
Cyber Security Services Security Penetration Testing

Penetration Testing report for AIVMPT-5244 DMIB - OCP Migration - 3.11 to 4.10

Version 1.0

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1 Executive Summary

The Security Penetration Testing team was tasked with conducting a penetration test of DMIB infrastructure. All activities were conducted in a manner that simulates a malicious actor engaged in a targeted attack against targets defined in scope section. During engagement 3 vulnerabilities have been detected, including 3 low vulnerabilities.

Detected vulnerabilities may allow to:

- Decrypt network traffic due to usage of weak TLS protocols and ciphers.
- Decrypt network traffic due to usage of weak SSH protocols and ciphers.

The assessment was conducted with the level of access that a SCB employee would have and according to the Standard Chartered Penetration Testing Standard and the Penetration Testing Methodology.

Highest Rated Findings

Low	<p>SSL Issues - Weak Cypher Suites Supported</p> <p><i>Server supports weak cipher suites making it prone to MITM attacks and not compliant with SCB Cryptography Standards.</i></p>
Low	<p>SSL Issues - Missing Server-side Order of Cypher Suites</p> <p><i>The server does not have cipher suites ordering, making it easier to break the encryption of TLS channel by not negotiating the best available ciphersuite.</i></p>
Low	<p>SSH Configuration Weaknesses</p> <p><i>By abusing weak algorithms, an attacker may recover the plaintext message from the ciphertext.</i></p>

Recommendations Summary

Project needs to implement at least following recommendations to increase overall security posture:

- Reconfigure TLS profile to support strong TLS cipher suites and follow SCB cryptography standard.
- Disable deprecated SSH algorithms.

All findings should be reviewed and fixed, after a fix implementation it is recommended to perform retest assessment to confirm full remediation.

2 Scope of Work

The following has been confirmed prior to Penetration Testing as Statement of Work:

- Type of Assessment: Infrastructure
- Testing Information Provided: Black-Box
- Environment: Preprod
- Target Address:
 - HKLVATAPQ310.hk.standardchartered.com 10.7.29.144
 - HKLVATAPQ311.hk.standardchartered.com 10.7.29.145
 - HKLVATAPQ312.hk.standardchartered.com 10.7.29.146
 - HKLVATAPQ313.hk.standardchartered.com 10.7.29.147
 - HKLVATAPQ314.hk.standardchartered.com 10.7.29.148
 - HKLVATAPQ315.hk.standardchartered.com 10.7.29.149
 - HKLVATAPQ316.hk.standardchartered.com 10.7.29.150
 - HKLVATAPQ317.hk.standardchartered.com 10.7.29.151
 - HKLVATAPQ318.hk.standardchartered.com 10.7.29.152
 - HKLVATAPQ319.hk.standardchartered.com 10.7.29.153
 - HKLVATAPQ320.hk.standardchartered.com 10.7.29.154
 - HKLVATAPQ321.hk.standardchartered.com 10.7.29.155
 - HKLVATAPQ322.hk.standardchartered.com 10.7.29.156
 - HKLVATAPQ323.hk.standardchartered.com 10.7.29.157
 - HKLVATAPQ324.hk.standardchartered.com 10.7.29.158
 - HKLVATAPQ325.hk.standardchartered.com 10.7.29.159
- Testing Duration: 8 days (from 2022-11-28 to 2022-12-7)
- Testing hours: Any time.
- Exclusions: Denial of Service (network based)
- Man-days: 8

Test Objectives

The objective of the penetration test was to enable the Standard Chartered Bank to better understand the current IT security risk profile of the DMIB infrastructure and to provide recommendations to help reduce any identified risks before the servers are placed in a production environment. This penetration test was designed to replicate the position of an unauthenticated user of the DMIB with the intention of gaining access to the customers data.

Methodology

The Penetration Testing Methodology version used for delivery of this penetration testing assessment is available at:

<https://confluence.global.standardchartered.com/display/AIVM/Penetration+Testing+Methodology>

Detailed Methodology execution checklist can be found in section 5 "[Methodology execution checklist](#)".

3 Findings Summary

Ref	Rating	Title
4.1	<u>3.1</u>	Low: SSL Issues - Weak Cypher Suites Supported
4.2	<u>3.1</u>	Low: SSL Issues - Missing Server-side Order of Cypher Suites
4.3	<u>3.1</u>	Low: SSH Configuration Weaknesses

4 Detailed findings

4.1. SSL Issues - Weak Cypher Suites Supported

Status: Open

Category:
A2

Rating: **Low – 3.1**

<https://nvd.nist.gov/vuln-metrics/cvss/v3-calculator?vector=AV:A/AC:H/PR:N/UI:N/S:U/C:L/I:N/A:N>

Description

The server supports weak or obsolete cipher suites in TLS negotiation, which are considered to be insecure.

- TLS_DHE_RSA_WITH_AES_128_CBC_SHA
- TLS_DHE_RSA_WITH_AES_128_CBC_SHA256
- TLS_DHE_RSA_WITH_AES_256_CBC_SHA
- TLS_DHE_RSA_WITH_AES_256_CBC_SHA256
- TLS_ECDHE_RSA_WITH_3DES_EDE_CBC_SHA
- TLS_ECDHE_RSA_WITH_AES_128_CBC_SHA
- TLS_ECDHE_RSA_WITH_AES_128_CBC_SHA256
- TLS_ECDHE_RSA_WITH_AES_256_CBC_SHA
- TLS_ECDHE_RSA_WITH_AES_256_CBC_SHA384
- TLS_RSA_WITH_3DES_EDE_CBC_SHA
- TLS_RSA_WITH_AES_128_CBC_SHA
- TLS_RSA_WITH_AES_128_CBC_SHA256
- TLS_RSA_WITH_AES_128_CCM
- TLS_RSA_WITH_AES_128_GCM_SHA256
- TLS_RSA_WITH_AES_256_CBC_SHA
- TLS_RSA_WITH_AES_256_CBC_SHA256
- TLS_RSA_WITH_AES_256_CCM
- TLS_RSA_WITH_AES_256_GCM_SHA384

Attack scenario

In case when one of weak or vulnerable ciphers are negotiated during TLS handshake, a suitably positioned attacker could capture the TLS network traffic for later decryption due to weak encryption algorithm used in communication.

Affected hosts

10.7.29.144 / 1936 / tcp

10.7.29.144 / 9001 / tcp

10.7.29.145 / 1936 / tcp

10.7.29.145 / 9001 / tcp

10.7.29.146 / 1936 / tcp

10.7.29.146 / 9001 / tcp

10.7.29.147 / 1936 / tcp

10.7.29.147 / 9001 / tcp

10.7.29.148 / 9001 / tcp

10.7.29.148 / 9099 / tcp

10.7.29.148 / 9641 / tcp

10.7.29.148 / 9642 / tcp

10.7.29.148 / 9643 / tcp

10.7.29.148 / 9644 / tcp

10.7.29.148 / 9979 / tcp

10.7.29.149 / 9001 / tcp

10.7.29.149 / 9641 / tcp

10.7.29.149 / 9642 / tcp

10.7.29.149 / 9643 / tcp

10.7.29.149 / 9644 / tcp

10.7.29.149 / 9979 / tcp

10.7.29.149 / 17697 / tcp

10.7.29.149 / 22623 / tcp

10.7.29.150 / 9001 / tcp

10.7.29.150 / 9641 / tcp

10.7.29.150 / 9642 / tcp

10.7.29.150 / 9643 / tcp

10.7.29.150 / 9644 / tcp

10.7.29.150 / 9979 / tcp

10.7.29.151 / 9001 / tcp

10.7.29.151 / 9641 / tcp

10.7.29.151 / 9642 / tcp

10.7.29.151 / 9643 / tcp

10.7.29.151 / 9644 / tcp

10.7.29.151 / 9979 / tcp

10.7.29.151 / 17697 / tcp

10.7.29.151 / 22623 / tcp

10.7.29.152 / 9642 / tcp

10.7.29.152 / 9643 / tcp

10.7.29.152 / 9644 / tcp

10.7.29.152 / 9979 / tcp

10.7.29.152 / 17697 / tcp

10.7.29.152 / 22623 / tcp

10.7.29.153 / 9644 / tcp

10.7.29.154 / 9001 / tcp

10.7.29.157 / 9001 / tcp

10.7.29.158 / 9001 / tcp

10.7.29.159 / 9001 / tcp

Recommendations

Disable weak cipher suites highlighted in description section.

References

- SCB Cryptography Standard: <https://rv2.global.standardchartered.com/govpoint-ui/#/govpoint/viewDocument?documentNumber=STD00028>
- CWE-327: <https://cwe.mitre.org/data/definitions/327.html>
- CWE-326: <https://cwe.mitre.org/data/definitions/326.html>

Evidence

The below screenshot is the output example of testssl tool run against 10.7.29.148:9641.

The affected ports share the similar testssl output.

Hexcode	Cipher Suite Name (OpenSSL)	KeyExch.	Encryption	Bits	Cipher Suite Name (IANA/RFC)	
<u>SSLv2</u>						
-						
<u>SSLv3</u>						
-						
<u>TLSv1</u>						
-						
<u>TLSv1.1</u>						
-						
<u>TLSv1.2</u> (no server order, thus listed by strength)						
xc030	ECDHE-RSA-AES256-GCM-SHA384	ECDH 521	AESGCM	256	TLS_ECDHE_RSA_WITH_AES_256_GCM_SHA384	secure
xc028	ECDHE-RSA-AES256-SHA384	ECDH 521	AES	256	TLS_ECDHE_RSA_WITH_AES_256_CBC_SHA384	weak
xc014	ECDHE-RSA-AES256-SHA	ECDH 521	AES	256	TLS_ECDHE_RSA_WITH_AES_256_CBC_SHA	weak
x9f	DHE-RSA-AES256-GCM-SHA384	DH 2048	AESGCM	256	TLS_DHE_RSA_WITH_AES_256_GCM_SHA384	secure
xc09f	DHE-RSA-AES256-CCM	DH 2048	AESCCM	256	TLS_DHE_RSA_WITH_AES_256_CCM	secure
x6b	DHE-RSA-AES256-SHA256	DH 2048	AES	256	TLS_DHE_RSA_WITH_AES_256_CBC_SHA256	weak
x39	DHE-RSA-AES256-SHA	DH 2048	AES	256	TLS_DHE_RSA_WITH_AES_256_CBC_SHA	weak
x9d	AES256-GCM-SHA384	RSA	AESGCM	256	TLS_RSA_WITH_AES_256_GCM_SHA384	weak
xc09d	AES256-CCM	RSA	AESCCM	256	TLS_RSA_WITH_AES_256_CCM	weak
x3d	AES256-SHA256	RSA	AES	256	TLS_RSA_WITH_AES_256_CBC_SHA256	weak
x35	AES256-SHA	RSA	AES	256	TLS_RSA_WITH_AES_256_CBC_SHA	weak
xc02f	ECDHE-RSA-AES128-GCM-SHA256	ECDH 521	AESGCM	128	TLS_ECDHE_RSA_WITH_AES_128_GCM_SHA256	secure
xc027	ECDHE-RSA-AES128-SHA256	ECDH 521	AES	128	TLS_ECDHE_RSA_WITH_AES_128_CBC_SHA256	weak
xc013	ECDHE-RSA-AES128-SHA	ECDH 521	AES	128	TLS_ECDHE_RSA_WITH_AES_128_CBC_SHA	weak
x9e	DHE-RSA-AES128-GCM-SHA256	DH 2048	AESGCM	128	TLS_DHE_RSA_WITH_AES_128_GCM_SHA256	secure
xc09e	DHE-RSA-AES128-CCM	DH 2048	AESCCM	128	TLS_DHE_RSA_WITH_AES_128_CCM	secure
xc09c	AES128-CCM	RSA	AESCCM	128	TLS_RSA_WITH_AES_128_CCM	weak
x67	DHE-RSA-AES128-SHA256	DH 2048	AES	128	TLS_DHE_RSA_WITH_AES_128_CBC_SHA256	weak
x33	DHE-RSA-AES128-SHA	DH 2048	AES	128	TLS_DHE_RSA_WITH_AES_128_CBC_SHA	weak
x9c	AES128-GCM-SHA256	RSA	AESGCM	128	TLS_RSA_WITH_AES_128_GCM_SHA256	weak
x3c	AES128-SHA256	RSA	AES	128	TLS_RSA_WITH_AES_128_CBC_SHA256	weak
x2f	AES128-SHA	RSA	AES	128	TLS_RSA_WITH_AES_128_CBC_SHA	weak
<u>TLSv1.3</u> (no server order, thus listed by strength)						
x1302	TLS_AES_256_GCM_SHA384	ECDH 256	AESGCM	256	TLS_AES_256_GCM_SHA384	recommended
x1301	TLS_AES_128_GCM_SHA256	ECDH 256	AESGCM	128	TLS_AES_128_GCM_SHA256	recommended
x1304	TLS_AES_128_CCM_SHA256	ECDH 256	AESCCM	128	TLS_AES_128_CCM_SHA256	secure

4.2. SSL Issues - Missing Server-side Order of Cypher Suites

Status: Open

Category:
A2

Rating: **Low – 3.1**

<https://nvd.nist.gov/vuln-metrics/cvss/v3-calculator?vector=AV:A/AC:H/PR:N/UI:N/S:U/C:L/I:N/A:N>

Description

The server does not present cipher suites order preference during TLS negotiation, which may impact encryption strength and security of established TLS channel.

Attack scenario

If it happens that implementation of client or server will choose a weak cipher suite and the attacker positioned in the same network will be able to capture the encrypted traffic, it might be easier for them to break the encryption as not the strongest cipher suite was chosen.

Affected hosts

10.7.29.148 / 2379 / tcp

10.7.29.148 / 2380 / tcp

10.7.29.148 / 9641 / tcp

10.7.29.148 / 9642 / tcp

10.7.29.148 / 9643 / tcp

10.7.29.148 / 9644 / tcp

10.7.29.148 / 9978 / tcp

10.7.29.148 / 9979 / tcp

10.7.29.149 / 2379 / tcp

10.7.29.149 / 2380 / tcp

10.7.29.149 / 9641 / tcp

10.7.29.149 / 9642 / tcp

10.7.29.149 / 9643 / tcp

10.7.29.149 / 9644 / tcp

10.7.29.149 / 9978 / tcp

10.7.29.149 / 9979 / tcp

10.7.29.150 / 2379 / tcp

10.7.29.150 / 2380 / tcp

10.7.29.150 / 9641 / tcp

10.7.29.150 / 9642 / tcp

10.7.29.150 / 9643 / tcp

10.7.29.150 / 9644 / tcp

10.7.29.150 / 9978 / tcp

10.7.29.150 / 9979 / tcp

10.7.29.151 / 2379 / tcp

10.7.29.151 / 2380 / tcp

10.7.29.151 / 9641 / tcp

10.7.29.151 / 9642 / tcp

10.7.29.151 / 9643 / tcp

10.7.29.151 / 9644 / tcp

10.7.29.151 / 9978 / tcp

10.7.29.151 / 9979 / tcp

10.7.29.152 / 9642 / tcp

10.7.29.152 / 9643 / tcp

10.7.29.152 / 9644 / tcp

10.7.29.152 / 9978 / tcp

10.7.29.152 / 9979 / tcp

10.7.29.153 / 9644 / tcp

10.7.29.153 / 9978 / tcp

Recommendations

Enable TLS cipher suite ordering on the server.

References

- SCB Cryptography Standard - <https://rv2.global.standardchartered.com/govpoint-ui/#/govpoint/viewDocument?documentNumber=STD00028>
- CWE-327: <https://cwe.mitre.org/data/definitions/327.html>

Evidence

The below screenshot is the output example of the testssl tool displaying server side cipher order misconfigurations. The displayed misconfiguration is the same for all affected ports.

Testing server's cipher preferences

```
Has server cipher order?  no (NOT ok)
Negotiated protocol      TLSv1.3
Negotiated cipher       TLS_AES_256_GCM_SHA384, 256 bit ECDH (P-256) (limited sense as client will pick)
Cipher per protocol
```

4.3. SSH Configuration Weaknesses

Status: Open

Category: I2

Rating: **Low – 3.1**

<https://nvd.nist.gov/vuln-metrics/cvss/v3-calculator?vector=AV:A/AC:H/PR:N/UI:N/S:U/C:L/I:N/A:N>

Description

The devices support the following weak key exchange algorithms:

- ecdh-sha2-nistp256
- ecdh-sha2-nistp384
- ecdh-sha2-nistp521

The devices support the following weak host-key algorithms:

- ecdsa-sha2-nistp256

The devices support the following weak encryption algorithms (ciphers):

- aes256-cbc aes128-cbc

Attack scenario

By abusing weak algorithms, an attacker may recover the plaintext message from the ciphertext.

Affected hosts

- 10.7.29.144 / 22 / tcp
- 10.7.29.145 / 22 / tcp
- 10.7.29.146 / 22 / tcp
- 10.7.29.147 / 22 / tcp
- 10.7.29.148 / 22 / tcp
- 10.7.29.149 / 22 / tcp
- 10.7.29.150 / 22 / tcp
- 10.7.29.151 / 22 / tcp
- 10.7.29.152 / 22 / tcp
- 10.7.29.153 / 22 / tcp
- 10.7.29.154 / 22 / tcp
- 10.7.29.155 / 22 / tcp
- 10.7.29.156 / 22 / tcp
- 10.7.29.157 / 22 / tcp
- 10.7.29.158 / 22 / tcp
- 10.7.29.159 / 22 / tcp

Recommendations

Disable weak MAC and KEX algorithms for the affected SSH services.

References

- SCB Cryptography Standard: <https://rv2.global.standardchartered.com/govpoint-ui/#/govpoint/viewDocument?documentNumber=STD00028>
- CWE-327: <https://cwe.mitre.org/data/definitions/327.html>
- CWE-310: <https://cwe.mitre.org/data/definitions/310.html>
- CWE-326: <https://cwe.mitre.org/data/definitions/326.html>

Evidence

The example screenshot below presents the weak host-key algorithm. The below setting is present on all affected hosts.

```
# general
(gen) banner: SSH-2.0-OpenSSH_8.0
(gen) software: OpenSSH 8.0
(gen) compatibility: OpenSSH 7.3+ (some functionality from 6.6), Dropbear SSH 2016.73+
(gen) compression: enabled (zlib@openssh.com)

# key exchange algorithms
(kex) ecdh-sha2-nistp256 -- [fail] using weak elliptic curves
      ^- [info] available since OpenSSH 5.7, Dropbear SSH 2013.62
(kex) ecdh-sha2-nistp384 -- [fail] using weak elliptic curves
      ^- [info] available since OpenSSH 5.7, Dropbear SSH 2013.62
(kex) ecdh-sha2-nistp521 -- [fail] using weak elliptic curves
      ^- [info] available since OpenSSH 5.7, Dropbear SSH 2013.62
(kex) diffie-hellman-group-exchange-sha256 (2048-bit) -- [info] available since OpenSSH 4.4
(kex) diffie-hellman-group14-sha256 -- [info] available since OpenSSH 7.3, Dropbear SSH 2016.73
(kex) diffie-hellman-group16-sha512 -- [info] available since OpenSSH 7.3, Dropbear SSH 2016.73
(kex) diffie-hellman-group18-sha512 -- [info] available since OpenSSH 7.3

# host-key algorithms
(key) rsa-sha2-512 (3072-bit) -- [info] available since OpenSSH 7.2
(key) rsa-sha2-256 (3072-bit) -- [info] available since OpenSSH 7.2
(key) ecdsa-sha2-nistp256 -- [fail] using weak elliptic curves
      ^- [warn] using weak random number generator could reveal the key
      ^- [info] available since OpenSSH 5.7, Dropbear SSH 2013.62

# encryption algorithms (ciphers)
(enc) aes256-gcm@openssh.com -- [info] available since OpenSSH 6.2
(enc) aes256-ctr -- [info] available since OpenSSH 3.7, Dropbear SSH 0.52
(enc) aes256-cbc -- [fail] removed (in server) since OpenSSH 6.7, unsafe algorithm
      ^- [warn] using weak cipher mode
      ^- [info] available since OpenSSH 2.3.0, Dropbear SSH 0.47
(enc) aes128-gcm@openssh.com -- [info] available since OpenSSH 6.2
(enc) aes128-ctr -- [info] available since OpenSSH 3.7, Dropbear SSH 0.52
(enc) aes128-cbc -- [fail] removed (in server) since OpenSSH 6.7, unsafe algorithm
      ^- [warn] using weak cipher mode
      ^- [info] available since OpenSSH 2.3.0, Dropbear SSH 0.28

# message authentication code algorithms
(mac) hmac-sha2-256-etm@openssh.com -- [info] available since OpenSSH 6.2
(mac) hmac-sha1-etm@openssh.com -- [warn] using weak hashing algorithm
      ^- [info] available since OpenSSH 6.2
(mac) hmac-sha2-512-etm@openssh.com -- [info] available since OpenSSH 6.2
(mac) hmac-sha2-256 -- [warn] using encrypt-and-MAC mode
      ^- [info] available since OpenSSH 5.9, Dropbear SSH 2013.56
(mac) hmac-sha1 -- [warn] using encrypt-and-MAC mode
      ^- [warn] using weak hashing algorithm
      ^- [info] available since OpenSSH 2.1.0, Dropbear SSH 0.28
(mac) hmac-sha2-512 -- [warn] using encrypt-and-MAC mode
      ^- [info] available since OpenSSH 5.9, Dropbear SSH 2013.56
```

5 Methodology execution checklist

Infrastructure Penetration Testing Methodology has been fulfilled in **100%**. For potential exclusions from the scope see Limitations section.

Performed Not performed Not applicable

Methodology Requirements		Execution Detailed Information
Intelligence Gathering		
<input checked="" type="checkbox"/>	Identify Devices Types, Platforms and Operating Systems	
<input checked="" type="checkbox"/>	Identify Open Ports and Accessible Services	
<input checked="" type="checkbox"/>	Identify Services Version	
<input checked="" type="checkbox"/>	Identify Metadata	
<input checked="" type="checkbox"/>	Enumerate Hosted Application on Web Servers	
<input checked="" type="checkbox"/>	Identify Defence Technologies	
<input checked="" type="checkbox"/>	Gather Operating Systems, Services, Applications Default Credentials	
Vulnerability Analysis		
<input checked="" type="checkbox"/>	Scan Vulnerabilities with Automatic Scanners	
<input checked="" type="checkbox"/>	Check Exploit Databases and Framework Modules	
<input checked="" type="checkbox"/>	Check Common Misconfigurations	
<input checked="" type="checkbox"/>	Perform Reverse Engineering on Available Binaries	No custom binaries found.
<input checked="" type="checkbox"/>	Perform Fuzzing	
<input checked="" type="checkbox"/>	Validate Detected Vulnerabilities	No vulnerability found which require validating.
Exploitation		
<input checked="" type="checkbox"/>	Test Weak Authentication and Default Credentials Usage	
<input checked="" type="checkbox"/>	Tailor Exploits	No exploit tailoring required.
<input checked="" type="checkbox"/>	Exploit Detected Vulnerabilities	No working exploits were executed.
Post Exploitation		
<input checked="" type="checkbox"/>	Identify Device Misconfiguration, Sensitive Data, Available User Information	No vulnerability was exploited, therefore post-exploitation phase was not conducted.
<input checked="" type="checkbox"/>	Perform Password Cracking	
<input checked="" type="checkbox"/>	Identify Weak Encryption Usage	
<input checked="" type="checkbox"/>	Test Exfiltration Paths	
<input checked="" type="checkbox"/>	Enumerate Accessible Devices from Exploited Device	
<input checked="" type="checkbox"/>	Perform Privilege Escalation	
<input checked="" type="checkbox"/>	Identify Services Available Locally	
Cleanup		

■	Move all Copied/Generated Files from a Device to Evidence Folder	No vulnerability was exploited, therefore cleanup phase was not conducted.
■	Return to Original Values System and Application Settings	
■	Delete all Accounts Created by Pentester	

6 Severity Rating Scale and Vulnerability Categories

Standard Chartered Security Penetration Testing Team uses vanilla Common Vulnerability Scoring System v3.1 Metrics and Equations to calculate risk rating.

Rating	CVSS v3.1 Score
Critical	9.0 - 10.0
High	7.0 - 8.9
Medium	4.0 - 6.9
Low	0.1 - 3.9
None	0.0

Vulnerability Categories

Application				Operating System	
Broken Access Control	A1	Improper Platform Usage	M1	Weak, Guessable, or Hardcoded Passwords	I1
Cryptographic Failures	A2	Insecure Data Storage	M2	Insecure Network Services	I2
Injection	A3	Insecure Communication	M3	Insecure Ecosystem Interfaces	I3
Insecure Design	A4	Insecure Authentication	M4	Lack of Secure Update Mechanism	I4
Security Misconfiguration	A5	Insufficient Cryptography	M5	Use of Insecure or Outdated Components	I5
Vulnerable and Outdated Components	A6	Insecure Authorization	M6	Insufficient Privacy Protection	I6
Identification and Authentication Failures	A7	Poor Code Quality	M7	Insecure Data Transfer and Storage	I7
Software and Data Integrity Failures	A8	Code Tampering	M8	Lack of Device Management	I8
Security Logging and Monitoring Failures	A9	Reverse Engineering	M9	Insecure Default Settings	I9
Server-Side Request Forgery (SSRF)	A10	Extraneous Functionality	M10	Lack of Physical Hardening	I10

7 References and Templates

Separate / list down all the SOPs and other STS related documents which support this process

Name	Description	Owner	Location
Penetration Testing Methodology	Describes how Penetration Testing is delivered for each of its subservices	Krystian Szybis	SPT - Public
SPT Service Catalogue	For list of services	Krystian Szybis	Service Catalogue
Penetration Testing Artefacts	Report template, SoW, etc.	Krystian Szybis	Internal Confluence page
Security Remediation	Security Remediation	Hariharan Bala	Remediation Sharepoint