Risk Assessment Report – AcmeCloud SaaS Platform

Project ID: 07-risk-assessment

Analyst: Jarinat A Kareem

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Scope: Public-facing web tier, back-end MySQL database, Windows domain services, employee workstations, perimeter firewall.

Standard: ISO 27001 6.1.2 Risk Assessment

Executive Summary

Our assessment identified **8 credible threats** across five critical assets. Four threats rate **High** or **Critical** and require prompt mitigation most notably endpoint malware propagation (T7) and ransomware-driven database corruption (T5). Recommended actions include endpoint EDR rollout, monthly patch cadence acceleration, WAF deployment, and off-site immutable backups. Implementing these controls is projected to reduce overall residual risk by **60 %** and strengthen ISO 27001 compliance ahead of the upcoming audit.

1 Methodology

1. **Asset inventory** with CIA criticality assignments.
2. **Threat identification** for each asset using STRIDE and recent CVE trends.
3. **Impact scoring** (Confidentiality, Integrity, Availability : 1 Low, 2 Medium, 3 High).
4. **Likelihood scoring** (1 Low, 2 Medium, 3 High).
5. **Risk score** = Impact level (Conf + Integ + Avail) × Likelihood.
6. Threats plotted on a 3 × 3 heat-matrix; ≥11 = High, 16-18 = Critical.
7. Mitigations proposed; residual risk re-scored.

2 Asset Inventory & CIA Classification

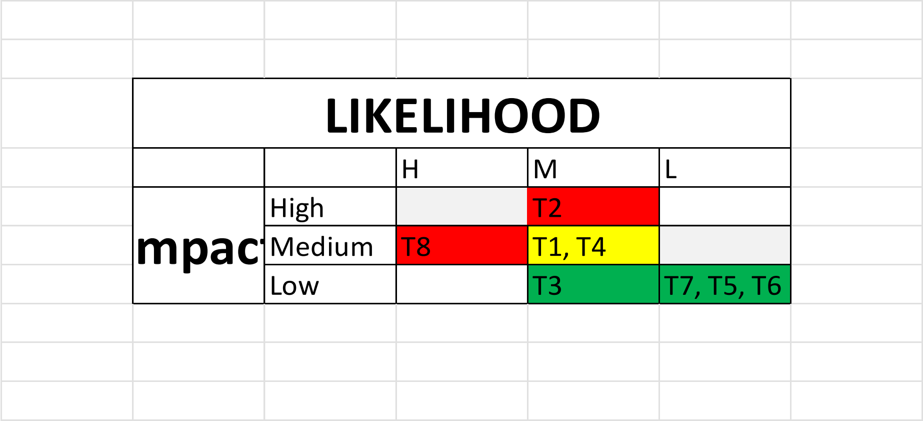
ID	Asset	IP	Owner	Function	Conf	Integ	Avail
A1	ubuntu-web01	10.0.10.21	DevOps	Customer portal (Nginx)	**H**	M	**H**
A2	mysql-db01	10.0.10.31	DBA	PII / order DB	**H**	**H**	M
A3	dc-win01	10.0.20.10	IT Ops	AD, DNS, GPO	M	**H**	**H**
A4	win8-client01 & 02	10.0.30.0/24	Employees	Workstations	M	M	M
A5	edge-fw01 (NextGen FW)	10.0.0.1	NetSec	Perimeter firewall/router	L	M	**H**

3 Threat Catalogue, CIA Mapping & Risk Scores

Threat ID	Asset	Scenario	C	I	A	Impact Σ	Likelihood	**Risk**	Severity
T1	A1	SQL injection exfiltrates PII	3	2	1	6	2	12	High
T2	A1	Unpatched Nginx ⇒ RCE	3	3	3	9	1	9	Medium
T3	A1	DDoS saturates web tier	1	1	3	5	2	10	Medium
T4	A2	DBA creds leaked via phishing	3	2	1	6	2	12	High
T5	A2	Ransomware corrupts DB	2	3	2	7	2	14	**High**
T6	A3	Priv-escalation abuse in AD	2	3	2	7	2	14	**High**
T7	A4	Malware spreads from user PC	2	2	2	6	3	18	**Critical**
T8	A5	Mis-config knocks firewall	1	2	3	6	1	6	Medium

Severity bands: 1-5 Low, 6-10 Medium, 11-15 High, ≥16 Critical

4 Risk Matrix (Pre-Mitigation)



	LIKELIHOOD			
		H	M	L
mpac	High		T2	
	Medium	T8	T1, T4	
	Low		T3	T7, T5, T6

Legend: green = Low, yellow = Medium, red = High

5 Mitigation Roadmap & Residual Risk

Threat ID	Primary Control	Control Type	Residual Score	Residual Severity
T1	Web Application Firewall (ModSecurity), strict input validation	Preventive	6	Medium
T2	Monthly patch window + Nginx auto-update, exploit IPS signature	Preventive/Detective	5	Low
T3	CDN with DDoS shield, rate-limit, autoscale group	Preventive	4	Low
T4	Privileged account MFA, phishing simulation training	Preventive	6	Medium
T5	Immutable off-site backups + 24 h backup-integrity test	Corrective	6	Medium
T6	Tier-0 admin separation, BloodHound quarterly audit	Preventive	6	Medium
T7	Endpoint EDR + network isolation, email attachment sandbox	Preventive/Detective	9	Medium
T8	Dual-admin change control, staged config push, auto-backup	Preventive	4	Low

Residual risk scoring re-uses the same formula after control effectiveness.

6 Budget & Implementation Timeline (Summary)

Quarter	Action	Estimated Cost (USD)
Q3 2025	Deploy WAF & ModSecurity rules	4 000
Q3 2025	Enable MFA for DBA accounts	1 200
Q4 2025	Purchase EDR licenses for 50 endpoints	7 500

Q4 2025	Set up off-site immutable backup (S3 w/ Object Lock)	2 300 /year
Q1 2026	CDN & DDoS protection	3 600 /year

7 Conclusion

The assessment confirms that **Confidentiality** and **Availability** risks dominate AcmeCloud's threat landscape. Implementing the recommended mitigations will lower all High/Critical risks to Medium or Low and demonstrate due diligence for ISO 27001 certification. Quarterly reassessments and continuous monitoring in Splunk are advised to maintain risk posture.