

BitCyber

Securing Your Business

# Protecting Your Data

## Managing Data Privacy Risk in Cyber Space

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# What is your Cyber Security Culture?




# What is your Cyber Security Culture?



How

But, we passed the security audit!



Marketing launched new website without informing me and got hacked.



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# Evolving Cyber Security Threat Landscape

## Overview of Cyber Threats in 2020



### CYBERCRIME IN SINGAPORE

**16,117**

Cybercrime cases accounted for **43%** of overall crime in 2020



#### ONLINE CHEATING

2020: **12,251**  
2019: **7,580**  
2018: **4,922**



#### COMPUTER MISUSE ACT

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



#### CYBER EXTORTION

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

### WEBSITE DEFAACEMENTS

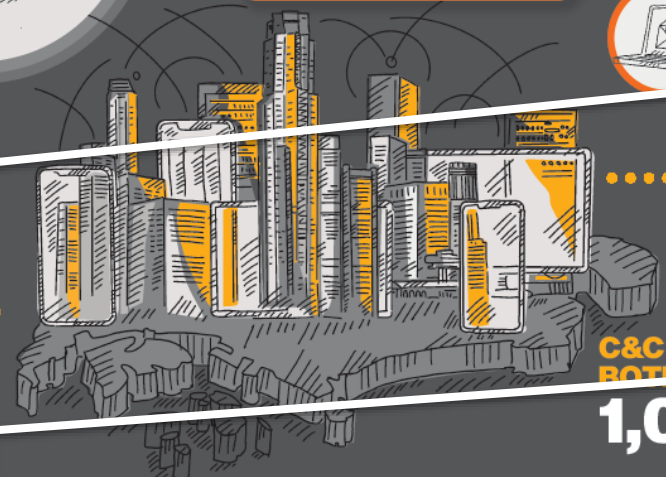
**495**

'.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



### C&C SERVERS AND BOTNET DRONES

**1,026**

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

**6,600**

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

### PHISHING

**47,000**

phishing URLs 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**



1. URLs – Uniform Resource Locators; colloquially termed web addresses.

#### 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 WERE COMMONLY SPOOFED BRANDS



43% of all crime are Cybercrime  
72% Growth

154% growth in Ransomware Attacks

Phishing continues to be a massive problem

Spoofing needs to be addressed to protect your customers



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# 91%

of cyber attacks start with Phishing - Gartner



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80%

Of Data Breaches in 2019 caused by Password Compromise –  
Verizon DBIR



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30%

Of companies hit by Ransomware in 2021 in Malaysia – The State of Ransomware 2021





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59%

expect to be hit by Ransomware in 2021 in Malaysia – The State of  
Ransomware 2021



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# \$2.29m

of fines for PDPA breaches in 2019 - Oct 2021

# 5 firms fined over data breaches

PUBLISHED AUG 8, 2019, 5:00 AM SGT



Hariz Baharudin 

Five companies have been fined \$117,000 in the last three weeks for failing to secure the personal data of their customers and staff.

The biggest fine of \$54,000 was given to Horizon Fast Ferry, which offers ferry services between Singapore and Batam.

The Personal Data Protection Commission (PDPC) found that the company had failed to appoint a data protection officer, develop and implement data protection policies and practices, or put in place "reasonable security arrangements" to protect customers' personal data.

# 5 firms fined over data breaches

PUBLISHED AUG 8, 2019, 5:00 AM SGT



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The biggest fine of \$54,000 was given to a company between Singapore and Batam.

The Personal Data Protection Commission (PDPC) will also appoint a data protection officer, develop data protection practices, or put in place "reasonable" data protection measures.

Sushi restaurant chain Genki Sushi was also fined \$16,000 for failing to secure the data of about 360 current and former staff.

PDPC deputy commissioner Yeong Zee Kin said a compromised server had left the chain's systems open to a ransomware attack in September last year. The server was an off-the-shelf payroll application for staff to view electronic payslips and supervisors to confirm staff attendance.

The attacker had encrypted the data and demanded a ransom payment in exchange for decryption, PDPC said, but there was no evidence of encrypted files having been stolen or disclosed without authorisation.

A probe found that the server initially had no firewall. Even when one was installed after an IT migration, it was not configured to filter out external threats.

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Sushi restaurant chain Genki Sushi was fined for leaking about 360 current and former staff members' personal data.

PDPC deputy commissioner Yeoh Kahloon said the company's systems open to a ransomware attack and a payroll application for staff to view staff attendance.

The attacker had encrypted the data and demanded a ransom for decryption, PDPC said, but there was no evidence of the data being stolen or disclosed without authorisation.

A probe found that the server initially had no firewall. Even when one was installed after an IT migration, it was not configured to filter out external threats.

No data were lost but companies were fined by PDPC for negligence and/or poor cybersecurity

# Axa IT ops in Malaysia, HK, Thailand and Philippines impacted by ransomware cyber attack



Ransomware attacks includes stealing 3TB of data

## INSURANCE

Monday, 17 May 2021 7:01 AM

PARIS: French insurer Axa announced a ransomware cyber attack, adding that it was in

The group said the cyber attack targeted its IT operations in Thailand, Malaysia, Hong Kong and the Philippines.

"As a result, certain data processed by Inter Partners Asia (IPA) in Thailand has been accessed," the Paris-based company said, adding it would notify corporate clients and individuals if it found they had been affected.

The Financial Times earlier reported the attack, adding that it came after cyber criminals using ransomware called Avaddon said on Saturday that they had hacked the group's Asia operations and stolen three terabytes of data, in a dark web post seen by the newspaper.

Cannot achieve Data Protection without good Cybersecurity

# Personal information of nearly 80,000 MyRepublic customers accessed after data storage breach

The data breach took place on a third-party data storage platform where customers' NRICs and utility bills, but the facility has since been secured and "contained", says MyRepublic.

## Data/Files on Cloud Storage Breached

SINGAPORE: MyRepublic Singapore said on Friday (Sep 10) that it had suffered an "unauthorised data access incident" affecting 79,388 customers.

The incident took place on Aug 29 and affected MyRepublic mobile subscribers based in Singapore, said the local telcom.

"The unauthorised data access took place on a third-party data storage platform used to store the personal data of MyRepublic's mobile customers," it said in a statement.

The platform contained identity verification documents related to customer applications, the firm said.

This included scanned copies of both sides of the NRIC for affected customers who are Singaporeans, permanent residents or holders of employment passes and dependant's passes.

For other affected foreigners, the data included documents showing proof of residential address, such as scanned copies of a utility bill.

How to secure your sensitive data in the Cloud?



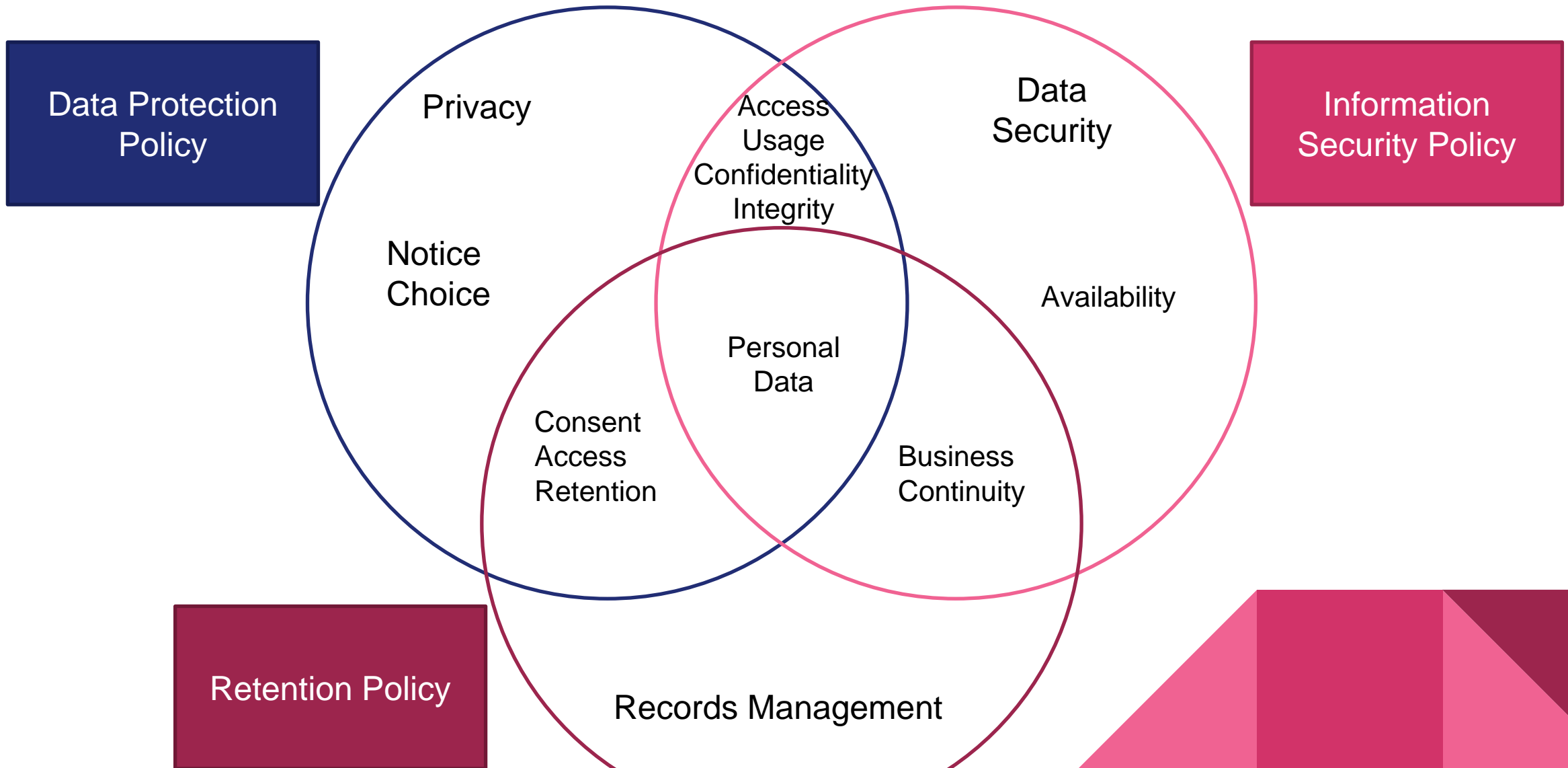
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# Protecting Your Data



# Policies Working Together to Secure Personal Data



# Meeting PDPC Data Protection Programme Requirements

Data Protection Management	Data Breach Management	Training and Communications
<ol style="list-style-type: none"><li>1. Appoint a DPO and business contact information is made available to the public</li><li>2. Identify risks and gaps using PDPA Assessment Tool for Organisations (PATO)</li><li>3. Develop a Data Protection (DP) Policy</li><li>4. Embed data protection as part of corporate governance and establish a reporting structure for data protection matters</li></ol>	<ol style="list-style-type: none"><li>1. Establish a data breach management team</li><li>2. Develop a complaint handling procedure</li><li>3. Develop a 4-step action plan for data breach response (using C.A.R.E model)</li></ol>	<ol style="list-style-type: none"><li>1. Develop a staff training and communications plan</li><li>2. Mandate all staff to complete the PDPA E-Learning Programme</li><li>3. Identify key personnel to attend the 2 PDPC courses if they do not possess any prior data protection certifications listed in the DPO Competency Framework and Training Roadmap</li></ol>
<ol style="list-style-type: none"><li>5. Embed regular monitoring and reporting mechanisms within Enterprise Risk Management (ERM) Framework</li></ol>		
<ol style="list-style-type: none"><li>6. Document data assets and flows using a Data Inventory Map</li></ol>		

# Meeting PDPC Data Protection Programme Requirements

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<p>5. Embed regular monitoring and reporting mechanisms within Enterprise Risk Management (ERM) Framework</p>	<p>How do you determine your Data Privacy Risk Exposure?</p> <p>How are you going to continuously monitor and report your Risk Posture in your ERM Framework?</p>	<p>Framework and Training Roadmap</p>
<p>6. Document data assets and flows using a Data Inventory Map</p>	<p>How are you going to identify all your Data Assets and Flows to develop your Inventory Map?</p> <p>How do you ensure data is flowing to authorised users?</p>	

# Data Protection Solution Suite

## Protecting Endpoints

Anti-Malware

Endpoint Detection and Response

Host Intrusion Prevention System

Ransomware Mitigation

Patch Management

Email Security

## Protecting Unstructured Data

Discover Regulated and Sensitive Data across all workstations

PDPA, GDPR, HIPAA, PCI, PII

Quantify Risk Exposure

Mitigate Risk with Encryption of Sensitive Files

Map and Track Data Assets and Flows

## Protecting Structured Data

Protect Applications and Databases

Role Based Access Controls

Multi-Factor Authentication

Data Masking, Tokenisation, Encryption, Reveal Controls

Monitor Access and Data Flow

## Data Privacy Risk Assessment

Data Discovery and Risk Analysis

Document Data Assets and Flow

Risk Mitigation Strategy

Executive Report

# Data Protection Solution Suite

## Protecting Endpoints

Anti-Malware

Endpoint Detection and Response

Host Intrusion Prevention System

Bitdefender

Patch Management

Email Security

## Protecting Unstructured Data

Discover Regulated and Sensitive Data across all workstations

PDPA, GDPR, HIPAA, PCI, PII

Actifile

Mitigate Risk with Encryption of Sensitive Files

Map and Track Data Assets and Flows

## Protecting Structured Data

Protect Applications and Databases

Role Based Privilege Access Controls / Session Recording

mamori.io

Data Masking, Tokenisation, Encryption

Track Access and Data Flow

## Data Privacy Risk Assessment

Data Discovery and Risk Analysis

Document Data Assets and Flow

Risk Mitigation Strategy

Executive Report



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# Improving Your Security Posture

# Improving Your Security Posture

## CISOaaS

Cyber Resiliency

Governance & Policy

Security Architecture

Review & Remediate

Business Continuity

Advisory Support

## Testing

Red Teaming

Vulnerability Assessments

Penetration Testing

Code Review

Performance Testing

## Risk & Compliance

IT & Privacy Audit

Risk & Compliance Certifications

Threat Modelling

Security Risk Monitoring

## Security Skills

Board/CXO Readiness

Cyber Awareness

Data Protection

Deep Cyber Skills

Cyber War Games

# Improving Your Security Posture

## CISOaaS

Cyber Resiliency

Governance & Policy

Security Architecture

Review & Remediate

Business Continuity

Advisory Support

## Testing

Red Teaming

Vulnerability Assessments

Penetration Testing

Code Review

Performance Testing

## Risk & Compliance

IT & Privacy Audit

 Actifile

Risk & Compliance Certifications

Threat Modelling  
 foresee*ti*

 SRM  
SECURITY RISK MONITOR

 TERBIUM LABS

## Security Skills

 BitCyber Academy

 **HumanFirewall**<sup>TM</sup>

 INFOSEC IQ

Data Protection

 INFOSEC Skills

Deep Cyber Skills

 BitCyber Academy



# Managing Your Security Environment

## Managed XEDR

Bitdefender Ultra

Threat Detection

Respond & Remediation

Threat Analytics

Malware Analysis

Network Analytics

## Monitoring Services

Heterogenous Log Monitoring

Threat Detection

Threat Hunting

Web Defacement Monitoring

## Incident Response

Forensic Investigation

Evidence Gathering

Remediation

Reporting

## Tech Support

Standard Support

Premium Support

24/7 Help Desk

# Managing Your Security Environment

## Managed XEDR

Bitdefender Ultra

Threat Detection

Respond & Remediation

**Bitdefender**<sup>®</sup>

Malware Analysis

Network Analytics

## Monitoring Services

Heterogenous Log Monitoring

Threat Detection



**elastic stack**  
Threat Hunting

Web Defacement Monitoring

## Incident Response

Forensic Investigation

Evidence Gathering

Remediation

Reporting

## Tech Support

Standard Support

Premium Support

24/7 Help Desk



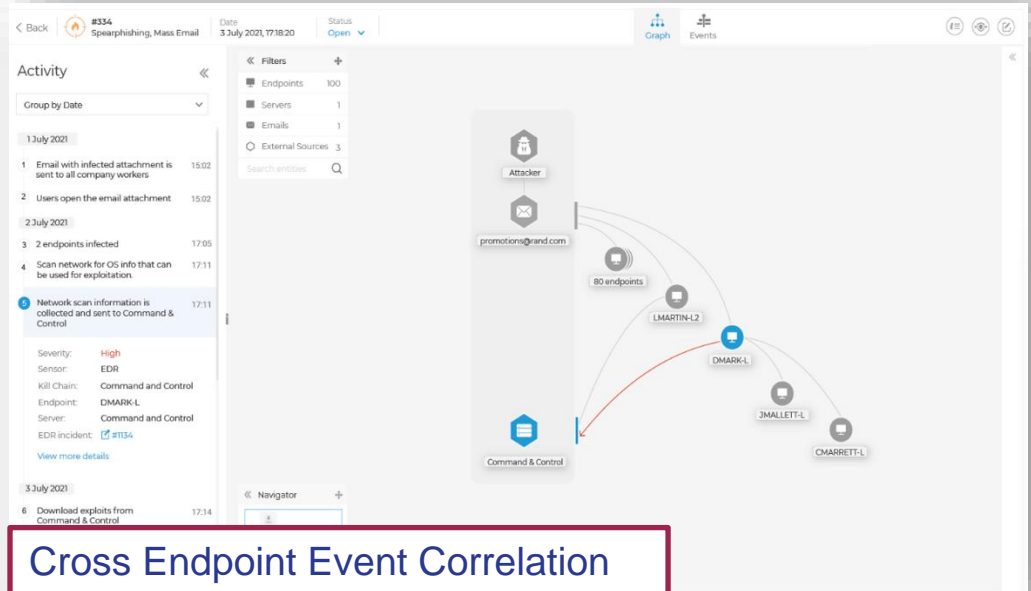
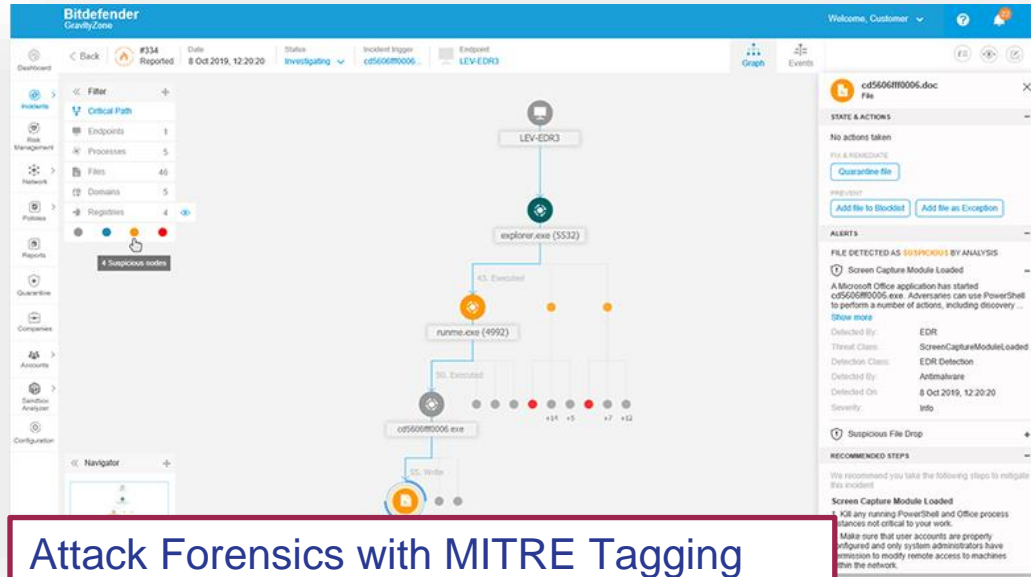
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# Introducing

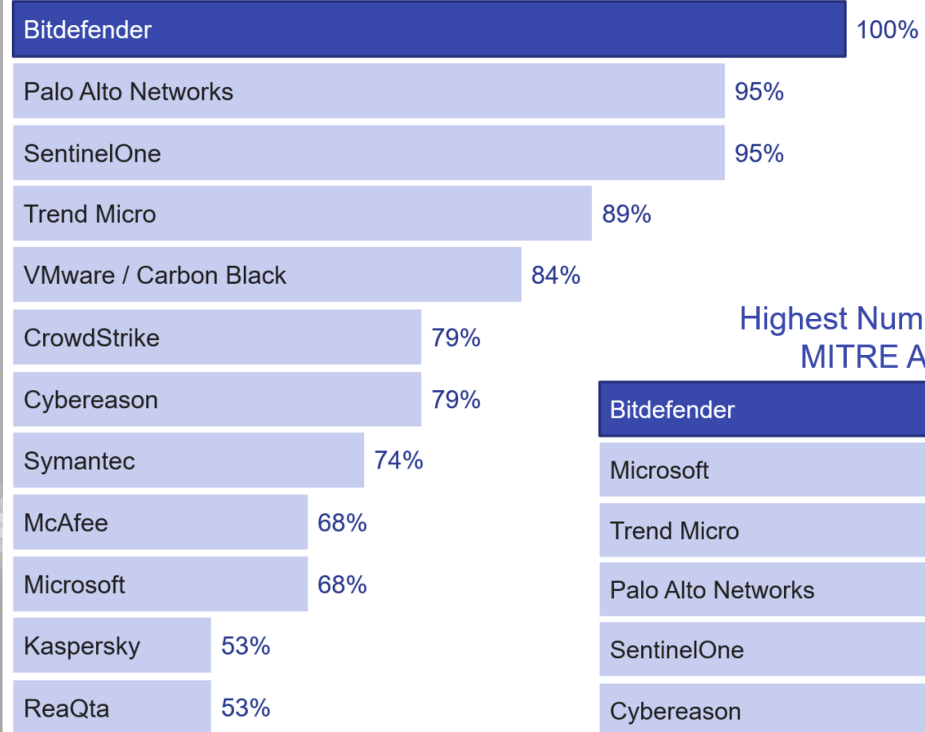
Protecting Your Endpoints



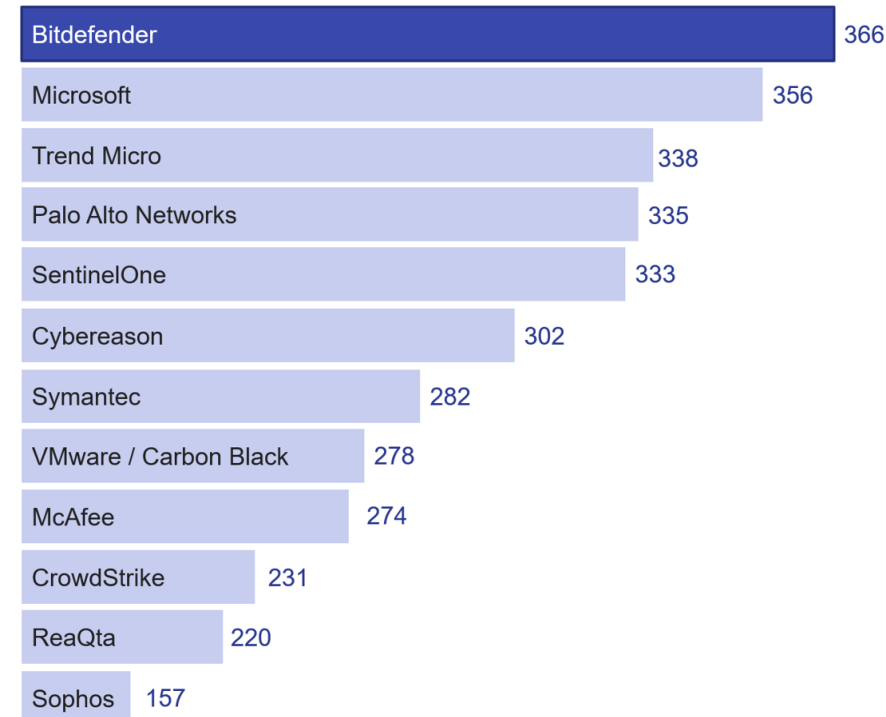
# Bitdefender Ultra with XEDR



## 100% Coverage of all General, Techniques & Tactics MITRE ATT&CK – Apr 2020



## Highest Number Of Total Detections MITRE ATT&CK - Apr 2021



The Forrester Wave: Enterprise Detection & Response, Q1 2020

“Bitdefender is the biggest EDR vendor you haven’t considered but should have.”



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# Introducing



# Actifile

## Protecting Unstructured Data

# Data Risk Assessment & Monitoring Dashboard

Data value based on:  
**Ponemon**  
INSTITUTE  
and industry averages

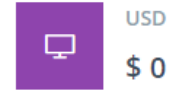
## DEVICE RISK



## DATA RISK, PARKED LIABILITY



## APPLICATION RISK



## ACTIVITY LOG



Risk report EXCEL

Risk report PDF

Sensitive Files Report

### Total Risk

Sensitive Data and Business Apps

\$136,295

### Risk Reduction

Protected By Actifile Encryption

\$0 (0%)

### Residual Risk

\$136,295 (100%)

### Remediation Activities

Data breakdown by status



0 % Encrypted  
100 % Risk

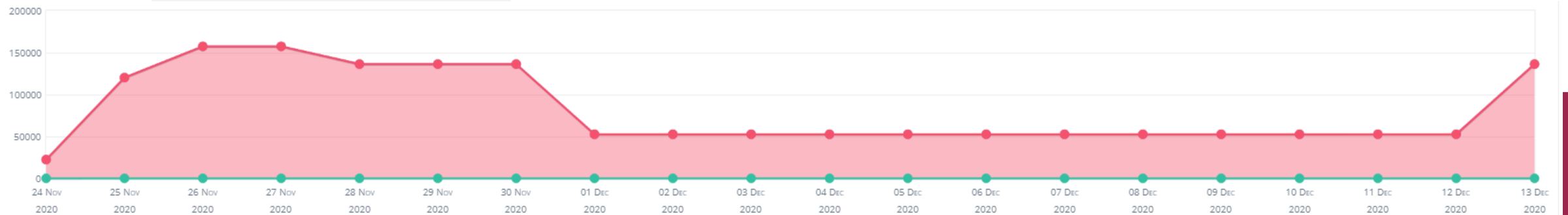
### Devices Status



100 % Online  
0 % Offline  
0 % Not Updated

Show:

1 Month



# Data Risk Assessment & Monitoring Dashboard

## DEVICE RISK



1

## DATA RISK, PARKED LIABILITY

295

## APPL

Monitor and Generate Reports to Enterprise Risk Management Framework

Identify all sensitive data and Risk Exposure

- Risk report EXCEL
- Risk report PDF
- Sensitive Files Report

**Total Risk** **\$136,295**  
Sensitive Data and Business Apps

**Remediation Activities**  
Data breakdown by status

**Risk Reduction** **\$0 (0%)**  
Protected By Actifile Encryption

**Residual Risk** **\$136,295 (100%)**



0  
10

# Data Protection

## DEVICE RISK



## DATA RISK, PARKED LIABILITY



## APPL

Risk report EXCEL

Risk report PDF

Sensitive Files Report

Total Risk

Sensitive Data and Business Apps

\$136,295

Risk Reduction

Protected By Actifile Encryption

\$131,395  
(96.40%)

Residual Risk

\$4,900 (3.60%)

Identify all sensitive data  
and Risk Exposure

Encrypt sensitive data  
and reduce Risk  
Exposure













# Compliance Profile


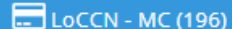
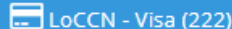

Regulated & Sensitive PII Data based on PDPA, GDPR, HIPAA, PCI, CMMC and other International Standards






Q Compliance Profile


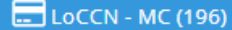
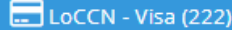

Regulation	On/Off	Description	Region
 PII	<input checked="" type="checkbox"/>	Personal Identity Information	<div data-bbox="1528 406 2305 685"><ul style="list-style-type: none"><li>× Australia</li><li>× Canada</li><li>× Switzerland</li><li>× New Zealand</li><li>× Philippines</li><li>× Singapore</li><li>× United Kingdom</li><li>× United States of America</li><li>× Malaysia</li></ul></div> <span data-bbox="2313 456 2369 485">Clear</span>
 PCI	<input checked="" type="checkbox"/>	Payment Card Industry	Global
 GDPR	<input checked="" type="checkbox"/>	General Data Protection Regulation	Europe
 HIPAA	<input checked="" type="checkbox"/>	Health Insurance Portability and Accountability Act	United States of America
 KVKK	<input type="checkbox"/> OFF	Kişisel Verileri Koruma Kurumu	Turkey
 Malaysian PDPA	<input checked="" type="checkbox"/>	Malaysian Personal Data Protection Act	Malaysia
 Singapore PDPA	<input checked="" type="checkbox"/>	Singapore Personal Data Protection Act	Singapore
 CMMC	<input checked="" type="checkbox"/>	Cybersecurity Maturity Model Certification	United States of America






# Identify Data Assets / Files Classification

GW-TEST2 > Data Explorer > Data Explorer


**Download Paypal aug 2010.csv** uploaded from **GREGW-LAPTOP**  
Last modified: 13 Dec 2012 12:09:22 PM  
  

 History  Show Duplicates  Analytics  Copy Path  Show in Folder

**Download Paypal aug 2010.csv** uploaded from **GREGW-LAPTOP**  
Last modified: 13 Dec 2012 12:08:05 PM  
  

 History  Show Duplicates  Analytics  Copy Path  Show in Folder

Search by Classification to Identify Sensitive Files

 Search Categories ▾

**Sensitive Files**

- Sensitive
- Non Sensitive

Clear

**Content Filters**

















- Australia - Bank State Branc... (11)
- Australia - Business Numb... (367)
- Australia - Driver's License (42)
- Australia - Tax File Number (13)
- Credit Card - MasterCard(New) (2)
- Credit Card - Visa(New) (3)
- IBAN - Europe (2)

# Data Encryption

Encrypt regulated/sensitive data to reduce risk with a click

Search

## Sensitive Files







Classification	Actions	Sensitive	Files	Records	Risk in USD	Countries	Regulation
Credit Card - Visa(New)	 	<input checked="" type="checkbox"/>	3	445	\$ 44,500		PCI
Credit Card - MasterCard(New)	 	<input checked="" type="checkbox"/>	2	392	\$ 39,200		PCI
PII - Email List	 	<input checked="" type="checkbox"/>	296	32775	\$ 32,775		PII
Australia - Business Number (ABN)	 	<input checked="" type="checkbox"/>	367	746	\$ 14,920	Australia	PCI
Australia - Tax File Number	 	<input checked="" type="checkbox"/>	13	174	\$ 3,480	Australia	PII
Australia - Driver's License	 	<input checked="" type="checkbox"/>	42	48	\$ 960	Australia	PII
Australia - Bank State Branch (BSB)	 	<input checked="" type="checkbox"/>	11	21	\$ 420	Australia	PCI
IBAN - Europe	 	<input checked="" type="checkbox"/>	2	2	\$ 40		GDPR
<b>Total:</b>			736	34603	\$ 136,295		

## Non Sensitive Files

Classification	Actions	Sensitive	Files	Records	Risk in USD	Countries	Regulation
----------------	---------	-----------	-------	---------	-------------	-----------	------------

# Data Encryption

Encrypt regulated/sensitive data to reduce risk with a click

Classification	Actions	Risk in USD	Countries	Regulation
Credit Card - Visa(New)		\$ 44,500		PCI
Credit Card - MasterCard(New)		\$ 39,200		PCI
PII - Email List		\$ 32,775		PII
Australia - Business Number (ABN)		\$ 14,920	Australia	PCI
Australia - Tax File Number	 	\$ 3,480	Australia	PII

# Device Level Risk View

## Device Risk

Search

Identify who holds the largest risk

Identify who sent which files and when

Devices	User Name	Online	State	Risk	Files	Sensitive files	Shared Services	Outbound
...	...	Offline	Active	2.51	6390	1	✓	6
...	...	Offline	Active	2.51	1127	4	✓	6
...	...	Offline	Active	2.45	189922	1923		0
...	...	Offline	Active	2.19	2512	221	✓	7
...	...	Offline	Active	1.95	2067	100	✓	160
...	...	Offline	Active	1.93	3017	78	✓	53
...	...	Online	Active	1.87	3377	39	✓	23
...	...	Offline	Active	1.8	1946	5	✓	10

# Audit Log and Flow of All Regulated Data

Risk Portal

Data Explorer

Deployment

Settings

Search...



Admin

Risk Portal > Application Risk

Application Risk

Add System

Favorites All

Identify inbound and outbound data by web applications

Search:

## WEB APPLICATIONS

Process Name	Action	Sensitive	Devices	Files in	Files out	Risk in USD	Sensitive	Last Action
employers.indeed.com		<input type="checkbox"/> OFF	2	119	1	\$ 0	0	13 Feb 2020
canva.com		<input type="checkbox"/> OFF	3	39	53	\$ 0	62	20 Mar 2020
allergandirect.com		<input type="checkbox"/> OFF	1	21	0	\$ 0	0	19 Feb 2020
provider.hintmd.com		<input type="checkbox"/> OFF	1	11	3	\$ 0	0	22 Aug 2019
google.com		<input type="checkbox"/> OFF	4	7	5	\$ 0	9	16 Mar 2020

# Risk by Classification and Value

Classification	Files	Records	Risk in USD
Credit Card - Visa(New)	3	445	\$ 44,500
Credit Card - MasterCard(New)	2	392	\$ 39,200
PII - Email List	373	35115	\$ 35,115
Australia - Business Number (ABN)	385	780	\$ 15,600
Australia - Tax File Number	16	326	\$ 6,520
Australia - Driver's License	46	108	\$ 2,160
Australia - Bank State Branch (BSB)	13	23	\$ 460
Acrobat	15	15	\$ 0
Microsoft Outlook	12	12	\$ 0
<b>Total:</b>	<b>865</b>	<b>37216</b>	<b>\$ 143,555</b>



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# Introducing



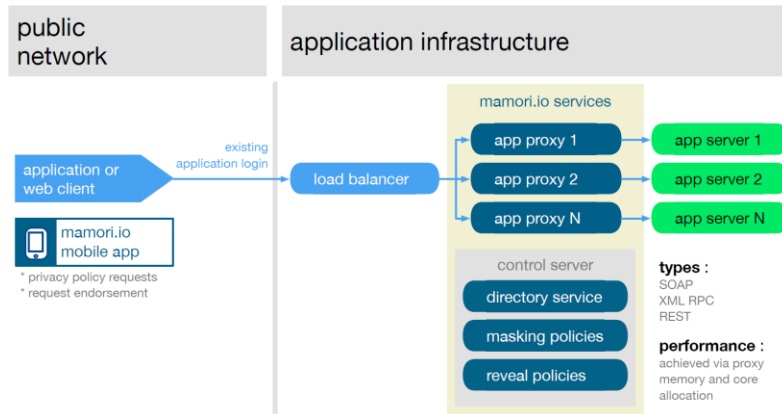
**mamori.io**

## Protecting Structured Data

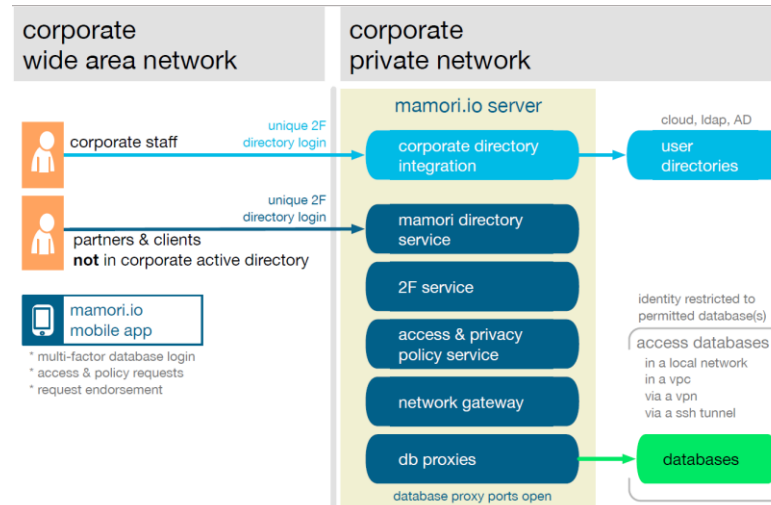


# Data Privacy & Access Controls

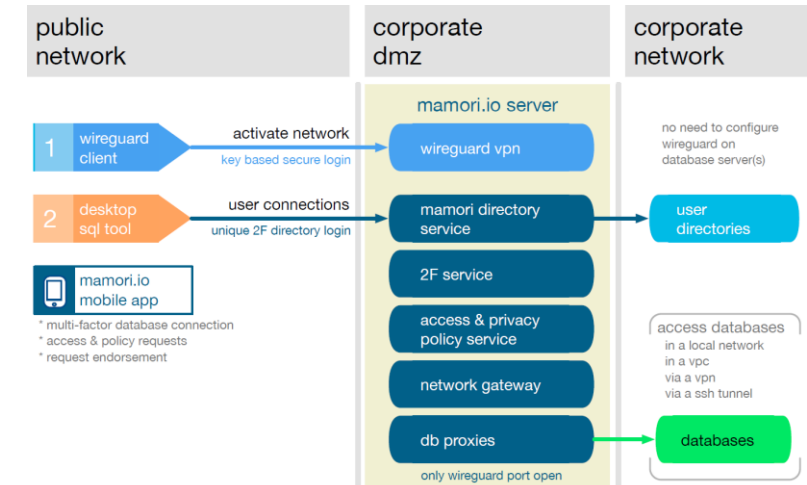
## Application Proxy



## Database Proxy



## Public Access Controls



Policy & Workflow Driven

Role Based Access Controls

2<sup>nd</sup> Factor Authentication

Single Sign On

SSH, RDP, HTTP/S, SOAP, REST

Data Masking, Encryption & Reveal Controls

Monitor and Audit Trails

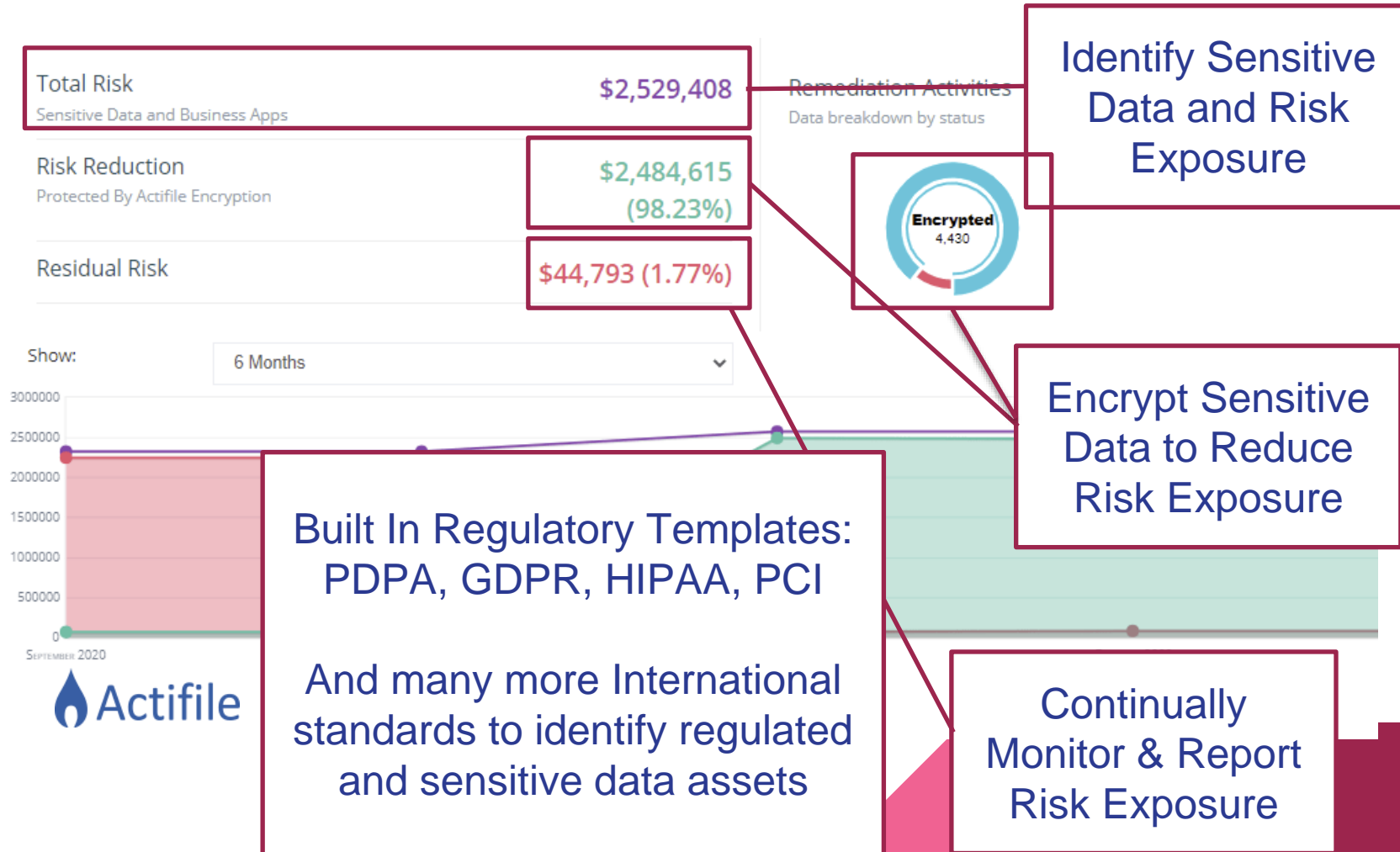
# How can we help you?

## Data Privacy Risk Analysis

What is your Risk Exposure?

3 x Summary Reports of Risks, Data Assets & Flows

5-10 days monitoring & 1 day review



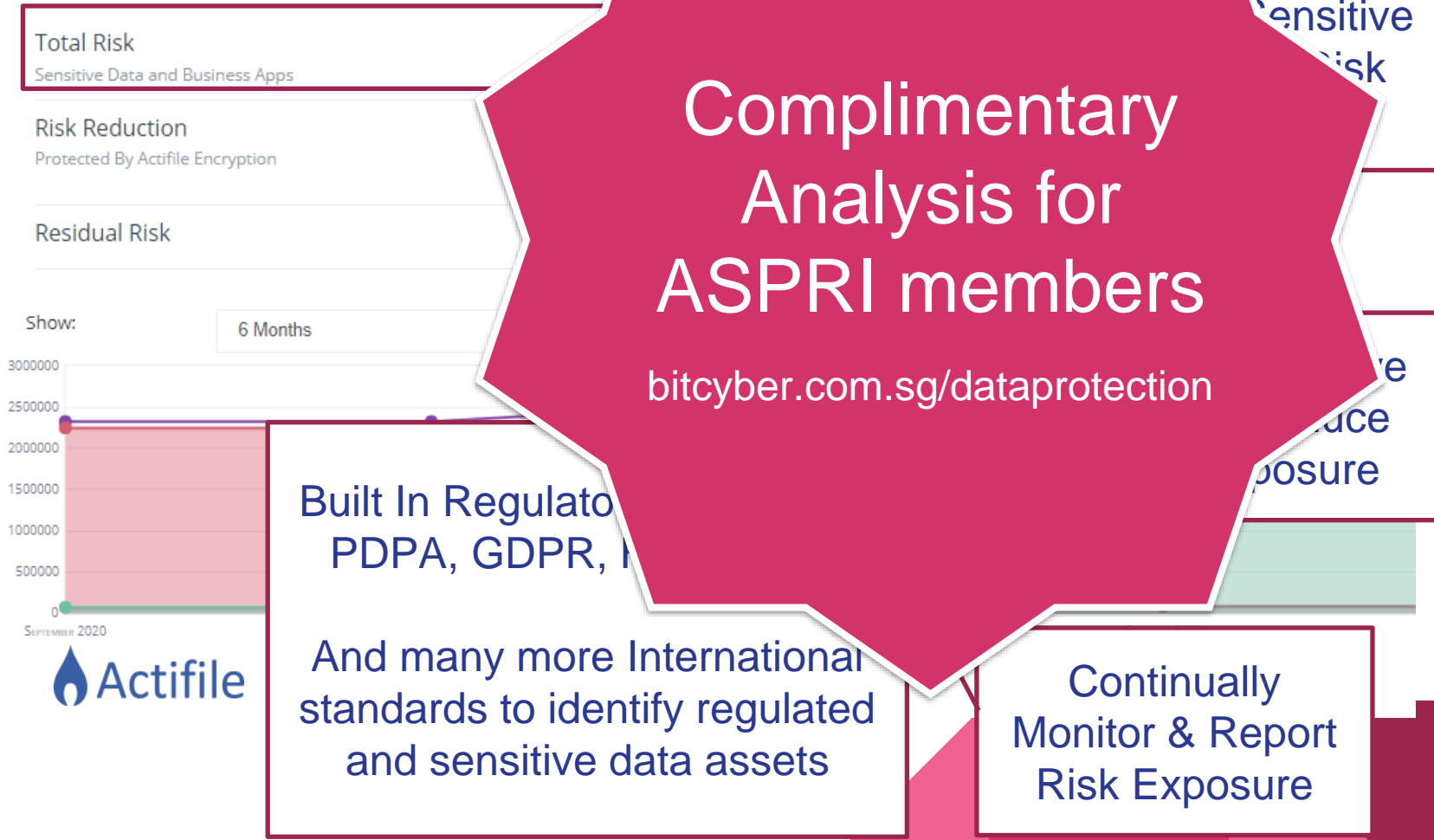
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## Data Privacy Risk Analysis

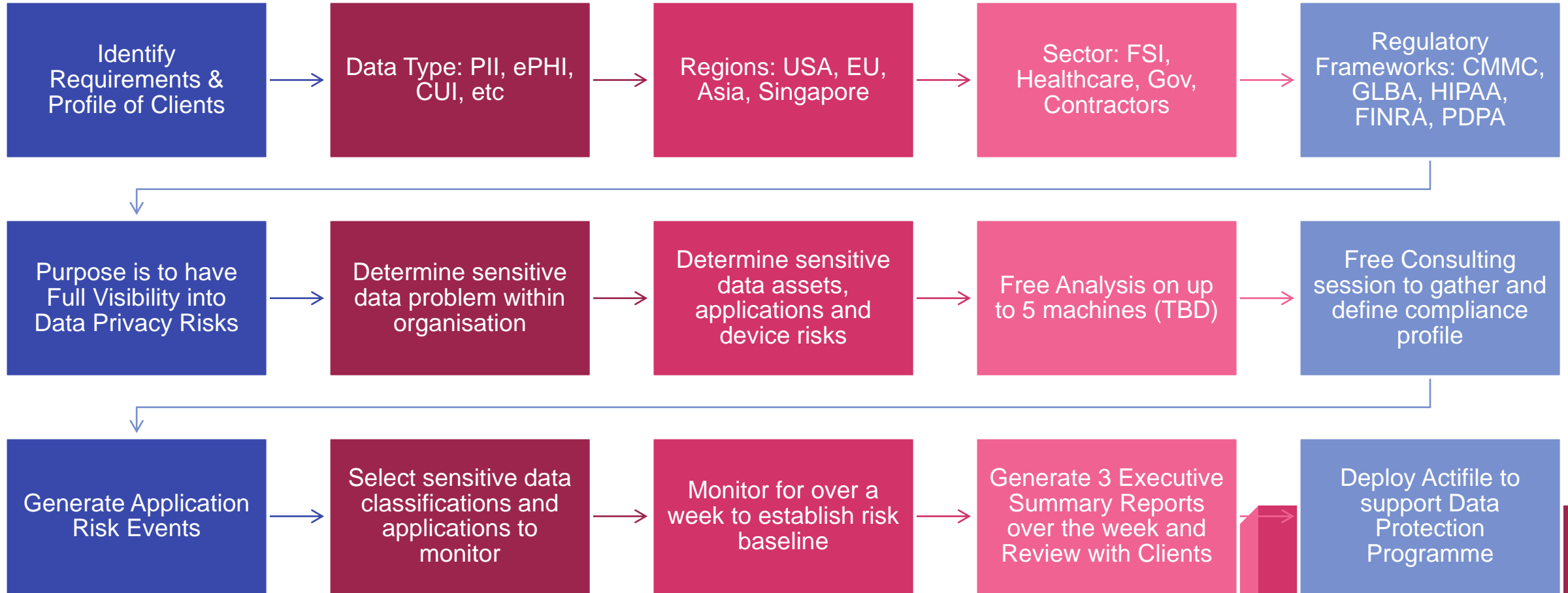
What is your Risk Exposure?

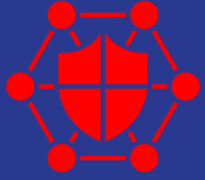
3 x Summary Reports of Risks, Data Assets & Flows

5-10 days monitoring & 1 day review



# Scope and Deliverables of Data Risk Analysis



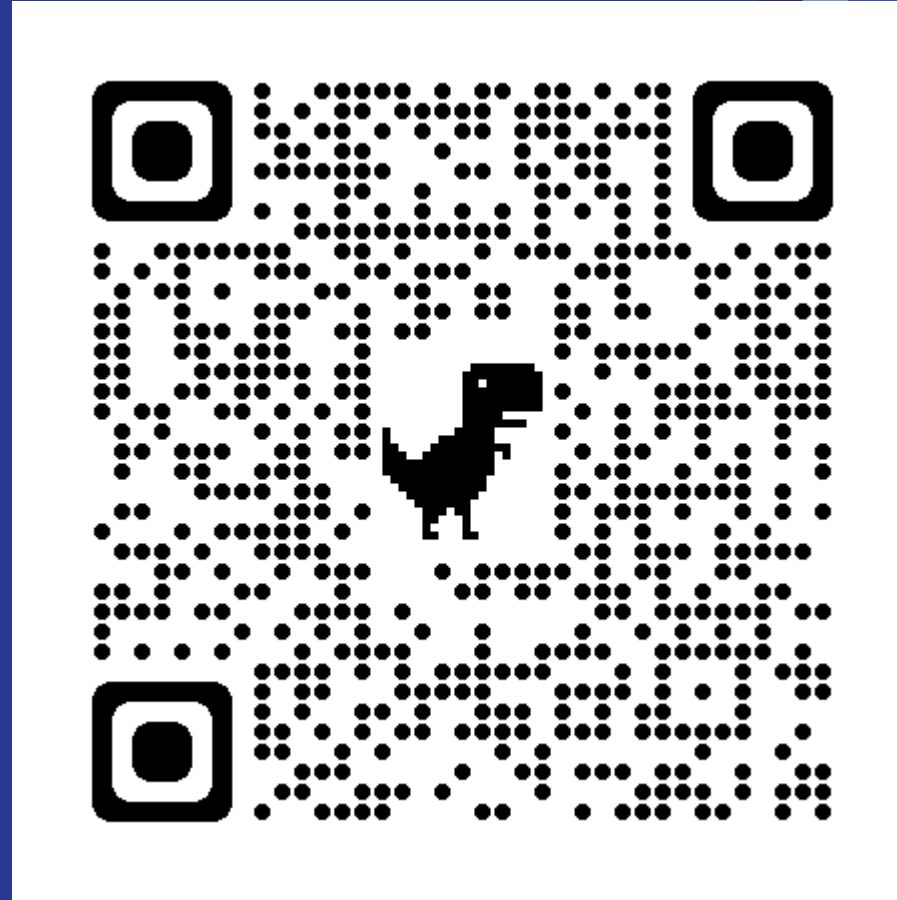


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