

Category	Service	Purpose	Key Features	Why It's Needed					
Networking & Entry	Cloud CDN + HTTPS Load Balancer	Handle client requests at the edge	Global anycast IP, SSL termination, caching, WAF integration	Reduce latency & secure API endpoints					
Networking & Entry	Cloud Armor	Web app firewall & DDoS protection	Rules-based filtering, IP allow/deny, bot protection	Protect intake API from malicious traffic					
Networking & Entry	API Gateway / Cloud Endpoints	Central API management	OpenAPI support, auth, quotas, telemetry	Unified entry point for client API calls					
Networking & Entry	VPC + VPC-SC	Secure internal networking	Private IP ranges, subnet isolation, service perimeters	Ensure insurer data & PII remain GDPR-compliant					
Compute	Cloud Run	Serverless container hosting	Auto-scaling, HTTPS, 'min_instances' to avoid cold starts	Primary platform for APIs, provider adapters, normalizers					
Compute	GKE (Autopilot)	Managed Kubernetes, ideal for n8n	Auto-provisioned nodes, private clusters, HPA	Best choice for hosting self-managed n8n safely					
Compute	Compute Engine	Bare-metal VMs	Custom OS, persistent disks, firewall rules	Use only if a provider mandates VPN or persistent compute					
Messaging & Events	Pub/Sub	Async messaging backbone	At-least-once delivery, DLQs, push/pull, ordered keys	Fan-out events like lead.created, provider.requested, etc.					
Messaging & Events	Eventarc	Trigger-based event routing	Connects GCS, Pub/Sub, Audit Logs to Cloud Run	Trigger workflows from CSV drops or email attachments					
Messaging & Events	Cloud Tasks	Guaranteed delayed execution	HTTP target retries, exponential backoff policies	Retry failed insurer calls or Novata API integrations					
Data Storage	Cloud SQL (Postgres)	Transactional relational DB	HA, point-in-time recovery, private IP	Stores leads, offers, provider mappings, and audit logs					
Data Storage	Firestore	Document-oriented DB	Strong consistency, real-time Pub/Sub triggers	Store normalized insurer responses for fast read					
Data Storage	GCS (Cloud Storage)	Binary artifact storage	Versioning, signed URLs, EventArc triggers	Keep XML, CSV, and raw email '.eml' payloads separate					
Data Storage	Memorystore (Redis)	Ultra-fast in-memory caching	Sub-ms latency, TLS support	For idempotency, rules caching, and session tokens					
Email & Communication	Mailgun / SendGrid / Mailjet	Outbound email delivery	EU endpoints, templates, tracking	Send personalized offers with buy-now links					
Email & Communication	Inbound Email Routing	Handle incoming insurer emails	Mailgun/Mailjet routes, JSON-normalized payloads	Parse insurer responses and feed them into normalizer					
Security & Identity	IAM	Access management	Granular roles, service accounts, least privilege	Restrict services to strict scopes for GDPR compliance					
Security & Identity	Secret Manager	Manage secrets & credentials	Automatic rotation, KMS integration, audit logs	Store provider API keys, Novata keys, and email creds					
Security & Identity	KMS (Key Management Service)	Encrypt data at rest	CMEK for SQL, GCS, Pub/Sub, symmetric/asymmetric keys	Ensure sensitive client data is encrypted per UK regulations					
Security & Identity	VPC Service Controls	Network-level data protection	Perimeter security, private connectivity	Keeps sensitive data inside UK-compliant boundaries					
Observability	Cloud Logging	Centralized log collection	Structured JSON logs, advanced queries	Debug provider integration failures quickly					
Observability	Cloud Monitoring	Metrics	dashboards	and SLOs	Custom SLOs, e.g. Track API performance and alert if latency >170ms				
Observability	Cloud Trace & Profiler	Distributed tracing & profiling	End-to-end latency tracing, flame graphs	See where bottlenecks occur (DB, provider API, normalizer)					
Observability	Error Reporting	Automatic error aggregation	Slack/Jira integrations, grouped stack traces	Get notified instantly when insurer APIs or n8n workflows fail					
Automation & Workflow	n8n (Self-hosted)	Low-code workflow automation	350+ connectors, custom triggers, webhook support	Use for ops, retries, insurer onboarding – NOT in hot path					
Automation & Workflow	Artifact Registry	Manage container images	Vulnerability scanning, CI/CD integration	Store provider adapter and n8n Docker images					
Automation & Workflow	Cloud Build	Continuous integration/deployment	Build, test, and deploy apps to Cloud Run/GKE	Automate new provider onboarding, adapters, email parsers					
Compliance & DLP	Cloud DLP API	Data Loss Prevention	Mask PII in CSVs/emails, sensitive info detection	Ensure GDPR compliance when processing insurer emails					
Compliance & DLP	Audit Logs	Compliance & traceability	Admin activity logging, API request visibility	Track every data touchpoint for GDPR and insurance audits					