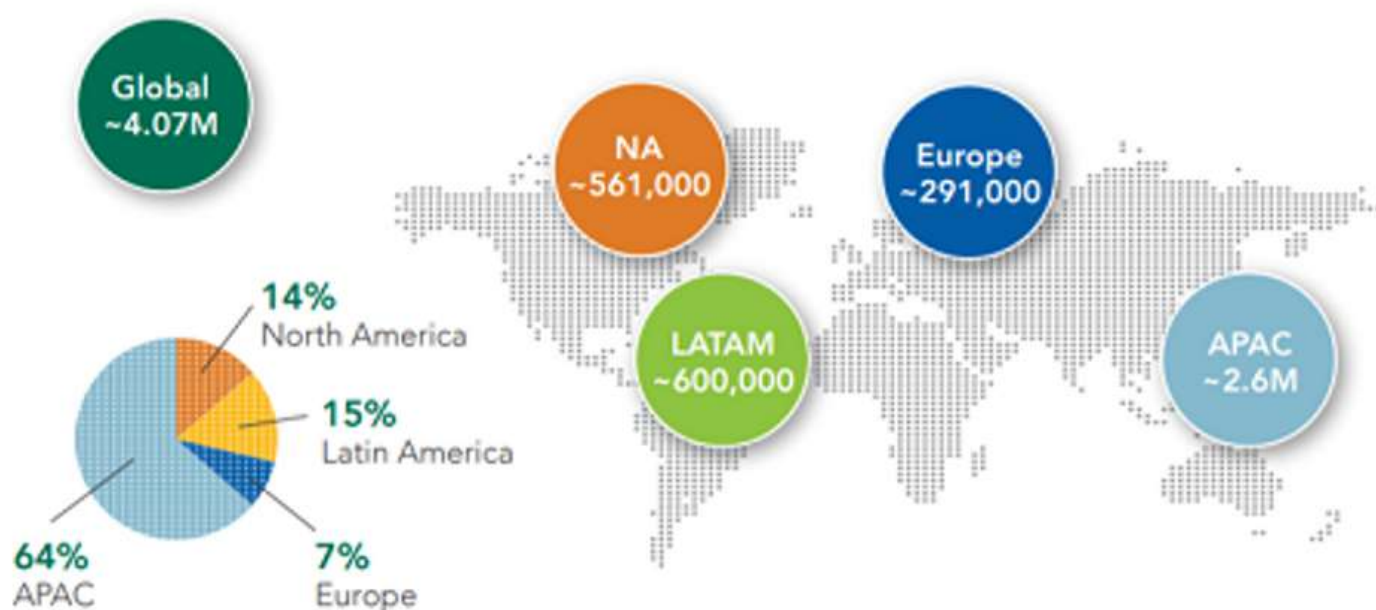
**Managing the Cyber Security  
Risks - Governance, Risk,  
Compliance**



**Prepare for Cyber Security  
Professional Certification  
programs**

# CYBER SECURITY WORKFORCE GAP

## The Cybersecurity Workforce Gap by Region



The threat of a cyber attack on Singapore's critical infrastructure services remains low but the **maritime sector** has been in the cross hairs of hackers, members of an international panel appointed by the Cyber Security Agency of Singapore (CSA) said. 2019 and 2020 threats are increase greatly.

# OVERVIEW OF CYBER THREATS IN 2019

## PHISHING

**47,500**

phishing URLs<sup>1</sup> with a Singapore-link were detected.



## COMMONLY SPOOFED GOVERNMENT ORGANISATIONS IN SINGAPORE:

IMMIGRATION & CHECKPOINTS AUTHORITY (ICA)

MINISTRY OF MANPOWER (MOM)

SINGAPORE POLICE FORCE (SPF)

**70%**

of incidents reported to SingCERT by Small and Medium Enterprises (SMEs) and members of the public occurred through phishing attacks.

<sup>1</sup> URLs – Uniform Resource Locators, colloquially termed web addresses.

## WEBSITE DEFAACEMENT

**873**

Singapore-linked website defacements were detected.



## RANSOMWARE

**35** cases of ransomware were reported to SingCERT.

## COMMAND AND CONTROL (C&C) SERVERS AND BOTNET DRONES

**530** unique C&C servers were observed in Singapore.

**2,300**

botnet drones (compromised computers infected with malicious programs) with Singapore Internet Protocol (IP) addresses were observed daily, on average.

### Featured Topic

**Singapore remains a safe city, but scams remain a concern**



## CYBERCRIME IN SINGAPORE

Cybercrime cases accounted for

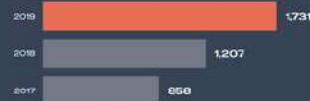
**26.8%**

of overall crime in 2019.

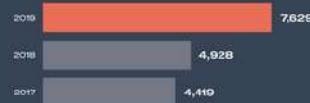
### CYBER EXTORTION



### COMPUTER MISUSE ACT



### ONLINE CHEATING



Cybercrime continues to be on the rise in Singapore, with 9,430 cases reported in 2019 – this was a 51.7 per cent increase from the 6,215 cases reported in 2018, and it accounted for more than one-quarter of all crime in Singapore last year.<sup>2</sup> Online cheating remains a major concern as cybercriminals continue to leverage the anonymity afforded by the Internet to target unsuspecting victims.

E-commerce scam remains the top scam type in Singapore and recorded a 30 per cent increase to 2,809 cases from 2,161 cases in 2018. The total amount cheated in e-commerce scams also increased to S\$2.3 million, from S\$1.9 million in 2018. Unsuspecting victims continue to be enticed by online deals, such as electronic gadgets and event tickets, which are often too good to be true.

Fighting crime is a community effort. Even while the Police continues to educate the public on crime prevention measures and work with relevant stakeholders to disrupt scam operations, members of the public must also play their part by taking active steps to safeguard themselves online. They should use trusted payment services provided by the e-commerce platforms to mitigate the risk of falling prey to e-commerce scams.

<sup>2</sup> Figures provided by Singapore Police Force (SPF) as of 10 June 2020.

# Overview of Cyber Threats in 2020

## WEBSITE DEFAACEMENTS

**495**

.sg websites were defaced, a sharp decrease of 43% from 873 cases in 2019

## RANSOMWARE

**89**

ransomware cases were reported to CSA, with cases hailing from the manufacturing, retail and healthcare sectors. This was a significant rise of 154% in cases over the whole of 2019

## CYBERCRIME IN SINGAPORE

**16,117**

Cybercrime cases accounted for

**43%**

of overall crime in 2020



### ONLINE CHEATING

2020: **12,251**  
2019: **7,580**  
2018: **4,928**



### COMPUTER MISUSE ACT

2020: **3,621**  
2019: **1,701**  
2018: **1,207**



### CYBER EXTORTION

2020: **245**  
2019: **68**  
2018: **80**

## PHISHING

**47,000**

phishing URLs<sup>1</sup> with a Singapore-link were detected. A slight decrease of 1% as compared to 2019

NUMBER OF CASES SINGCERT HANDLED IN

2020: **9,080**

2019: **8,491**



## COMMONLY SPOOFED GOVERNMENT ORGANISATIONS IN SINGAPORE:

- MINISTRY OF EDUCATION (MOE)
- MINISTRY OF MANPOWER (MOM)
- SINGAPORE POLICE FORCE (SPF)

## COMMONLY SPOOFED SECTORS

- TECHNOLOGY
- BANKING AND FINANCIAL SERVICES
- SOCIAL NETWORKING FIRMS

AMAZON, PAYPAL AND FACEBOOK ARE COMMONLY SPOOFED BRANDS

## C&C SERVERS AND BOTNET DRONES

**1,026**

unique and locally hosted C&C servers were discovered, a spike from 530 recorded in 2019

About **6,600**

botnet drones were observed daily on average in 2020, also a significant increase from 2019's daily average of 2,300



<sup>1</sup> URLs – Uniform Resource Locators, colloquially termed web addresses.

# MARITIME USECASE

## 2017 MAERSK

### CYBER INCIDENT

#### The 2017 MAERSK Cyber Incident

Learning from and applying the Lessons of a Major Cyber Incident

Maarten van Hees, MSc Eng.  
CISSP, CISA, CISM, CCSP

Cyber Security Officer for OT, Maersk

In 2017: Cyber Security Manager for APM Terminals

With APM Terminals since 2011, moved to Maersk in 2018.

Previously worked for IBM, AT&T, Seneca, QNH, and DNB



 MAERSK

The marine industry being an attractive target for hackers is not new. Since Maersk suffered a devastating US\$300 million ransomware attack in 2017, the maritime industry has earned the unfortunate distinction of being the only sector to have all four of the world's largest shipping companies being hit by cyber attacks in the last four years, namely – Maersk, Mediterranean Shipping Company, CMA CGM and COSCO.

# Programme contents

- **Introduction to Information Security**
- **Threats that were Real**
- **Understanding Cyber Eco System**
- **Emerging Trends –Cyber Risks**
- **Security & Risk Management**
- **Protection of Information Assets**
- **Data Protection & Privacy Principles**
- **Identity & Access Control Management**
- **Software Development Life Cycle – Security Considerations**



# Programme contents

- Enterprise Security Architecture
- Threat Intelligence, Threat Hunting & Threat Monitoring
- Communication & Network Security
- Security Assessment & Testing
- Operational Resilience
- Security Incident Management
- Security Operations
- Cyber Security Strategy Development
- 2017 Maersk cyber incident use-case
- Cyber security Table Topic
- Open Discussion







# THE FUTURE OF JOBS AND SKILLS FOR EVERYONE

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