Control Standards: Managing Encryption Keys

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General

About

Control Standards

The Control Standards application serves as a central repository for authoring and displaying corporate standards that are mapped to policies, authoritative sources and control procedures. You can also assess the criticality of control standards based on the objectives and regulations they support and any known control weaknesses. Additionally, the application provides an overall compliance rating for each control standard based on testing performed against related control procedures.

Through the Control Standards application, you can:

- Use pre-loaded control standards from the RSA Archer eGRC Content Library, and import your own standards using the Data Import Manager.
- Rationalize standards by mapping them to the policies they support and to authoritative sources, such as PCI, ISO/IEC, COBIT, FFIEC, HIPAA, NIST and privacy legislation.
- Identify the control procedures that support each standard, and track compliance testing against those procedures.
- Use automated workflow to ensure proper review and approval of all control standard content before publication.
- Communicate new and updated control standards across your enterprise.

Associated Lin	nks		
Associated Links:			

Publication Information					
Control Standard Owner:	Graff, Michael Rana, Usman	Control Standard Backup Owner:	Birchette, Taylor Singla, Namita		
Grouping:	Encryption	Stakeholders:	Abrams, Mark		
	HiTrust		Farrell, Brendan		
	PCI		Gonzalez, Julieanne		
			Kowalewski, Kimberly		
			Liu, Min-hwei		
			Semeraro, Larissa		
Classification:	Preventive	Effective Date:	3/14/2019		
Content Source:	Aetna	Next Review Date:	6/10/2022		

Related Control Standards

Standard Name Standard ID Next Review Date

No Records Found

Covernone				
,	07.1 Encryption 07.1.03 Key Management 14.0 IT Management Policy	Authoritative Sources:	NIST SP 800-53 (Revision 5) 17 SYSTEM AND SERVICES ACQUISITION SA-09 EXTERNAL SYSTEM SERVICES SA-09 (06) EXTERNAL SYSTEM	
		SERVICES ORGANIZATION- CONTROLLED CRYPTOGRAPHIC KEYS 18 SYSTEM AND COMMUNICATIONS PROTECTION SC-12 CRYPTOGRAPHIC KEY ESTABLISHMENT AND		
		MANAGEMENT SC-12 (01) CRYPTOGRAPHIC KEY ESTABLISHMENT AND MANAGEMENT AVAILABILITY SC-12 (02) CRYPTOGRAPHIC KEY ESTABLISHMENT AND MANAGEMENT SYMMETRIC KEYS		
			SC-12 (03) CRYPTOGRAPHIC KEY ESTABLISHMENT AND MANAGEMENT ASYMMETRIC KEYS SC-12 (06) CRYPTOGRAPHIC KEY ESTABLISHMENT AND MANAGEMENT PHYSICAL CONTROL OF KEYS	
			SC-17 PUBLIC KEY INFRASTRUCTURE CERTIFICATES SC-28 PROTECTION OF INFORMATION AT REST	

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SC-28 (03) PROTECTION OF
             INFORMATION AT REST |
             CRYPTOGRAPHIC KEYS
ISO/IEC 27001:2013(E)
    A.10 Cryptography
        A.10.01 Cryptographic controls
             A.10.01.02 Key management
EU Regulatory Technical Standards for
Authentication (November 2017)
    04 Confidentiality and Integrity of the
    Payment Service Users' Personalized
    Security Credentials (Chapter 04)
        04.01 General requirements (Article
             04.01.03 Documentation of
             cryptographic material (Article 22,
Baseline Security Recommendations for IoT
(November 2017)
    04 Security measures and good practices
        04.03 Technical Measures (4.3)
             04.03.10 Cryptography (4.3.10)
             04.03.12 Secure Interfaces and
             network services (4.3.12)
    08 Annex A: Detailed Security measures /
    Good practices
        08.14 Cryptography
             08.14.02 Securely Manage
             Cryptographic Keys (GP-TM-35)
        08.16 Secure Interfaces and network
        services
             08.16.03 Avoid Using the Same
             Secret Key (GP-TM-49)
    09 Annex B: Security measures and threats
    mapping
        09.14 Cryptography
             09.14.02 Securely Manage
             Cryptographic Keys (GP-TM-35)
        09.16 Secure Interfaces and network
        services
             09.16.03 Avoid Using the Same
             Secret Key (GP-TM-49)
CMS ARS 100-25 (January 2018)
```

07 Appendix B. ARS Controls (B)

Protection (SC) (B.16)

Payment Card Industry Data Security Standard

Requirement 03: Protect stored cardholder

(SC-12)

Requirement 03.05

v3.2.1

07.16 System and Communications

07.16.23 Cryptographic Key Establishment and Management

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Requirement 03.05.01
             Requirement 03.05.02
             Requirement 03.05.03
             Requirement 03.05.04
         Requirement 03.06
             Requirement 03.06.01
             Requirement 03.06.02
             Requirement 03.06.04
             Requirement 03.06.05
             Requirement 03.06.06
             Requirement 03.06.07
             Requirement 03.06.08
NIST SP 800-171 Revision 1 (December 2016)
    09 Appendix F: Discussion
         09.13 System and Communications
         Protection (3.13)
             09.13.10 - Cryptographic Key
             Management (3.13.10)
Australian Government Information Security
Manual Controls (November, 2017)
    06-30 - Cryptography - ASD Approved
    Cryptographic Algorithms
         06-30.03 - Controls - Using Diffie-
         Hellman
             06-30.03.01 - Diffie-Hellman 1024
             Bits (0472)
             06-30.03.02 - Diffie-Hellman 2048
             Bits (1475)
FFIEC Information Security Booklet (September,
2016)
    02 Information Security Program
    Management (FFIEC: II)
         02.03 Risk Mitigation (FFIEC: II.C)
             02.03.19 Encryption (FFIEC:
             II.C.19)
    05 Examination Procedures (FFIEC:
    Appendix A)
         05.06 Objective 6 - Control
         Implementation
             05.06.30 Procedure 30 -
             Encryption
NIST SP 800-82 Guide to Industrial Control
Systems (ICS) Security (Revision 2)
    06 Applying Security Controls to ICS
         06.02 Guidance on the Application of
         Security Controls to ICS
             06.02.16 System and
             Communications Protection
MAS - Technology Risk Management Guidelines
    APPENDIX C: CRYPTOGRAPHY
         C.3 Cryptographic Key Management
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C.3.1

C.3.2

C.3.3

C.3.6

France - Federal Data Protection Act 78-17

03: The Commission nationale de l'informatique et des libert?s (CNIL)

The Commission nationale de l'informatique et des libert?s (CNIL)

Article 11

Article 12

Article 16

04: Formalities prior to commencing data processing

Authorisation

Article 25

Formalities prior to commencing data processing

Article 22

NCS TIB 05-4 (SCADA)

04 Recommendations

04.01 Security Tools

04.01.02 Encryption

NIST 800-82 Guide to Industrial Control Systems (ICS) Security

06 ICS Security Controls

06.03 Technical Controls

06.03.04 System and Communications Protection

MAS IBTRM Guidelines v3.0

04.0 Security and Control Objectives

4.1 Data Confidentiality

4.1.3

HKMA TM-G-1

3. Security Management

3.1 Information classification and protection

3.1.4

FedRAMP Revision 4

IDENTIFICATION AND AUTHENTICATION

IA-05 AUTHENTICATOR MANAGEMENT

SYSTEM AND COMMUNICATIONS PROTECTION

SC-01 SYSTEM AND COMMUNICATIONS PROTECTION POLICY AND PROCEDURES

SC-07 BOUNDARY PROTECTION

SC-07 (4) BOUNDARY PROTECTION | EXTERNAL TELECOMMUNICATIONS SERVICES

SC-07 (13) BOUNDARY PROTECTION | ISOLATION OF SECURITY TOOLS / MECHANISMS / SUPPORT COMPONENTS

SC-08 TRANSMISSION CONFIDENTIALITY AND INTEGRITY

> SC-08 (1) TRANSMISSION CONFIDENTIALITY AND INTEGRITY | CRYPTOGRAPHIC OR ALTERNATE PHYSICAL PROTECTION

SC-10 NETWORK DISCONNECT

SC-12 CRYPTOGRAPHIC KEY ESTABLISHMENT AND MANAGEMENT

> SC-12 (2) CRYPTOGRAPHIC KEY ESTABLISHMENT AND MANAGEMENT | SYMMETRIC KEYS

SC-13 CRYPTOGRAPHIC PROTECTION

SC-15 COLLABORATIVE COMPUTING DEVICES

SC-28 PROTECTION OF INFORMATION AT REST

NIST SP 800-53 (Revision 4)

IDENTIFICATION AND AUTHENTICATION

IA-05 AUTHENTICATOR MANAGEMENT

SYSTEM AND COMMUNICATIONS PROTECTION

SC-01 SYSTEM AND COMMUNICATIONS PROTECTION POLICY AND PROCEDURES

SC-02 APPLICATION PARTITIONING

SC-02 (1) APPLICATION PARTITIONING | INTERFACES FOR NON-PRIVILEGED USERS

SC-03 SECURITY FUNCTION ISOLATION

SC-03 (1) SECURITY FUNCTION ISOLATION | HARDWARE SEPARATION

SC-03 (2) SECURITY FUNCTION ISOLATION | ACCESS / FLOW CONTROL FUNCTIONS

SC-03 (3) SECURITY FUNCTION ISOLATION | MINIMIZE NONSECURITY FUNCTIONALITY

SC-03 (4) SECURITY FUNCTION ISOLATION | MODULE COUPLING AND COHESIVENESS

SC-03 (5) SECURITY FUNCTION ISOLATION | LAYERED

STRUCTURES

SC-04 INFORMATION IN SHARED RESOURCES

SC-04 (2) INFORMATION IN SHARED RESOURCES | PERIODS PROCESSING

SC-05 DENIAL OF SERVICE PROTECTION

SC-05 (1) DENIAL OF SERVICE PROTECTION | RESTRICT INTERNAL USERS

SC-05 (2) DENIAL OF SERVICE PROTECTION | EXCESS CAPACITY / BANDWIDTH / REDUNDANCY

SC-05 (3) DENIAL OF SERVICE PROTECTION | DETECTION / MONITORING

SC-06 RESOURCE AVAILABILITY

SC-07 BOUNDARY PROTECTION

SC-07 (3) BOUNDARY PROTECTION | ACCESS POINTS

SC-07 (4) BOUNDARY PROTECTION | EXTERNAL TELECOMMUNICATIONS SERVICES

SC-07 (5) BOUNDARY PROTECTION | DENY BY DEFAULT / ALLOW BY EXCEPTION

SC-07 (7) BOUNDARY PROTECTION | PREVENT SPLIT TUNNELING FOR REMOTE DEVICES

SC-07 (8) BOUNDARY PROTECTION | ROUTE TRAFFIC TO AUTHENTICATED PROXY SERVERS

SC-07 (9) BOUNDARY PROTECTION | RESTRICT THREATENING OUTGOING COMMUNICATIONS TRAFFIC

SC-07 (10) BOUNDARY PROTECTION | PREVENT UNAUTHORIZED EXFILTRATION

SC-07 (11) BOUNDARY PROTECTION | RESTRICT INCOMING COMMUNICATIONS TRAFFIC

SC-07 (12) BOUNDARY PROTECTION | HOST-BASED PROTECTION

SC-07 (13) BOUNDARY PROTECTION | ISOLATION OF SECURITY TOOLS / MECHANISMS / SUPPORT COMPONENTS SC-07 (14) BOUNDARY

PROTECTION | PROTECTS
AGAINST UNAUTHORIZED
PHYSICAL CONNECTIONS

SC-07 (15) BOUNDARY PROTECTION | ROUTE PRIVILEGED NETWORK ACCESSES

SC-07 (16) BOUNDARY PROTECTION | PREVENT DISCOVERY OF COMPONENTS / DEVICES

SC-07 (17) BOUNDARY PROTECTION | AUTOMATED ENFORCEMENT OF PROTOCOL FORMATS

SC-07 (18) BOUNDARY PROTECTION | FAIL SECURE

SC-07 (19) BOUNDARY PROTECTION | BLOCKS COMMUNICATION FROM NON-ORGANIZATIONALLY CONFIGURED HOSTS

SC-07 (20) BOUNDARY PROTECTION | DYNAMIC ISOLATION / SEGREGATION

SC-07 (21) BOUNDARY PROTECTION | ISOLATION OF INFORMATION SYSTEM COMPONENTS

SC-07 (22) BOUNDARY PROTECTION | SEPARATE SUBNETS FOR CONNECTING TO DIFFERENT SECURITY DOMAINS

SC-07 (23) BOUNDARY PROTECTION | DISABLE SENDER FEEDBACK ON PROTOCOL VALIDATION FAILURE

SC-08 TRANSMISSION CONFIDENTIALITY AND INTEGRITY

> SC-08 (1) TRANSMISSION CONFIDENTIALITY AND INTEGRITY | CRYPTOGRAPHIC OR ALTERNATE PHYSICAL PROTECTION

SC-08 (2) TRANSMISSION CONFIDENTIALITY AND INTEGRITY | PRE / POST TRANSMISSION HANDLING

SC-08 (3) TRANSMISSION CONFIDENTIALITY AND INTEGRITY | CRYPTOGRAPHIC PROTECTION FOR MESSAGE EXTERNALS

SC-08 (4) TRANSMISSION CONFIDENTIALITY AND INTEGRITY | CONCEAL / RANDOMIZE COMMUNICATIONS

SC-10 NETWORK DISCONNECT

SC-11 TRUSTED PATH

SC-11 (1) TRUSTED PATH | LOGICAL ISOLATION

SC-12 CRYPTOGRAPHIC KEY ESTABLISHMENT AND MANAGEMENT

> SC-12 (1) CRYPTOGRAPHIC KEY ESTABLISHMENT AND MANAGEMENT | AVAILABILITY

SC-12 (2) CRYPTOGRAPHIC KEY ESTABLISHMENT AND MANAGEMENT | SYMMETRIC KEYS

SC-12 (3) CRYPTOGRAPHIC KEY ESTABLISHMENT AND MANAGEMENT | ASYMMETRIC KEYS

SC-13 CRYPTOGRAPHIC PROTECTION

SC-15 COLLABORATIVE COMPUTING DEVICES

SC-15 (1) COLLABORATIVE COMPUTING DEVICES | PHYSICAL DISCONNECT

SC-15 (3) COLLABORATIVE COMPUTING DEVICES | DISABLING / REMOVAL IN SECURE WORK AREAS

SC-15 (4) COLLABORATIVE COMPUTING DEVICES | EXPLICITLY INDICATE CURRENT PARTICIPANTS

SC-16 TRANSMISSION OF SECURITY ATTRIBUTES

> SC-16 (1) TRANSMISSION OF SECURITY ATTRIBUTES | INTEGRITY VALIDATION

SC-17 PUBLIC KEY INFRASTRUCTURE CERTIFICATES

SC-18 MOBILE CODE

SC-18 (1) MOBILE CODE | IDENTIFY UNACCEPTABLE CODE / TAKE CORRECTIVE ACTIONS

SC-18 (2) MOBILE CODE | ACQUISITION / DEVELOPMENT / USE

SC-18 (3) MOBILE CODE | PREVENT DOWNLOADING / EXECUTION

SC-18 (4) MOBILE CODE | PREVENT AUTOMATIC EXECUTION

SC-18 (5) MOBILE CODE | ALLOW EXECUTION ONLY IN CONFINED ENVIRONMENTS

SC-19 VOICE OVER INTERNET PROTOCOL

SC-20 SECURE NAME / ADDRESS RESOLUTION SERVICE (AUTHORITATIVE SOURCE)

> SC-20 (1) SECURE NAME / ADDRESS RESOLUTION SERVICE (AUTHORITATIVE SOURCE) | CHILD SUBSPACES

SC-20 (2) SECURE NAME / ADDRESS RESOLUTION SERVICE (AUTHORITATIVE SOURCE) | DATA ORIGIN / INTEGRITY

SC-21 SECURE NAME / ADDRESS RESOLUTION SERVICE (RECURSIVE OR CACHING RESOLVER)

SC-22 ARCHITECTURE AND PROVISIONING FOR NAME / ADDRESS RESOLUTION SERVICE

SC-23 SESSION AUTHENTICITY

SC-23 (1) SESSION AUTHENTICITY | INVALIDATE SESSION IDENTIFIERS AT LOGOUT

SC-23 (3) SESSION AUTHENTICITY | UNIQUE SESSION IDENTIFIERS WITH RANDOMIZATION

SC-23 (5) SESSION AUTHENTICITY | ALLOWED CERTIFICATE AUTHORITIES

SC-24 FAIL IN KNOWN STATE

SC-25 THIN NODES

SC-26 HONEYPOTS

SC-27 PLATFORM-INDEPENDENT APPLICATIONS

SC-28 PROTECTION OF INFORMATION AT REST

SC-28 (1) PROTECTION OF INFORMATION AT REST | CRYPTOGRAPHIC PROTECTION

SC-28 (2) PROTECTION OF INFORMATION AT REST | OFF-LINE STORAGE

SC-29 HETEROGENEITY

SC-29 (1) HETEROGENEITY | VIRTUALIZATION TECHNIQUES

SC-30 CONCEALMENT AND MISDIRECTION

SC-30 (2) CONCEALMENT AND MISDIRECTION | RANDOMNESS

SC-30 (3) CONCEALMENT AND MISDIRECTION | CHANGE PROCESSING / STORAGE LOCATIONS

SC-30 (4) CONCEALMENT AND MISDIRECTION | MISLEADING

INFORMATION

SC-30 (5) CONCEALMENT AND MISDIRECTION | CONCEALMENT OF SYSTEM COMPONENTS

SC-31 COVERT CHANNEL ANALYSIS

SC-31 (1) COVERT CHANNEL ANALYSIS | TEST COVERT CHANNELS FOR EXPLOITABILITY

SC-31 (2) COVERT CHANNEL ANALYSIS | MAXIMUM BANDWIDTH

SC-31 (3) COVERT CHANNEL ANALYSIS | MEASURE BANDWIDTH IN OPERATIONAL ENVIRONMENTS

SC-32 INFORMATION SYSTEM PARTITIONING

SC-34 NON-MODIFIABLE EXECUTABLE PROGRAMS

SC-34 (1) NON-MODIFIABLE EXECUTABLE PROGRAMS | NO WRITABLE STORAGE

SC-34 (2) NON-MODIFIABLE EXECUTABLE PROGRAMS | INTEGRITY PROTECTION / READ-ONLY MEDIA

SC-34 (3) NON-MODIFIABLE EXECUTABLE PROGRAMS | HARDWARE-BASED PROTECTION

SC-35 HONEYCLIENTS

SC-36 DISTRIBUTED PROCESSING AND STORAGE

SC-36 (1) DISTRIBUTED PROCESSING AND STORAGE | POLLING TECHNIQUES

SC-37 OUT-OF-BAND CHANNELS

SC-37 (1) OUT-OF-BAND CHANNELS | ENSURE DELIVERY / TRANSMISSION

SC-38 OPERATIONS SECURITY

SC-39 PROCESS ISOLATION

SC-39 (1) PROCESS ISOLATION | HARDWARE SEPARATION

SC-39 (2) PROCESS ISOLATION | THREAD ISOLATION

SC-40 WIRELESS LINK PROTECTION

SC-40 (1) WIRELESS LINK PROTECTION | ELECTROMAGNETIC INTERFERENCE

SC-40 (2) WIRELESS LINK PROTECTION | REDUCE DETECTION POTENTIAL

SC-40 (3) WIRELESS LINK PROTECTION | IMITATIVE OR MANIPULATIVE COMMUNICATIONS DECEPTION

SC-40 (4) WIRELESS LINK PROTECTION | SIGNAL PARAMETER IDENTIFICATION

SC-41 PORT AND I/O DEVICE ACCESS

SC-42 SENSOR CAPABILITY AND DATA

SC-42 (1) SENSOR CAPABILITY AND DATA | REPORTING TO AUTHORIZED INDIVIDUALS OR ROLES

SC-42 (2) SENSOR CAPABILITY AND DATA | AUTHORIZED USE

SC-42 (3) SENSOR CAPABILITY AND DATA | PROHIBIT USE OF DEVICES

SC-43 USAGE RESTRICTIONS

SC-44 DETONATION CHAMBERS

Cloud Security Alliance - Cloud Controls Matrix - v3.0.1

Encryption & Key Management

EKM-01: Entitlement

EKM-02: Key Generation

EKM-04: Storage and Access

U.S. State Cyber Laws

New York State DFS Cyber Security Requirements

500.15 - Encryption of Nonpublic Information

Australian Government Information Security Manual Principles (2016)

24 Cryptography

24.04 Principle - Management of Cryptographic Systems

HITRUST CSF v9.3.1

06.01 Compliance with Legal Requirements

06.d Data Protection and Privacy of Covered Information

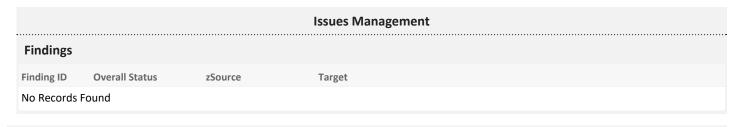
10.03 Cryptographic Controls

10.g Key Management

Control Standard Change Requests						
Tracking ID	Status	Change Name	Change Type	Change Summary	First Published	Last Updated
1707102	Completed	Major Statement Modification	Major Statement Modification	Modify standards to address PCI related finding; add the following statements: • Key-encrypting keys are at least as strong as the data-encrypting keys they protect • Key-management procedures specify processes to prevent unauthorized substitution of keys. Also remove reference to CIST documents in standards which are retired (CIST-0018 and CIST-0111) from statement and title of standard.	4/12/2021 4:29 PM	4/12/2021 4:42 PM

Control Procedures						
Procedure ID	Procedure Name	Туре	Next Review Date	SOX Scoping	Technical Domain	Compliance
CP-1399171	Bitlocker	Process	1/4/2021			~
CP-1399280	Encryption Key Rotation	Process	1/4/2021			
CP-1399334	Governance for High Risk Certificates	Process	1/4/2021			
CP-1399345	High Risk Certificate Inventory	Process	2/4/2021			
CP-1399399	Key management	Technical	2/4/2021		Cryptography Key Management	
CP-1399555	Periodic Review of CertPortal Access Logs	Process	2/4/2021			
CP-1399642	Restrict access to Aetna Certificate Portal to authenticated users	Technical	3/4/2021		User management	
CP-1399643	Restrict access to Venafi Management Console to authenticated administrators	Technical	3/4/2021		User management	
CP-1399674	Secure Aetna issued SSL certificates	Process	3/4/2021		System configuration	
CP-1399799	Undertaking of Encryption Certificate responsibility	Technical	3/4/2021			

Documents Repository						
Title	Owner	Next Attestation Date	Category	Subcategory		
Cloud Data at Rest Encryption Reference Security Architecture	Fretz, Kurt	11/30/2021	Security Architecture Artifact	Reference Artifact		



Compliance Status Compliance Rating: % of NonCompliant Controls:

Corporate Information

Company Description Address Zip Code Company City State No Records Found **Division** Division Description **Key Contacts** No Records Found **Business Unit Business Unit** Description **Unit Head Key Contacts** No Records Found

Enterprise Dat	ta Migration		
CVSH Policy:	CIST-0016	hAetna First	7/8/2009
	CIST-0018	Published:	
	CIST-0101		
	CITD-0005		
	CITD-0014		
	DOC-022425		
	ISPOL-061668		
Published Date:		hAetna Standard ID (Numeric):	248
		hAetna Standard Classification:	
Changed to top key control:		Top Key Control ?:	Yes
		Risk Category:	Data Protection Management - Encryption
Master Assessment:		Tracking ID:	151379
Change Request Status:	Completed	Legacy Source Environment:	hAetna
Record Status:	Updated		