

SECURITY LEADERSHIP FRAMEWORK

# CISO Master Checklist

A comprehensive security leadership framework covering 243 controls across 16 domains. Mapped to ISO 27001:2022, NIST CSF 2.0, NIS2, DORA, ISO 27701:2025, ISO 42001:2023, and the EU AI Act. All controls sorted by severity: Critical first, then High, then Medium.

|                        |                      |                         |                             |
|------------------------|----------------------|-------------------------|-----------------------------|
| <b>243</b><br>CONTROLS | <b>16</b><br>DOMAINS | <b>8+</b><br>FRAMEWORKS | <b>3</b><br>PRIORITY LEVELS |
|------------------------|----------------------|-------------------------|-----------------------------|

|                |              |                |                   |             |      |                 |           |
|----------------|--------------|----------------|-------------------|-------------|------|-----------------|-----------|
| ISO 27001:2022 | NIST CSF 2.0 | ISO 27701:2025 | ISO 42001:2023    | NIS2        | DORA | CIS Controls v8 | EU AI Act |
| GDPR           | MITRE ATT&CK | PCI DSS 4.0.1  | GCC Regional Laws | NIST AI RMF |      |                 |           |

# Building a Security Programme That Actually Works

Security leadership has never been more demanding. CISOs today are expected to navigate an expanding threat landscape, a growing web of global regulations, rapid cloud and AI adoption, and board rooms that require clear, business aligned reporting. The CISO Master Checklist was created to give security leaders a single, practical reference that cuts through the noise.

This framework consolidates the most critical controls from internationally recognised security standards into one actionable document. Whether you are building a security programme from the ground up, preparing for an ISO 27001 audit, responding to NIS2 obligations, implementing ISO 42001 AI management, or presenting a board level security strategy, this checklist provides the structure to move forward with confidence.

Each control is sorted by severity within its domain so you always address the most urgent items first. Controls are grouped Critical, then High, then Medium, with a visual divider between each group. Every control is mapped to its source framework for direct use in audit evidence and board papers.

**Who This Is For**

Designed for CISOs, Security Directors, vCISOs, IT Directors, and senior security professionals responsible for enterprise security programmes across industries and geographies.

**How to Use It**

Work through each domain starting with Critical controls. Check off completed items and note gaps. Use the framework references to connect each control back to its regulatory requirement for audit evidence.

**What You Will Get**

A clear picture of your current security posture, a prioritised list of gaps, and a structured basis for your security roadmap, board reporting, and budget justification.

**Keeping It Current**

Reassess all controls quarterly and after any major security incident, regulatory update, or significant change to your technology environment.

SEVERITY LEVELS — SORTING ORDER

**1 — CRITICAL**

Address immediately. Represents material risk. Remediate within 30 days and escalate to board if resource constrained. Listed first in every domain.

**2 — HIGH**

Important controls to address in the near term. Include in your 90 day security roadmap with clear ownership and timelines. Listed second.

**3 — MEDIUM**

Good practice controls for a mature security programme. Plan into your annual security strategy and budget cycle. Listed last.

RECOMMENDED ASSESSMENT APPROACH

**1 Initial Assessment (Weeks 1 to 2):** Work through all Critical controls across all domains first. Mark each as Complete, In Progress, or Not Started.

**2 Gap Analysis (Week 3):** Compile all incomplete items into a prioritised remediation roadmap with assigned owners, timelines, and cost estimates.

**3 Board Presentation (Week 4):** Present your gap analysis and 90 day remediation plan to leadership with supporting resource and budget requirements.

**4 Quarterly Review (Ongoing):** Reassess all controls every quarter, updating completion status and incorporating new threat intelligence or regulatory changes.

# Table of Contents

|    |                                                                             |             |             |
|----|-----------------------------------------------------------------------------|-------------|-------------|
| 01 | <b>Governance, Risk and Compliance</b><br>GRC                               | 6 C 7 H 2 M | 15 controls |
| 02 | <b>Identity and Access Management</b><br>IAM                                | 7 C 7 H 1 M | 15 controls |
| 03 | <b>Network and Infrastructure Security</b><br>Network                       | 7 C 8 H 0 M | 15 controls |
| 04 | <b>Security Operations and Incident Response</b><br>SOC and IR              | 8 C 7 H 0 M | 15 controls |
| 05 | <b>Cloud Security and Data Protection</b><br>Cloud                          | 8 C 7 H 0 M | 15 controls |
| 06 | <b>Vulnerability Management and Application Security</b><br>Vuln and AppSec | 6 C 7 H 2 M | 15 controls |
| 07 | <b>Third-Party and Supply Chain Security</b><br>Third Party                 | 6 C 6 H 3 M | 15 controls |
| 08 | <b>Business Continuity and Cyber Resilience</b><br>BCP and DR               | 7 C 8 H 0 M | 15 controls |
| 09 | <b>Security Awareness and Human Risk Management</b><br>Awareness            | 4 C 8 H 3 M | 15 controls |
| 10 | <b>Data Privacy and ISO 27701:2025</b><br>Privacy                           | 9 C 5 H 1 M | 15 controls |
| 11 | <b>Cryptography and Key Management</b><br>Cryptography                      | 6 C 6 H 3 M | 15 controls |
| 12 | <b>Physical and Environmental Security</b><br>Physical                      | 6 C 6 H 3 M | 15 controls |
| 13 | <b>AI Security and Governance</b><br>AI Security                            | 7 C 6 H 2 M | 15 controls |
| 14 | <b>ISO 42001 AI Management System</b><br>ISO 42001                          | 6 C 8 H 4 M | 18 controls |
| 15 | <b>Security Metrics and Board Reporting</b><br>Metrics                      | 5 C 7 H 3 M | 15 controls |
| 16 | <b>NIS2, DORA and Regulatory Compliance</b><br>NIS2 and DORA                | 9 C 5 H 1 M | 15 controls |

Governance, Risk and Compliance

| CHK                      | #  | CONTROL · FRAMEWORK REFERENCE                                                                                                                         | SEVERITY |
|--------------------------|----|-------------------------------------------------------------------------------------------------------------------------------------------------------|----------|
| CRITICAL CONTROLS        |    |                                                                                                                                                       |          |
| <input type="checkbox"/> | 1  | Establish and document an information security governance framework aligned to business objectives<br>ISO 27001:2022 CI.5 / NIST CSF GV.OC            | CRITICAL |
| <input type="checkbox"/> | 2  | Define, approve, and communicate security policies, standards, and procedures across the organisation<br>NIST CSF GV.PO / ISO 27001 A.5.1             | CRITICAL |
| <input type="checkbox"/> | 3  | Align the security strategy with business objectives and formally document the organisational risk appetite<br>ISO 27001:2022 CI.4.1 / NIST CSF GV.OC | CRITICAL |
| <input type="checkbox"/> | 4  | Conduct annual security risk assessments using an accepted methodology such as ISO 27005 or NIST<br>ISO 27001:2022 CI.6.1 / ISO 27005:2022            | CRITICAL |
| <input type="checkbox"/> | 5  | Maintain a risk register that includes treatment plans, risk owners, and regular review dates<br>NIST CSF ID.RA / ISO 27001 CI.6.1.2                  | CRITICAL |
| <input type="checkbox"/> | 6  | Implement a regulatory compliance tracking programme covering GDPR, PDPL, NCA, and all applicable laws<br>NIS2 / DORA / GDPR Art.5 / GCC Laws         | CRITICAL |
| HIGH CONTROLS            |    |                                                                                                                                                       |          |
| <input type="checkbox"/> | 7  | Establish board level security oversight with a defined reporting cadence of at least quarterly<br>NIS2 Art.20 / DORA Art.5 / ISO 27001 CI.5.1        | HIGH     |
| <input type="checkbox"/> | 8  | Define a RACI matrix for all security functions and ensure accountability is assigned to named individuals<br>ISO 27001:2022 CI.5.3 / NIST CSF GV.RR  | HIGH     |
| <input type="checkbox"/> | 9  | Integrate information security risk management with the enterprise risk management framework<br>ISO 27005:2022 / NIST RMF                             | HIGH     |
| <input type="checkbox"/> | 10 | Establish Key Risk Indicators and build leadership dashboards to track the security risk posture over time<br>NIST CSF GV.RM / ISO 27001 CI.9.1       | HIGH     |
| <input type="checkbox"/> | 11 | Schedule internal and external security audits with documented scope, findings, and remediation tracking<br>ISO 27001:2022 CI.9.2 / NIS2 Art.21       | HIGH     |

Governance, Risk and Compliance

| CHK                      | #  | CONTROL · FRAMEWORK REFERENCE                                                                                                                        | SEVERITY |
|--------------------------|----|------------------------------------------------------------------------------------------------------------------------------------------------------|----------|
| <input type="checkbox"/> | 12 | Maintain a centralised evidence repository for all compliance artefacts and audit logs<br>ISO 27001:2022 CI.7.5 / DORA Art.12                        | HIGH     |
| <input type="checkbox"/> | 13 | Align the security programme to at least one major framework such as ISO 27001, NIST CSF, or CIS Controls v8<br>Multi-framework alignment            | HIGH     |
| MEDIUM CONTROLS          |    |                                                                                                                                                      |          |
| <input type="checkbox"/> | 14 | Review and formally update all security policies annually and after every significant security incident<br>ISO 27001:2022 CI.9.3 / NIST CSF GV.PO    | MEDIUM   |
| <input type="checkbox"/> | 15 | Establish a formal exception management process for policy deviations with documented approvals and time limits<br>CIS Controls v8 / ISO 27001 A.5.1 | MEDIUM   |

## DOMAIN 02 OF 16

7 Critical

7 High

1 Medium

# Identity and Access Management

| CHK                      | #  | CONTROL · FRAMEWORK REFERENCE                                                                                                                          | SEVERITY |
|--------------------------|----|--------------------------------------------------------------------------------------------------------------------------------------------------------|----------|
| CRITICAL CONTROLS        |    |                                                                                                                                                        |          |
| <input type="checkbox"/> | 1  | Implement multi-factor authentication for all privileged accounts without any exceptions<br>CIS Control 6 / NIS2 Art.21 / NIST SP 800-63B              | CRITICAL |
| <input type="checkbox"/> | 2  | Deploy multi-factor authentication across all remote access methods and cloud service portals<br>NIST SP 800-63B / ISO 27001 A.8.5                     | CRITICAL |
| <input type="checkbox"/> | 3  | Establish a Privileged Access Management solution to control, monitor, and audit all privileged sessions<br>CIS Control 5 / ISO 27001 A.8.2            | CRITICAL |
| <input type="checkbox"/> | 4  | Conduct quarterly user access reviews and certifications across all critical systems and applications<br>ISO 27001 A.5.18 / CIS Control 6.7            | CRITICAL |
| <input type="checkbox"/> | 5  | Enforce the principle of least privilege consistently across all systems, applications, and cloud environments<br>CIS Control 6.8 / ISO 27001 A.8.2    | CRITICAL |
| <input type="checkbox"/> | 6  | Enforce a password policy requiring a minimum of 14 characters, complexity, and no reuse across last 12 passwords<br>NIST SP 800-63B / CIS Control 5.2 | CRITICAL |
| <input type="checkbox"/> | 7  | Monitor and alert on all privileged account activity in real time using a SIEM or dedicated PAM tooling<br>NIST CSF DE.AE / CIS Control 8.5            | CRITICAL |
| HIGH CONTROLS            |    |                                                                                                                                                        |          |
| <input type="checkbox"/> | 8  | Implement Zero Trust Architecture principles starting with identity verification for every access request<br>NIST SP 800-207 / ISO 27001 A.8.3         | HIGH     |
| <input type="checkbox"/> | 9  | Implement a role-based access control framework with clearly defined roles mapped to business functions<br>ISO 27001 A.5.15 / NIST SP 800-53 AC-2      | HIGH     |
| <input type="checkbox"/> | 10 | Automate the joiner, mover, and leaver process to ensure access is provisioned and revoked consistently<br>ISO 27001 A.6.1 / CIS Control 6             | HIGH     |
| <input type="checkbox"/> | 11 | Deploy Single Sign-On for enterprise applications to reduce password fatigue and improve audit trail quality<br>CIS Control 12 / ISO 27001 A.8.5       | HIGH     |

DOMAIN 02 OF 16 — CONTINUED

Severity sorted: Critical → High → Medium

Identity and Access Management

| CHK                      | #  | CONTROL · FRAMEWORK REFERENCE                                                                                                                | SEVERITY |
|--------------------------|----|----------------------------------------------------------------------------------------------------------------------------------------------|----------|
| <input type="checkbox"/> | 12 | Implement an Identity Governance and Administration platform to manage access lifecycle at scale<br>ISO 27001 A.5.18 / NIST SP 800-53        | HIGH     |
| <input type="checkbox"/> | 13 | Establish a service account management policy including documentation, ownership, and regular rotation<br>CIS Control 5.4 / ISO 27001 A.5.17 | HIGH     |
| <input type="checkbox"/> | 14 | Identify and disable all dormant accounts that have been inactive for more than 30 days<br>CIS Control 5.3 / ISO 27001 A.5.18                | HIGH     |
| MEDIUM CONTROLS          |    |                                                                                                                                              |          |
| <input type="checkbox"/> | 15 | Implement just-in-time access for sensitive systems to reduce standing privilege exposure<br>NIST SP 800-207 / Zero Trust Principles         | MEDIUM   |

## DOMAIN 03 OF 16

7 Critical

8 High

## Network and Infrastructure Security

| CHK                      | #  | CONTROL · FRAMEWORK REFERENCE                                                                                                                          | SEVERITY |
|--------------------------|----|--------------------------------------------------------------------------------------------------------------------------------------------------------|----------|
| CRITICAL CONTROLS        |    |                                                                                                                                                        |          |
| <input type="checkbox"/> | 1  | Implement network segmentation and micro-segmentation to limit lateral movement in the event of a breach<br>CIS Control 12 / ISO 27001 A.8.22          | CRITICAL |
| <input type="checkbox"/> | 2  | Deploy Next Generation Firewalls with application awareness and threat intelligence integration at all perimeters<br>CIS Control 13 / ISO 27001 A.8.20 | CRITICAL |
| <input type="checkbox"/> | 3  | Implement Intrusion Detection and Prevention Systems across all critical network segments<br>CIS Control 13.3 / ISO 27001 A.8.16                       | CRITICAL |
| <input type="checkbox"/> | 4  | Enforce TLS 1.3 for all data in transit and formally deprecate TLS 1.1, TLS 1.2, and all SSL versions<br>ISO 27001 A.8.24 / NIST SP 800-52             | CRITICAL |
| <input type="checkbox"/> | 5  | Conduct network vulnerability scanning at a minimum of quarterly frequency across all in-scope assets<br>CIS Control 7 / NIS2 Art.21                   | CRITICAL |
| <input type="checkbox"/> | 6  | Harden all network devices including routers, switches, and firewalls to CIS benchmark standards<br>CIS Benchmarks / ISO 27001 A.8.9                   | CRITICAL |
| <input type="checkbox"/> | 7  | Conduct annual penetration testing of the full network infrastructure using a qualified third party<br>NIS2 Art.21 / ISO 27001 A.5.34                  | CRITICAL |
| HIGH CONTROLS            |    |                                                                                                                                                        |          |
| <input type="checkbox"/> | 8  | Establish a DMZ architecture for all internet facing services to isolate them from internal networks<br>ISO 27001 A.8.22 / NIST SP 800-41              | HIGH     |
| <input type="checkbox"/> | 9  | Deploy a Web Application Firewall in front of all public facing web applications and APIs<br>CIS Control 16 / OWASP                                    | HIGH     |
| <input type="checkbox"/> | 10 | Implement DDoS protection and tested mitigation capabilities for all critical internet facing services<br>NIST CSF PR.DS / ISO 27001 A.8.20            | HIGH     |
| <input type="checkbox"/> | 11 | Implement Zero Trust Network Access as the primary remote access mechanism for all staff and third parties<br>NIST SP 800-207 / ISO 27001 A.6.7        | HIGH     |

DOMAIN 03 OF 16 — CONTINUED

Severity sorted: Critical → High → Medium

Network and Infrastructure Security

| CHK                      | #  | CONTROL · FRAMEWORK REFERENCE                                                                                                                                   | SEVERITY |
|--------------------------|----|-----------------------------------------------------------------------------------------------------------------------------------------------------------------|----------|
| <input type="checkbox"/> | 12 | Deploy DNS security controls including DNSSEC, DNS filtering, and protection against DNS based threats<br><small>CIS Control 9.2 / ISO 27001 A.8.20</small>     | HIGH     |
| <input type="checkbox"/> | 13 | Implement network traffic analysis and anomaly detection to identify unusual patterns and lateral movement<br><small>NIST CSF DE.AE / CIS Control 13</small>    | HIGH     |
| <input type="checkbox"/> | 14 | Disable all unused ports, protocols, and services on every network device and server across the environment<br><small>CIS Control 4.8 / ISO 27001 A.8.8</small> | HIGH     |
| <input type="checkbox"/> | 15 | Implement secure Wi-Fi using WPA3, EAP-TLS authentication, and maintain a separate guest SSID<br><small>CIS Control 12 / ISO 27001 A.8.20</small>               | HIGH     |

## DOMAIN 04 OF 16

8 Critical

7 High

## Security Operations and Incident Response

| CHK                      | #  | CONTROL · FRAMEWORK REFERENCE                                                                                                                          | SEVERITY |
|--------------------------|----|--------------------------------------------------------------------------------------------------------------------------------------------------------|----------|
| CRITICAL CONTROLS        |    |                                                                                                                                                        |          |
| <input type="checkbox"/> | 1  | Establish a 24 by 7 Security Operations Centre capability either in-house or via a managed security service provider<br>NIS2 Art.21 / ISO 27001 A.5.25 | CRITICAL |
| <input type="checkbox"/> | 2  | Deploy a SIEM platform with use-case driven detection rules, tuned alert thresholds, and log retention policies<br>CIS Control 8 / ISO 27001 A.8.16    | CRITICAL |
| <input type="checkbox"/> | 3  | Define, document, and test an Incident Response Plan at least once per year including all key stakeholders<br>ISO 27001 A.5.26 / NIST SP 800-61        | CRITICAL |
| <input type="checkbox"/> | 4  | Establish a formal incident classification and severity matrix covering P1 through P4 with response SLAs<br>NIST CSF RS.AN / ISO 27001 A.5.25          | CRITICAL |
| <input type="checkbox"/> | 5  | Define escalation procedures, communication trees, and response runbooks for each incident severity level<br>NIS2 Art.23 / NIST SP 800-61              | CRITICAL |
| <input type="checkbox"/> | 6  | Define breach notification workflows covering NIS2 24 hour early warning and GDPR 72 hour formal report obligations<br>NIS2 Art.23 / GDPR Art.33       | CRITICAL |
| <input type="checkbox"/> | 7  | Maintain a complete incident log and conduct a formal post-incident review for every P1 and P2 incident<br>ISO 27001 A.5.27 / NIST SP 800-61           | CRITICAL |
| <input type="checkbox"/> | 8  | Deploy Endpoint Detection and Response or Extended Detection and Response on all managed endpoints<br>CIS Control 13 / ISO 27001 A.8.7                 | CRITICAL |
| HIGH CONTROLS            |    |                                                                                                                                                        |          |
| <input type="checkbox"/> | 9  | Implement Security Orchestration, Automation and Response tooling to accelerate detection and response workflows<br>NIST CSF RS.MA / ISO 27001 A.5.26  | HIGH     |
| <input type="checkbox"/> | 10 | Conduct quarterly tabletop exercises simulating realistic threat scenarios with cross-functional participation<br>NIST CSF RS.IM / DORA Art.26         | HIGH     |
| <input type="checkbox"/> | 11 | Implement a threat intelligence platform with IoC management and integration into SIEM detection rules<br>MITRE ATT&CK / NIST CSF ID.RA                | HIGH     |

DOMAIN 04 OF 16 — CONTINUED

Severity sorted: Critical → High → Medium

Security Operations and Incident Response

| CHK                      | #  | CONTROL · FRAMEWORK REFERENCE                                                                                                                   | SEVERITY |
|--------------------------|----|-------------------------------------------------------------------------------------------------------------------------------------------------|----------|
| <input type="checkbox"/> | 12 | Establish digital forensics investigation capabilities and a documented chain of custody process<br>ISO 27001 A.5.28 / NIST SP 800-86           | HIGH     |
| <input type="checkbox"/> | 13 | Integrate proactive threat hunting activities into regular SOC operations using MITRE ATT&CK as a guide<br>MITRE ATT&CK / NIST CSF DE.AE        | HIGH     |
| <input type="checkbox"/> | 14 | Monitor the dark web and threat intelligence feeds for credential leaks and brand impersonation<br>NIST CSF ID.RA / CIS Control 17              | HIGH     |
| <input type="checkbox"/> | 15 | Establish and track Mean Time to Detect and Mean Time to Respond KPIs with monthly reporting to leadership<br>NIST CSF RS.MI / ISO 27001 CI.9.1 | HIGH     |

## DOMAIN 05 OF 16

8 Critical

7 High

## Cloud Security and Data Protection

| CHK                      | #  | CONTROL · FRAMEWORK REFERENCE                                                                                                                                                | SEVERITY |
|--------------------------|----|------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|----------|
| CRITICAL CONTROLS        |    |                                                                                                                                                                              |          |
| <input type="checkbox"/> | 1  | Implement a Cloud Security Posture Management platform to continuously monitor cloud configuration drift<br><small>CIS Benchmarks / ISO 27001 A.5.23</small>                 | CRITICAL |
| <input type="checkbox"/> | 2  | Enforce cloud security baseline configurations aligned to CIS Benchmarks for all cloud accounts and services<br><small>CIS Benchmarks / ISO 27001 A.8.9</small>              | CRITICAL |
| <input type="checkbox"/> | 3  | Implement a four tier data classification framework covering Public, Internal, Confidential, and Restricted data<br><small>ISO 27001 A.5.12 / NIST SP 800-60</small>         | CRITICAL |
| <input type="checkbox"/> | 4  | Encrypt all data at rest using AES-256 or equivalent with encryption keys stored separately from the data<br><small>ISO 27001 A.8.24 / NIST FIPS 197</small>                 | CRITICAL |
| <input type="checkbox"/> | 5  | Implement Data Loss Prevention controls across email, endpoint, and cloud channels to prevent data exfiltration<br><small>NIST CSF PR.DS / ISO 27001 A.8.12</small>          | CRITICAL |
| <input type="checkbox"/> | 6  | Implement data residency controls to ensure PII is stored within approved jurisdictions per applicable regulations<br><small>GDPR Art.44 / UAE PDPL / ISO 27701</small>      | CRITICAL |
| <input type="checkbox"/> | 7  | Implement backup encryption and verify offsite backup restoration successfully at least monthly<br><small>ISO 27001 A.8.13 / CIS Control 11</small>                          | CRITICAL |
| <input type="checkbox"/> | 8  | Establish data retention, archival, and secure disposal policies aligned to regulatory and business requirements<br><small>GDPR Art.5 / ISO 27701 / ISO 27001 A.8.10</small> | CRITICAL |
| HIGH CONTROLS            |    |                                                                                                                                                                              |          |
| <input type="checkbox"/> | 9  | Deploy a Cloud Access Security Broker to gain visibility and control over all sanctioned and unsanctioned SaaS usage<br><small>ISO 27001 A.5.23 / NIST CSF PR.AC</small>     | HIGH     |
| <input type="checkbox"/> | 10 | Establish and document the cloud shared responsibility model for each cloud provider and service category<br><small>ISO 27001 A.5.23 / CSA CCM</small>                       | HIGH     |
| <input type="checkbox"/> | 11 | Conduct cloud infrastructure security assessments quarterly using automated tooling and manual review<br><small>CIS Benchmarks / ISO 27001 A.8.8</small>                     | HIGH     |

# Cloud Security and Data Protection

| CHK                      | #  | CONTROL · FRAMEWORK REFERENCE                                                                                                                             | SEVERITY |
|--------------------------|----|-----------------------------------------------------------------------------------------------------------------------------------------------------------|----------|
| <input type="checkbox"/> | 12 | Implement cloud workload protection for all containers, virtual machines, and serverless workloads<br><small>CIS Kubernetes Benchmark / ISO 27001</small> | HIGH     |
| <input type="checkbox"/> | 13 | Deploy a secrets management solution to eliminate hardcoded credentials and manage API keys centrally<br><small>CIS Control 18 / ISO 27001 A.8.24</small> | HIGH     |
| <input type="checkbox"/> | 14 | Deploy Infrastructure as Code security scanning in all CI/CD pipelines before code reaches production<br><small>CIS DevSecOps / NIST SP 800-218</small>   | HIGH     |
| <input type="checkbox"/> | 15 | Monitor and control Shadow IT by maintaining a current inventory of all unsanctioned cloud services in use<br><small>NIS2 Art.21 / NIST CSF ID.AM</small> | HIGH     |

## DOMAIN 06 OF 16

6 Critical

7 High

2 Medium

# Vulnerability Management and Application Security

| CHK                      | #  | CONTROL · FRAMEWORK REFERENCE                                                                                                                                 | SEVERITY |
|--------------------------|----|---------------------------------------------------------------------------------------------------------------------------------------------------------------|----------|
| CRITICAL CONTROLS        |    |                                                                                                                                                               |          |
| <input type="checkbox"/> | 1  | Implement continuous vulnerability scanning across all assets in the environment including cloud and on-premises<br>CIS Control 7 / NIS2 Art.21               | CRITICAL |
| <input type="checkbox"/> | 2  | Establish SLA-based remediation timelines requiring Critical fixes within 24 hours and High fixes within 7 days<br>NIST CSF RS.MI / CIS Control 7.7           | CRITICAL |
| <input type="checkbox"/> | 3  | Deploy an automated patch management programme covering all operating systems, applications, and firmware<br>CIS Control 7.4 / ISO 27001 A.8.8                | CRITICAL |
| <input type="checkbox"/> | 4  | Conduct external and internal penetration testing at least annually using a qualified independent third party<br>NIS2 Art.21 / DORA Art.26                    | CRITICAL |
| <input type="checkbox"/> | 5  | Maintain a comprehensive and continuously updated asset inventory covering all hardware, software, and cloud resources<br>CIS Control 1 / ISO 27001 A.5.9     | CRITICAL |
| <input type="checkbox"/> | 6  | Subscribe to CVE feeds and zero-day alert services for all technologies deployed in the production environment<br>CISA KEV / NVD / NIST CSF ID.RA             | CRITICAL |
| HIGH CONTROLS            |    |                                                                                                                                                               |          |
| <input type="checkbox"/> | 7  | Implement a Secure Software Development Lifecycle framework covering all stages from design through deployment<br>NIST SP 800-64 / OWASP SAMM                 | HIGH     |
| <input type="checkbox"/> | 8  | Integrate Static Application Security Testing into all CI/CD pipelines with quality gates blocking high severity findings<br>OWASP DevSecOps / CIS Control 16 | HIGH     |
| <input type="checkbox"/> | 9  | Implement Dynamic Application Security Testing for all web applications before every major production release<br>OWASP Testing Guide v4 / CIS Control 16      | HIGH     |
| <input type="checkbox"/> | 10 | Deploy Software Composition Analysis tooling to identify and manage open source component vulnerabilities<br>CIS Control 16.3 / NIST SP 800-218               | HIGH     |
| <input type="checkbox"/> | 11 | Implement container image scanning and runtime protection for all Kubernetes and containerised workloads<br>CIS Kubernetes Benchmark / NIST SP 800-190        | HIGH     |

DOMAIN 06 OF 16 — CONTINUED

Severity sorted: Critical → High → Medium

Vulnerability Management and Application Security

| CHK                      | #  | CONTROL · FRAMEWORK REFERENCE                                                                                                                        | SEVERITY |
|--------------------------|----|------------------------------------------------------------------------------------------------------------------------------------------------------|----------|
| <input type="checkbox"/> | 12 | Conduct API security testing against the OWASP API Top 10 and implement an API gateway with rate limiting<br>OWASP API Top 10 / CIS Control 16       | HIGH     |
| <input type="checkbox"/> | 13 | Establish a secure code review process and embed security training into the developer onboarding programme<br>NIST SP 800-64 / OWASP SAMM            | HIGH     |
| MEDIUM CONTROLS          |    |                                                                                                                                                      |          |
| <input type="checkbox"/> | 14 | Establish a bug bounty or responsible disclosure programme with a clearly published security contact<br>NIST CSF / ISO 27001 A.5.8                   | MEDIUM   |
| <input type="checkbox"/> | 15 | Implement mobile application security testing aligned to the OWASP Mobile Application Security Verification Standard<br>OWASP MASVS / CIS Control 16 | MEDIUM   |

## DOMAIN 07 OF 16

6 Critical

6 High

3 Medium

## Third-Party and Supply Chain Security

| CHK                      | #  | CONTROL · FRAMEWORK REFERENCE                                                                                                                                         | SEVERITY |
|--------------------------|----|-----------------------------------------------------------------------------------------------------------------------------------------------------------------------|----------|
| CRITICAL CONTROLS        |    |                                                                                                                                                                       |          |
| <input type="checkbox"/> | 1  | Implement a vendor risk assessment framework with defined criteria for evaluating and tiering all third parties<br>ISO 27001 A.5.19 / DORA Art.28                     | CRITICAL |
| <input type="checkbox"/> | 2  | Classify all vendors into risk tiers of Critical, High, Medium, and Low based on data access and service criticality<br>ISO 27001 A.5.19 / DORA Art.30                | CRITICAL |
| <input type="checkbox"/> | 3  | Include mandatory security requirements and right to audit clauses in all vendor contracts and master agreements<br>ISO 27001 A.5.20 / NIS2 Art.21                    | CRITICAL |
| <input type="checkbox"/> | 4  | Conduct formal annual security assessments of all Critical and High tier vendors using questionnaires or audits<br>NIS2 Art.21 / DORA Art.28                          | CRITICAL |
| <input type="checkbox"/> | 5  | Include mandatory security incident notification obligations with defined timelines in all vendor agreements<br>NIS2 Art.21 / DORA Art.28                             | CRITICAL |
| <input type="checkbox"/> | 6  | Maintain a vendor register with current risk ratings, assessment dates, and named relationship owners<br>ISO 27001 A.5.19 / DORA Art.30                               | CRITICAL |
| HIGH CONTROLS            |    |                                                                                                                                                                       |          |
| <input type="checkbox"/> | 7  | Implement fourth-party risk monitoring to understand the security posture of your vendors key sub-processors<br>DORA Art.28 / ISO 27001 A.5.21                        | HIGH     |
| <input type="checkbox"/> | 8  | Require and review SOC 2 Type II reports, ISO 27001 certificates, and penetration test executive summaries annually<br>ISO 27001 A.5.21 / DORA Art.28                 | HIGH     |
| <input type="checkbox"/> | 9  | Establish a formal vendor offboarding process that includes data deletion confirmation and access revocation<br>ISO 27701 Cl.8 / ISO 27001 A.5.20                     | HIGH     |
| <input type="checkbox"/> | 10 | Implement a Software Bill of Materials for all critical applications to understand open source and commercial dependencies<br>NIST SP 800-218 / Executive Order 14028 | HIGH     |
| <input type="checkbox"/> | 11 | Send vendor security questionnaires based on SIG Lite or CAIQ at least annually for all in-scope vendors<br>ISO 27001 A.5.19 / CSA CAIQ                               | HIGH     |

Third-Party and Supply Chain Security

| CHK                      | #  | CONTROL · FRAMEWORK REFERENCE                                                                                                                  | SEVERITY |
|--------------------------|----|------------------------------------------------------------------------------------------------------------------------------------------------|----------|
| <input type="checkbox"/> | 12 | Implement continuous vendor monitoring using external threat intelligence to detect vendor compromise early<br>DORA Art.28 / NIST CSF ID.SC    | HIGH     |
| MEDIUM CONTROLS          |    |                                                                                                                                                |          |
| <input type="checkbox"/> | 13 | Verify vendor cyber insurance coverage, policy limits, and that your organisation is named where appropriate<br>DORA Art.28 / ISO 27001 A.5.20 | MEDIUM   |
| <input type="checkbox"/> | 14 | Define concentration risk limits for critical ICT service providers and document your exit strategy for each<br>DORA Art.29 / ISO 27001 A.5.19 | MEDIUM   |
| <input type="checkbox"/> | 15 | Identify and manage Shadow AI by inventorying all unsanctioned SaaS AI tools being used across the organisation<br>NIS2 Art.21 / EU AI Act     | MEDIUM   |

## DOMAIN 08 OF 16

7 Critical

8 High

## Business Continuity and Cyber Resilience

| CHK                      | #  | CONTROL · FRAMEWORK REFERENCE                                                                                                                                    | SEVERITY |
|--------------------------|----|------------------------------------------------------------------------------------------------------------------------------------------------------------------|----------|
| CRITICAL CONTROLS        |    |                                                                                                                                                                  |          |
| <input type="checkbox"/> | 1  | Develop and maintain a comprehensive Business Continuity Plan covering all critical business functions and systems<br>ISO 22301:2019 / DORA Art.11               | CRITICAL |
| <input type="checkbox"/> | 2  | Establish a Disaster Recovery Plan and test it at least annually with documented results and lessons learned<br>ISO 22301 / DORA Art.11 / NIS2 Art.21            | CRITICAL |
| <input type="checkbox"/> | 3  | Define and formally document Recovery Time Objectives and Recovery Point Objectives for all critical systems<br>ISO 22301 Cl.8.4 / DORA Art.11                   | CRITICAL |
| <input type="checkbox"/> | 4  | Implement a 3-2-1 backup strategy with three copies of data, two different media types, and one copy offsite<br>CIS Control 11 / ISO 27001 A.8.13                | CRITICAL |
| <input type="checkbox"/> | 5  | Test backup restoration successfully at least monthly and document the results including any issues found<br>ISO 22301 Cl.8.5 / CIS Control 11                   | CRITICAL |
| <input type="checkbox"/> | 6  | Implement ransomware resilient backups using immutable storage and air-gapped copies that cannot be encrypted remotely<br>CISA Ransomware Guide / CIS Control 11 | CRITICAL |
| <input type="checkbox"/> | 7  | Maintain an up-to-date emergency contacts list, escalation matrix, and crisis war room setup instructions<br>ISO 22301 Cl.8.4 / NIST SP 800-61                   | CRITICAL |
| HIGH CONTROLS            |    |                                                                                                                                                                  |          |
| <input type="checkbox"/> | 8  | Conduct annual BCP and DR tabletop exercises with board and executive participation to test decision making<br>NIS2 Art.21 / ISO 22301 Cl.8.5                    | HIGH     |
| <input type="checkbox"/> | 9  | Establish alternate communication channels for use during a crisis when primary systems may be unavailable<br>ISO 22301 Cl.8.4 / NIS2 Art.23                     | HIGH     |
| <input type="checkbox"/> | 10 | Define a crisis communication plan including media response protocols and pre-approved statement templates<br>ISO 22301 Cl.8.4 / DORA Art.14                     | HIGH     |
| <input type="checkbox"/> | 11 | Conduct a formal Business Impact Analysis annually to keep recovery priorities aligned to current business needs<br>ISO 22301 Cl.8.2 / DORA Art.11               | HIGH     |

## Business Continuity and Cyber Resilience

| CHK                      | #  | CONTROL · FRAMEWORK REFERENCE                                                                                                                      | SEVERITY |
|--------------------------|----|----------------------------------------------------------------------------------------------------------------------------------------------------|----------|
| <input type="checkbox"/> | 12 | Establish a cyber insurance policy with coverage limits and terms aligned to your documented risk profile<br>DORA Art.12 / ISO 27001               | HIGH     |
| <input type="checkbox"/> | 13 | Implement geographic or cloud redundancy for all systems classified as Critical or High in the Business Impact Analysis<br>DORA Art.11 / ISO 22301 | HIGH     |
| <input type="checkbox"/> | 14 | Define supply chain resilience strategies to manage the impact of a critical technology provider outage<br>DORA Art.28 / NIS2 Art.21               | HIGH     |
| <input type="checkbox"/> | 15 | Perform annual cyber resilience testing through threat-led penetration testing or red team exercises<br>DORA Art.26 / NIS2 Art.21                  | HIGH     |

## DOMAIN 09 OF 16

## Security Awareness and Human Risk Management

4 Critical

8 High

3 Medium

| CHK                      | #  | CONTROL · FRAMEWORK REFERENCE                                                                                                                                      | SEVERITY |
|--------------------------|----|--------------------------------------------------------------------------------------------------------------------------------------------------------------------|----------|
| CRITICAL CONTROLS        |    |                                                                                                                                                                    |          |
| <input type="checkbox"/> | 1  | Implement mandatory annual security awareness training for every member of staff including contractors and board members<br>ISO 27001 A.6.3 / NIS2 Art.21          | CRITICAL |
| <input type="checkbox"/> | 2  | Conduct monthly phishing simulations with automatic enrolment of those who click into targeted remedial training<br>CIS Control 14 / NIS2 Art.21                   | CRITICAL |
| <input type="checkbox"/> | 3  | Include specific security responsibilities and acceptable use obligations in every employee onboarding and offboarding process<br>ISO 27001 A.6.2 / CIS Control 14 | CRITICAL |
| <input type="checkbox"/> | 4  | Maintain an Acceptable Use Policy and obtain annual written acknowledgment from all staff confirming compliance<br>ISO 27001 A.5.10 / CIS Control 14               | CRITICAL |
| HIGH CONTROLS            |    |                                                                                                                                                                    |          |
| <input type="checkbox"/> | 5  | Deliver role based security training covering specific threats and responsibilities for IT, finance, HR, and executives<br>NIS2 Art.20 / ISO 27001 A.6.3           | HIGH     |
| <input type="checkbox"/> | 6  | Establish an insider threat detection, monitoring, and structured response programme with clear escalation paths<br>NIST SP 800-53 AT / ISO 27001 A.6.6            | HIGH     |
| <input type="checkbox"/> | 7  | Track security awareness KPIs including training completion rates and phishing click rates and report quarterly<br>ISO 27001 CI.9.1 / NIST CSF PR.AT               | HIGH     |
| <input type="checkbox"/> | 8  | Establish an anonymous security reporting mechanism such as a hotline or portal to encourage early disclosure<br>ISO 27001 A.6.4 / NIS2 Art.21                     | HIGH     |
| <input type="checkbox"/> | 9  | Conduct social engineering assessments including vishing campaigns and physical security testing at least annually<br>NIST CSF PR.AT / ISO 27001 A.5.34            | HIGH     |
| <input type="checkbox"/> | 10 | Provide board and executive level cybersecurity briefings at least quarterly covering threat landscape and programme status<br>NIS2 Art.20 / DORA Art.5            | HIGH     |
| <input type="checkbox"/> | 11 | Enforce BYOD security policy through technical controls and annual training for all staff using personal devices<br>CIS Control 4 / ISO 27001 A.6.7                | HIGH     |

# Security Awareness and Human Risk Management

| CHK                      | #  | CONTROL · FRAMEWORK REFERENCE                                                                                                                                              | SEVERITY |
|--------------------------|----|----------------------------------------------------------------------------------------------------------------------------------------------------------------------------|----------|
| <input type="checkbox"/> | 12 | <div>Train all staff on data handling, classification, and secure disposal procedures relevant to their role</div> <div>ISO 27701 CI.6 / GDPR Art.32</div>                 | HIGH     |
| MEDIUM CONTROLS          |    |                                                                                                                                                                            |          |
| <input type="checkbox"/> | 13 | <div>Implement a security champion programme with trained representatives embedded in each business unit</div> <div>OWASP SAMM / ISO 27001 A.6.3</div>                     | MEDIUM   |
| <input type="checkbox"/> | 14 | <div>Develop security culture KPIs and conduct an annual security culture benchmarking exercise across the organisation</div> <div>ISO 27001 CI.9.1 / NIST CSF GV.OC</div> | MEDIUM   |
| <input type="checkbox"/> | 15 | <div>Measure and actively work to reduce the organisational human risk score using behavioural analytics tooling</div> <div>CIS Control 14 / ISO 27001 A.6.3</div>         | MEDIUM   |

## DOMAIN 10 OF 16

9 Critical

5 High

1 Medium

## Data Privacy and ISO 27701:2025

| CHK                      | #  | CONTROL · FRAMEWORK REFERENCE                                                                                                                                              | SEVERITY |
|--------------------------|----|----------------------------------------------------------------------------------------------------------------------------------------------------------------------------|----------|
| CRITICAL CONTROLS        |    |                                                                                                                                                                            |          |
| <input type="checkbox"/> | 1  | Establish a Privacy Information Management System aligned to ISO 27701:2025 covering all PII processing activities<br>ISO 27701:2025 Cl.4-5                                | CRITICAL |
| <input type="checkbox"/> | 2  | Appoint a named Data Protection Officer with direct board access and documented independence in their role<br>GDPR Art.37 / ISO 27701:2025 Cl.5                            | CRITICAL |
| <input type="checkbox"/> | 3  | Maintain Records of Processing Activities for all PII covering purposes, categories, recipients, and retention periods<br>GDPR Art.30 / ISO 27701:2025 Cl.7                | CRITICAL |
| <input type="checkbox"/> | 4  | Conduct Data Protection Impact Assessments for all processing activities that present a high risk to individuals<br>GDPR Art.35 / ISO 27701:2025 Cl.7                      | CRITICAL |
| <input type="checkbox"/> | 5  | Establish, document, and review the lawful basis for every PII processing activity across the organisation<br>GDPR Art.6 / ISO 27701:2025 Cl.7.2                           | CRITICAL |
| <input type="checkbox"/> | 6  | Implement data subject rights procedures enabling access, erasure, rectification, and portability requests within legal timeframes<br>GDPR Art.15-22 / ISO 27701:2025 Cl.7 | CRITICAL |
| <input type="checkbox"/> | 7  | Document all international PII transfers with appropriate safeguards and maintain transfer impact assessments<br>ISO 27701:2025 Cl.7 / GDPR Chapter V                      | CRITICAL |
| <input type="checkbox"/> | 8  | Classify all processing activities as PII Controller or PII Processor and apply the corresponding ISO 27701 obligations<br>ISO 27701:2025 Cl.7 and Cl.8                    | CRITICAL |
| <input type="checkbox"/> | 9  | Align the privacy programme to all applicable GCC regulations including UAE PDPL, Bahrain PDPL, and NCA requirements<br>UAE PDPL / Bahrain PDPL 2022 / KSA NCA ECC         | CRITICAL |
| HIGH CONTROLS            |    |                                                                                                                                                                            |          |
| <input type="checkbox"/> | 10 | Implement a consent management platform that captures, stores, and provides a complete audit trail for all consents<br>GDPR Art.7 / ISO 27701:2025 Cl.7.2                  | HIGH     |
| <input type="checkbox"/> | 11 | Maintain accurate and current privacy notices across all touchpoints where PII is collected from individuals<br>GDPR Art.13-14 / ISO 27701:2025                            | HIGH     |

Data Privacy and ISO 27701:2025

| CHK                      | #  | CONTROL · FRAMEWORK REFERENCE                                                                                                                                   | SEVERITY |
|--------------------------|----|-----------------------------------------------------------------------------------------------------------------------------------------------------------------|----------|
| <input type="checkbox"/> | 12 | Implement privacy by design and privacy by default principles in all new systems, products, and services<br>GDPR Art.25 / ISO 27701:2025 Cl.7.4                 | HIGH     |
| <input type="checkbox"/> | 13 | Conduct privacy risk assessments integrated with the information security risk process and documented in the risk register<br>ISO 27701:2025 Cl.8 / GDPR Art.32 | HIGH     |
| <input type="checkbox"/> | 14 | Enforce data minimisation and purpose limitation principles across all systems that process personal information<br>GDPR Art.5 / ISO 27701:2025 Cl.7.2          | HIGH     |
| MEDIUM CONTROLS          |    |                                                                                                                                                                 |          |
| <input type="checkbox"/> | 15 | Perform an annual PIMS management review covering performance, risks, and opportunities for continual improvement<br>ISO 27701:2025 Cl.9-10                     | MEDIUM   |

## DOMAIN 11 OF 16

6 Critical

6 High

3 Medium

## Cryptography and Key Management

| CHK                      | #  | CONTROL · FRAMEWORK REFERENCE                                                                                                                                | SEVERITY |
|--------------------------|----|--------------------------------------------------------------------------------------------------------------------------------------------------------------|----------|
| CRITICAL CONTROLS        |    |                                                                                                                                                              |          |
| <input type="checkbox"/> | 1  | Define and enforce a cryptographic standards policy specifying approved algorithms, key lengths, and usage contexts<br>ISO 27001 A.8.24 / NIST SP 800-57     | CRITICAL |
| <input type="checkbox"/> | 2  | Implement certificate lifecycle management with automated alerting and a fully documented enterprise PKI<br>NIST SP 800-57 / ISO 27001 A.8.24                | CRITICAL |
| <input type="checkbox"/> | 3  | Establish formal key rotation schedules, key escrow procedures, and documented key ceremony processes<br>NIST SP 800-57 / ISO 27001 A.8.24                   | CRITICAL |
| <input type="checkbox"/> | 4  | Monitor certificate expiry continuously and automate renewal alerts at 90, 30, and 7 day thresholds<br>ISO 27001 A.8.24 / CIS Control 16                     | CRITICAL |
| <input type="checkbox"/> | 5  | Enforce TLS 1.3 as the minimum acceptable protocol version and formally deprecate all legacy SSL and TLS versions<br>NIST SP 800-52 / PCI DSS v4             | CRITICAL |
| <input type="checkbox"/> | 6  | Implement encrypted channels for all privileged and administrative access to systems and network infrastructure<br>ISO 27001 A.8.24 / CIS Control 12         | CRITICAL |
| HIGH CONTROLS            |    |                                                                                                                                                              |          |
| <input type="checkbox"/> | 7  | Deploy Hardware Security Modules for the storage and management of all critical cryptographic keys<br>NIST FIPS 140-3 / ISO 27001 A.8.24                     | HIGH     |
| <input type="checkbox"/> | 8  | Conduct a post-quantum cryptography readiness assessment and develop a migration roadmap aligned to NIST standards<br>NIST FIPS 203/204/205 / NSA CNSA 2.0   | HIGH     |
| <input type="checkbox"/> | 9  | Implement code signing and digital signature management for all software releases and critical communications<br>CIS Control 16 / NIST SP 800-218            | HIGH     |
| <input type="checkbox"/> | 10 | Deploy tokenisation and data masking for all sensitive PII and payment card data across applications and databases<br>PCI DSS v4 / ISO 27001 A.8.11          | HIGH     |
| <input type="checkbox"/> | 11 | Implement formal key destruction and disposal procedures to ensure cryptographic material cannot be recovered after use<br>NIST SP 800-57 / ISO 27001 A.8.10 | HIGH     |

| CHK                      | #  | CONTROL · FRAMEWORK REFERENCE                                                                                                                             | SEVERITY |
|--------------------------|----|-----------------------------------------------------------------------------------------------------------------------------------------------------------|----------|
| <input type="checkbox"/> | 12 | Audit all cryptographic implementations across applications and infrastructure on an annual basis<br>CIS Control 16 / ISO 27001 A.8.24                    | HIGH     |
| MEDIUM CONTROLS          |    |                                                                                                                                                           |          |
| <input type="checkbox"/> | 13 | Review cryptographic requirements and key management obligations in all third-party vendor contracts annually<br>ISO 27001 A.5.20 / DORA Art.28           | MEDIUM   |
| <input type="checkbox"/> | 14 | Align cryptographic implementations with NSA CNSA 2.0 quantum-resistant algorithm suite requirements by 2030<br>NSA CNSA 2.0 / NIST PQC 2024              | MEDIUM   |
| <input type="checkbox"/> | 15 | Test the quantum resilience of current encryption implementations and begin planning migration to PQC algorithms<br>NIST PQC Standard 2024 / NSA CNSA 2.0 | MEDIUM   |

## DOMAIN 12 OF 16

6 Critical

6 High

3 Medium

# Physical and Environmental Security

| CHK                      | #  | CONTROL · FRAMEWORK REFERENCE                                                                                                                                | SEVERITY |
|--------------------------|----|--------------------------------------------------------------------------------------------------------------------------------------------------------------|----------|
| CRITICAL CONTROLS        |    |                                                                                                                                                              |          |
| <input type="checkbox"/> | 1  | Implement multi-factor physical access controls for all data centres, server rooms, and sensitive office areas<br>ISO 27001 A.7.1 / NIS2 Art.21              | CRITICAL |
| <input type="checkbox"/> | 2  | Deploy CCTV surveillance covering all entry and exit points with tamper alerts and at least 90 days of retention<br>ISO 27001 A.7.4 / NIS2 Art.21            | CRITICAL |
| <input type="checkbox"/> | 3  | Implement secure physical media destruction processes aligned to NIST 800-88 for all decommissioned storage devices<br>ISO 27001 A.7.10 / NIST SP 800-88     | CRITICAL |
| <input type="checkbox"/> | 4  | Deploy environmental controls covering fire suppression, temperature monitoring, flood detection, and power protection<br>ISO 27001 A.7.5 / ISO 27001 A.7.11 | CRITICAL |
| <input type="checkbox"/> | 5  | Deploy N+1 UPS and generator backup power for all data centres and critical infrastructure locations<br>ISO 27001 A.7.11 / DORA Art.11                       | CRITICAL |
| <input type="checkbox"/> | 6  | Define and consistently enforce secure disposal procedures for all IT equipment and removable storage media<br>ISO 27001 A.7.14 / NIST SP 800-88             | CRITICAL |
| HIGH CONTROLS            |    |                                                                                                                                                              |          |
| <input type="checkbox"/> | 7  | Enforce clean desk and clear screen policies with regular unannounced spot checks across all office locations<br>ISO 27001 A.7.7 / CIS Control 4             | HIGH     |
| <input type="checkbox"/> | 8  | Establish a formal visitor management process including pre-registration, identity verification, and escort requirements<br>ISO 27001 A.7.2 / NIS2 Art.21    | HIGH     |
| <input type="checkbox"/> | 9  | Conduct annual physical penetration testing of all critical facilities to identify physical security vulnerabilities<br>ISO 27001 A.7 / NIS2 Art.21          | HIGH     |
| <input type="checkbox"/> | 10 | Review and audit all physical badge access rights at least quarterly and revoke access immediately upon role change<br>ISO 27001 A.7.2 / CIS Control 6       | HIGH     |
| <input type="checkbox"/> | 11 | Implement mantrap or secure entry zones with anti-tailgating controls for all data centres and high security areas<br>ISO 27001 A.7.1 / NIS2 Art.21          | HIGH     |

# Physical and Environmental Security

| CHK                      | #  | CONTROL · FRAMEWORK REFERENCE                                                                                                                           | SEVERITY |
|--------------------------|----|---------------------------------------------------------------------------------------------------------------------------------------------------------|----------|
| <input type="checkbox"/> | 12 | Conduct an annual review of all physical and environmental security controls with findings reported to leadership<br>ISO 27001 A.7 / NIS2 Art.21        | HIGH     |
| MEDIUM CONTROLS          |    |                                                                                                                                                         |          |
| <input type="checkbox"/> | 13 | Establish secure print release and document handling procedures to prevent sensitive information being left unattended<br>ISO 27001 A.7.7 / GDPR Art.32 | MEDIUM   |
| <input type="checkbox"/> | 14 | Implement equipment asset tagging, physical inventory tracking, and regular reconciliation across all sites<br>CIS Control 1 / ISO 27001 A.7.9          | MEDIUM   |
| <input type="checkbox"/> | 15 | Establish cabling security standards, labelling conventions, and cable management procedures across all facilities<br>ISO 27001 A.7.12 / NIST SP 800-53 | MEDIUM   |

DOMAIN 13 OF 16

7 Critical

6 High

2 Medium

AI Security and Governance

| CHK                      | #  | CONTROL · FRAMEWORK REFERENCE                                                                                                                                            | SEVERITY |
|--------------------------|----|--------------------------------------------------------------------------------------------------------------------------------------------------------------------------|----------|
| CRITICAL CONTROLS        |    |                                                                                                                                                                          |          |
| <input type="checkbox"/> | 1  | Establish an AI governance policy, assign AI risk ownership, and integrate AI risk into the enterprise risk framework<br>EU AI Act / NIST AI RMF 1.0 / ISO 42001         | CRITICAL |
| <input type="checkbox"/> | 2  | Create and maintain a complete inventory of all AI, Generative AI, and machine learning tools in use including Shadow AI<br>NIS2 Art.21 / NIST AI RMF / EU AI Act Art.49 | CRITICAL |
| <input type="checkbox"/> | 3  | Assess and classify every AI system by risk level according to the EU AI Act taxonomy before deployment<br>EU AI Act Art.9 / Annex III                                   | CRITICAL |
| <input type="checkbox"/> | 4  | Implement Generative AI data leakage controls preventing staff from entering PII or confidential data into AI prompts<br>ISO 27701 / GDPR Art.32 / EU AI Act             | CRITICAL |
| <input type="checkbox"/> | 5  | Deploy a distinct managed identity for every AI agent with scoped permissions and no shared credential reuse<br>NIST SP 800-207A / Zero Trust                            | CRITICAL |
| <input type="checkbox"/> | 6  | Register all high-risk AI systems in the EU AI Act compliance database and maintain documentation for audit<br>EU AI Act Art.49 / Art.51                                 | CRITICAL |
| <input type="checkbox"/> | 7  | Enforce least privilege access scoping for all AI agent and automation service accounts across all environments<br>NIST SP 800-207A / CIS Control 5                      | CRITICAL |
| HIGH CONTROLS            |    |                                                                                                                                                                          |          |
| <input type="checkbox"/> | 8  | Implement the NIST AI Risk Management Framework across all four functions of Govern, Map, Measure, and Manage<br>NIST AI RMF 1.0 / ISO 42001:2023                        | HIGH     |
| <input type="checkbox"/> | 9  | Establish an AI vendor risk assessment process covering all external model providers and AI platform vendors<br>NIST AI RMF / EU AI Act / DORA Art.28                    | HIGH     |
| <input type="checkbox"/> | 10 | Implement prompt injection detection and prevention controls for all Generative AI deployments and integrations<br>MITRE ATLAS 2025 / OWASP LLM Top 10                   | HIGH     |
| <input type="checkbox"/> | 11 | Conduct AI model security assessments using the MITRE ATLAS framework for all internally deployed AI systems<br>MITRE ATLAS v2 2025 / NIST AI RMF                        | HIGH     |

AI Security and Governance

| CHK                      | #  | CONTROL · FRAMEWORK REFERENCE                                                                                                                               | SEVERITY |
|--------------------------|----|-------------------------------------------------------------------------------------------------------------------------------------------------------------|----------|
| <input type="checkbox"/> | 12 | Establish an AI specific incident response playbook covering model compromise, data poisoning, and output manipulation<br>NIST AI RMF RS / ISO 27001 A.5.26 | HIGH     |
| <input type="checkbox"/> | 13 | Monitor AI deployments for model extraction attempts, adversarial attacks, and training data poisoning indicators<br>MITRE ATLAS / NIST AI RMF ME           | HIGH     |
| MEDIUM CONTROLS          |    |                                                                                                                                                             |          |
| <input type="checkbox"/> | 14 | Implement AI output validation, hallucination logging, and audit trails for all high-risk AI assisted decisions<br>NIST AI RMF MG / EU AI Act Art.13        | MEDIUM   |
| <input type="checkbox"/> | 15 | Establish an AI ethics and bias review process for all AI systems that influence decisions affecting individuals<br>EU AI Act Art.10 / NIST AI RMF GV       | MEDIUM   |

DOMAIN 14 OF 16

ISO 42001 AI Management System

6 Critical

8 High

4 Medium

| CHK                      | #  | CONTROL · FRAMEWORK REFERENCE                                                                                                                   | SEVERITY |
|--------------------------|----|-------------------------------------------------------------------------------------------------------------------------------------------------|----------|
| CRITICAL CONTROLS        |    |                                                                                                                                                 |          |
| <input type="checkbox"/> | 1  | Establish an AI Management System scope statement covering all AI systems, stakeholders, and organisational boundaries<br>ISO 42001:2023 CI.4.3 | CRITICAL |
| <input type="checkbox"/> | 2  | Define the organisational context for AI including internal and external issues that affect AI objectives<br>ISO 42001:2023 CI.4.1              | CRITICAL |
| <input type="checkbox"/> | 3  | Identify all interested parties for AI systems and document their requirements and expectations formally<br>ISO 42001:2023 CI.4.2               | CRITICAL |
| <input type="checkbox"/> | 4  | Establish top management commitment to AI management including a formal AI policy signed by senior leadership<br>ISO 42001:2023 CI.5.1 / CI.5.2 | CRITICAL |
| <input type="checkbox"/> | 5  | Assign AI management roles, responsibilities, and authorities to named individuals across the organisation<br>ISO 42001:2023 CI.5.3             | CRITICAL |
| <input type="checkbox"/> | 6  | Conduct AI risk assessments using a documented methodology to identify and treat risks from all AI systems<br>ISO 42001:2023 CI.6.1             | CRITICAL |
| HIGH CONTROLS            |    |                                                                                                                                                 |          |
| <input type="checkbox"/> | 7  | Define AI objectives that are measurable, monitored, communicated, and updated when conditions change<br>ISO 42001:2023 CI.6.2                  | HIGH     |
| <input type="checkbox"/> | 8  | Ensure staff responsible for AI systems have documented competency requirements and evidence of meeting them<br>ISO 42001:2023 CI.7.2           | HIGH     |
| <input type="checkbox"/> | 9  | Make staff aware of the AI policy, their contribution to AI management objectives, and implications of non-conformity<br>ISO 42001:2023 CI.7.3  | HIGH     |
| <input type="checkbox"/> | 10 | Establish documented information controls for all AI management system documents and records<br>ISO 42001:2023 CI.7.5                           | HIGH     |
| <input type="checkbox"/> | 11 | Implement operational planning and controls for all AI system development, deployment, and monitoring activities<br>ISO 42001:2023 CI.8.1       | HIGH     |

ISO 42001 AI Management System

| CHK                      | #  | CONTROL · FRAMEWORK REFERENCE                                                                                                                           | SEVERITY |
|--------------------------|----|---------------------------------------------------------------------------------------------------------------------------------------------------------|----------|
| <input type="checkbox"/> | 12 | Conduct AI impact assessments before deploying AI systems that could significantly affect individuals or society<br>ISO 42001:2023 Cl.8.4 / Annex B     | HIGH     |
| <input type="checkbox"/> | 13 | Monitor, measure, analyse, and evaluate AI system performance against defined criteria and objectives<br>ISO 42001:2023 Cl.9.1                          | HIGH     |
| <input type="checkbox"/> | 14 | Conduct internal audits of the AI management system at planned intervals to verify conformity and effectiveness<br>ISO 42001:2023 Cl.9.2                | HIGH     |
| MEDIUM CONTROLS          |    |                                                                                                                                                         |          |
| <input type="checkbox"/> | 15 | Conduct management reviews of the AI management system at least annually to ensure its continuing suitability<br>ISO 42001:2023 Cl.9.3                  | MEDIUM   |
| <input type="checkbox"/> | 16 | Address nonconformities in AI systems promptly and implement corrective actions to prevent recurrence<br>ISO 42001:2023 Cl.10.1                         | MEDIUM   |
| <input type="checkbox"/> | 17 | Implement continual improvement processes to enhance the suitability, adequacy, and effectiveness of the AI management system<br>ISO 42001:2023 Cl.10.2 | MEDIUM   |
| <input type="checkbox"/> | 18 | Document responsible AI principles covering fairness, transparency, accountability, and human oversight<br>ISO 42001:2023 Annex A / EU AI Act           | MEDIUM   |

## DOMAIN 15 OF 16

5 Critical

7 High

3 Medium

## Security Metrics and Board Reporting

| CHK                      | #  | CONTROL · FRAMEWORK REFERENCE                                                                                                                                          | SEVERITY |
|--------------------------|----|------------------------------------------------------------------------------------------------------------------------------------------------------------------------|----------|
| CRITICAL CONTROLS        |    |                                                                                                                                                                        |          |
| <input type="checkbox"/> | 1  | Define a security KPI framework that directly connects security programme health to business risk and strategic objectives<br>NIST CSF GV.OC / ISO 27001 CI.9.1        | CRITICAL |
| <input type="checkbox"/> | 2  | Implement a board level security reporting cadence of at least quarterly with a consistent and board appropriate format<br>NIS2 Art.20 / DORA Art.5 / ISO 27001 CI.5.1 | CRITICAL |
| <input type="checkbox"/> | 3  | Track and trend Mean Time to Detect, Mean Time to Respond, patch compliance percentage, and phishing click rate monthly<br>CIS Control 17 / NIST CSF DE.AE             | CRITICAL |
| <input type="checkbox"/> | 4  | Report on regulatory compliance status covering all in-scope regulations to leadership at least monthly<br>NIS2 Art.20 / DORA Art.5 / GDPR                             | CRITICAL |
| <input type="checkbox"/> | 5  | Review and formally update the security strategy with board participation at least once per year<br>ISO 27001 CI.9.3 / NIS2 Art.20                                     | CRITICAL |
| HIGH CONTROLS            |    |                                                                                                                                                                        |          |
| <input type="checkbox"/> | 6  | Develop a cyber risk quantification model using the FAIR methodology to express security risk in financial terms<br>NIST CSF ID.RA / FAIR Standard                     | HIGH     |
| <input type="checkbox"/> | 7  | Implement a security programme maturity assessment using CMMI or NIST CSF tiers and repeat annually<br>NIST CSF / CMMI / ISO 27001 CI.9.1                              | HIGH     |
| <input type="checkbox"/> | 8  | Establish a cybersecurity budget justification framework that connects security investment to risk reduction outcomes<br>NIST CSF GV.RM / ISO 27001 CI.9.3             | HIGH     |
| <input type="checkbox"/> | 9  | Develop standardised executive security briefing templates and a live dashboard covering the most important metrics<br>NIST CSF GV.OC / ISO 27001 CI.9.3               | HIGH     |
| <input type="checkbox"/> | 10 | Implement a real-time security operations dashboard with the key metrics visible to SOC and management at all times<br>NIST CSF DE.AE / CIS Control 17                 | HIGH     |
| <input type="checkbox"/> | 11 | Track third-party risk scores and vendor compliance percentages as a standing item in board security reporting<br>DORA Art.28 / ISO 27001 A.5.19                       | HIGH     |

Security Metrics and Board Reporting

| CHK                      | #  | CONTROL · FRAMEWORK REFERENCE                                                                                                                            | SEVERITY |
|--------------------------|----|----------------------------------------------------------------------------------------------------------------------------------------------------------|----------|
| <input type="checkbox"/> | 12 | Establish a process for tracking the financial impact of security incidents and present this data annually to the board<br>NIST CSF RS.MI / FAIR         | HIGH     |
| MEDIUM CONTROLS          |    |                                                                                                                                                          |          |
| <input type="checkbox"/> | 13 | Measure and report the return on security investment to the board at least annually using quantified risk data<br>NIST CSF GV.RM / FAIR                  | MEDIUM   |
| <input type="checkbox"/> | 14 | Benchmark the organisational security posture against industry peers using publicly available framework maturity data<br>CIS Benchmarks / NIST CSF Tiers | MEDIUM   |
| <input type="checkbox"/> | 15 | Report security awareness training completion rates and phishing simulation trend data to leadership quarterly<br>ISO 27001 CI.9.1 / CIS Control 14      | MEDIUM   |

## DOMAIN 16 OF 16

9 Critical

5 High

1 Medium

## NIS2, DORA and Regulatory Compliance

| CHK                      | #  | CONTROL · FRAMEWORK REFERENCE                                                                                                                                  | SEVERITY |
|--------------------------|----|----------------------------------------------------------------------------------------------------------------------------------------------------------------|----------|
| CRITICAL CONTROLS        |    |                                                                                                                                                                |          |
| <input type="checkbox"/> | 1  | Map all entities, subsidiaries, and services to determine which are in scope of NIS2 as essential or important entities<br>NIS2 Art.2-3 / Annex I-II           | CRITICAL |
| <input type="checkbox"/> | 2  | Implement the NIS2 all-hazards approach to risk management covering physical, cyber, and supply chain threats<br>NIS2 Art.21 / Recital 79                      | CRITICAL |
| <input type="checkbox"/> | 3  | Establish NIS2 incident reporting workflows enabling a 24 hour early warning and a 72 hour full incident report<br>NIS2 Art.23 / ENISA Guidelines              | CRITICAL |
| <input type="checkbox"/> | 4  | Complete mandatory board and management level cybersecurity training to satisfy the NIS2 director liability requirement<br>NIS2 Art.20 / Director liability    | CRITICAL |
| <input type="checkbox"/> | 5  | Implement the DORA ICT risk management framework with all required policies, procedures, and governance structures<br>DORA Art.6 / RTS on ICT Risk             | CRITICAL |
| <input type="checkbox"/> | 6  | Establish a DORA operational resilience testing programme with annual testing and documented remediation tracking<br>DORA Art.25 / RTS on TLPT                 | CRITICAL |
| <input type="checkbox"/> | 7  | Register and manage all Critical ICT Third-Party Providers as required by DORA with documented oversight plans<br>DORA Art.28-30 / EBA Register                | CRITICAL |
| <input type="checkbox"/> | 8  | Establish DORA ICT incident classification, reporting workflows, and root cause analysis processes for major incidents<br>DORA Art.17-19 / ITS on Incidents    | CRITICAL |
| <input type="checkbox"/> | 9  | Continuously monitor and track regulatory changes across all applicable GCC jurisdictions and update controls accordingly<br>UAE PDPL / Bahrain PDPL / NCA ECC | CRITICAL |
| HIGH CONTROLS            |    |                                                                                                                                                                |          |
| <input type="checkbox"/> | 10 | Implement DORA Threat-Led Penetration Testing at least once every three years using TIBER-EU methodology<br>DORA Art.26 / TIBER-EU                             | HIGH     |
| <input type="checkbox"/> | 11 | Achieve and maintain PCI DSS 4.0.1 compliance for all systems involved in the processing of payment card data<br>PCI DSS v4.0.1 / PCI SSC                      | HIGH     |

NIS2, DORA and Regulatory Compliance

| CHK                      | #  | CONTROL · FRAMEWORK REFERENCE                                                                                                                         | SEVERITY |
|--------------------------|----|-------------------------------------------------------------------------------------------------------------------------------------------------------|----------|
| <input type="checkbox"/> | 12 | Achieve or maintain SOC 2 Type II attestation to demonstrate trust service criteria compliance to customers<br>AICPA SOC 2 / AICPA TSC                | HIGH     |
| <input type="checkbox"/> | 13 | Establish an NCA Essential Cybersecurity Controls compliance programme for operations within Saudi Arabia<br>NCA ECC 2:2020 / Saudi Arabia            | HIGH     |
| <input type="checkbox"/> | 14 | Align the security programme with CBB cybersecurity requirements for financial sector entities operating in Bahrain<br>CBB Rulebook Vol.6 / Module CY | HIGH     |
| MEDIUM CONTROLS          |    |                                                                                                                                                       |          |
| <input type="checkbox"/> | 15 | Implement CMMC v2 Level requirements if operating within or supplying to the US Department of Defense supply chain<br>CMMC v2 / DFARS 252.204-7012    | MEDIUM   |



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## Need help implementing these controls?

Code Defence offers vCISO, vDPO, ISO 27001, ISO 42001, and VMaaS services for organisations across the GCC. Book a free consultation at [codedefence.in](https://codedefence.in).

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