

ExamHub Architecture

React + FastAPI → Docker → ACR → AKS → HTTPS + Key Vault

🛡️ Security Hardened ✅ No secrets in code ✅ Azure Key Vault CSI Driver ✅ Managed Identity (no passwords) ✅ .env excluded from git ✅ bcrypt password hashing

✅ JWT auth (30-day expiry) ✅ Let's Encrypt TLS

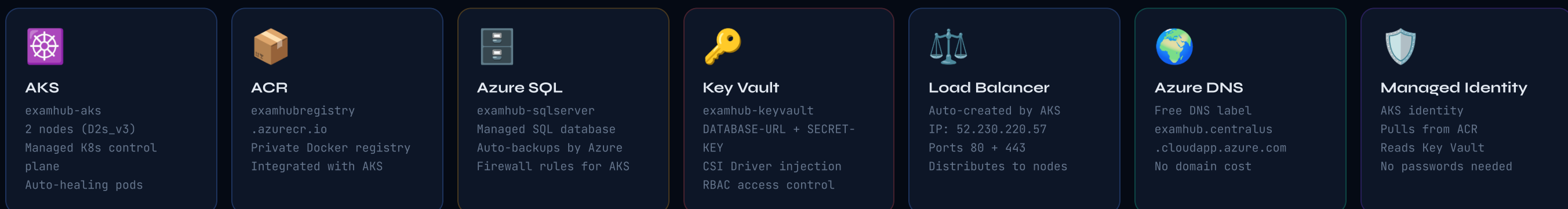
01 — REQUEST FLOW



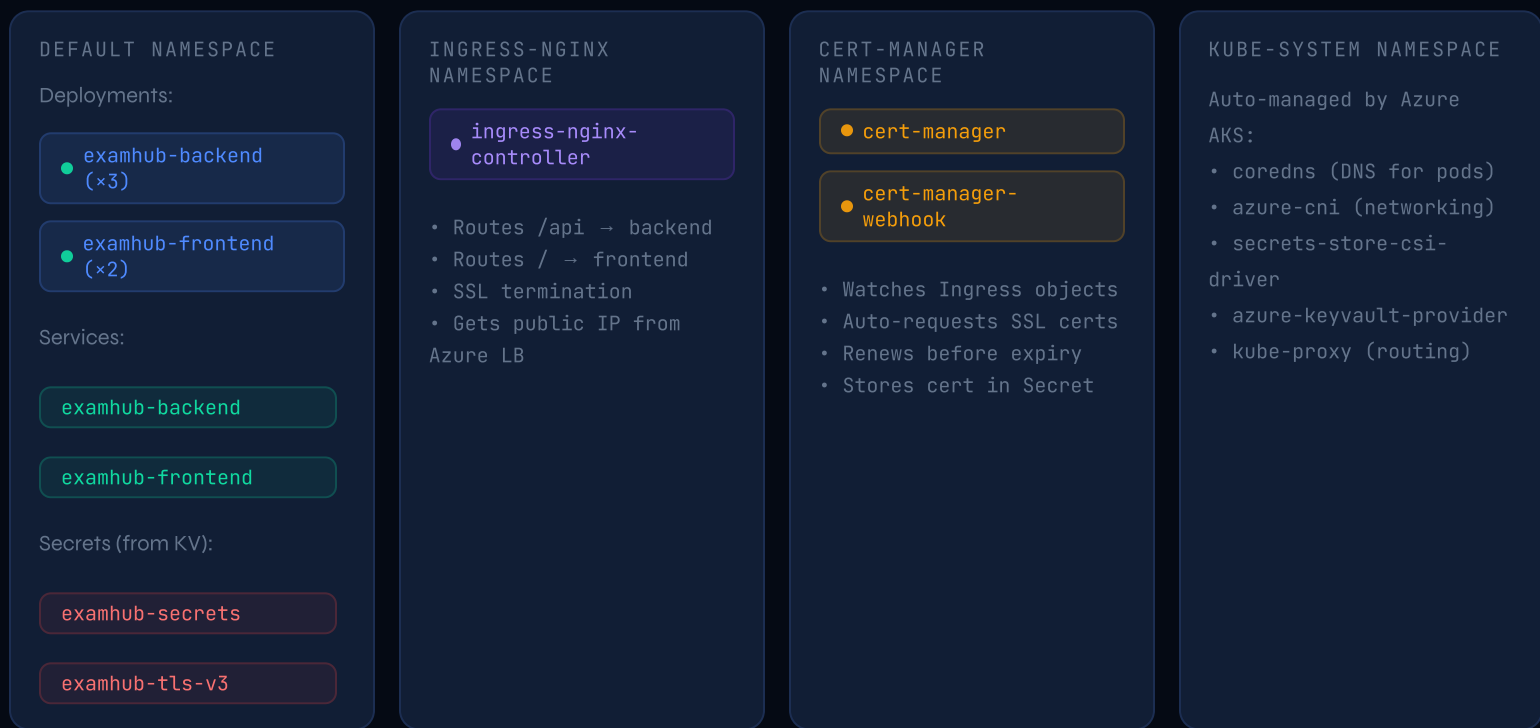
02 — FULL SYSTEM ARCHITECTURE



03 — AZURE SERVICES USED



04 — KUBERNETES NAMESPACES



05 — TECHNOLOGY STACK



06 — API ROUTES

METHOD	ENDPOINT	DESCRIPTION	AUTH
POST	/api/auth/login	Login → returns JWT token	❌ None
POST	/api/auth/register	Create student account	❌ None
GET	/api/auth/users	List all users (admin)	✅ JWT
DELETE	/api/auth/users/{id}	Delete user	✅ JWT
GET	/api/exams/	List all exams	✅ JWT
POST	/api/exams/	Create new exam	✅ JWT
PUT	/api/exams/{id}	Update exam	✅ JWT
DELETE	/api/exams/{id}	Delete exam	✅ JWT
GET	/api/exams/stats/overview	Dashboard stats	✅ JWT
GET	/api/questions/{exam_id}	Get questions for exam	✅ JWT
POST	/api/questions/	Add question to exam	✅ JWT
DELETE	/api/questions/{id}	Delete question	✅ JWT
POST	/api/attempts/submit	Submit exam answers → returns score	✅ JWT
GET	/api/attempts/history/{user_id}	Student's past attempts	✅ JWT
GET	/api/attempts/all	All attempts (admin view)	✅ JWT

07 — ENDPOINTS & RESOURCES

