

AI Efficiency Advisor

Solution Architecture & Platform Overview
Security, Data Protection, Availability, Azure Services and Application
Capabilities

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Executive Summary

What is the AI Efficiency Advisor?

The **AI Efficiency Advisor (AIEA)** is Consult's web platform for structured **AI efficiency assessments**. Organizations answer guided questions, optionally provide documents, and receive **professional PDF reports** (Basic, Professional, or Ultimate) after purchase. The product also offers **budget planning**, **assessment history**, and **company document management** in a secure customer area.

Business problem

Leaders need a repeatable, evidence-based view of automation potential, maturity, and next steps—not ad hoc slides. AIEA combines structured questionnaires, conversational guidance, and automated report production to shorten time-to-insight.

How the system works (high level)

Users access AIEA in a browser. **Microsoft Entra External ID** handles secure sign-in. Assessment data is stored on Consult's **Azure-hosted application**. When a report is ordered and paid via **Stripe**, the platform generates a **PDF**, stores it in **Azure storage** (when configured), and notifies the user by **email** through **Microsoft Graph**.

Why architecture matters

Enterprises care about **identity separation**, **data handling**, **payment isolation**, and **operational resilience**. This document describes what is implemented today based on the production codebase—not marketing claims about compliance or geography unless verified in deployment configuration.

Document status: Generated from repository source; version date on cover. **Data location:** App Service metadata references **Switzerland North**; full processor map **to be verified** with operations.

What the AI Efficiency Advisor Provides

Registration and account

Customers create an account through **Microsoft-managed sign-in** (email-based verification flows provided by Entra External ID). A Consult customer record is created when they first use the application. There is **no separate custom password store** in the application layer.

Guided analysis

Users progress through **pre-questions**, a **guided questionnaire** (topics, choices, free text), and optional **Copilot-assisted conversation** in the browser. Progress is saved server-side so users can continue after refresh or re-login.

Documents

Users may upload supporting files (spreadsheets, presentations, PDFs within configured limits). Text is extracted to support analysis and reports. Uploads are available in **My Company Documents** and linked evidence flows.

Payment and reports

Each tier is purchased once per report via **Stripe** (secure hosted checkout). After payment confirmation, users can start analysis and **report generation**. Reports are delivered as **PDF** with email notification.

Budget Builder

After assessment, customers can explore budget scenarios and initiatives tied to assessment outputs (hub entry: Budget Builder).

My Reports and My Assessments

My Reports lists generated PDFs with download access for authenticated users. **My Assessments** provides history and continuity across sessions.

Support and legal

FAQ, support request flows, and legal pages (terms, privacy) are integrated in the advisor experience. Consult **admin** staff use a **separate admin portal** with corporate Microsoft login—not the customer sign-in.

Languages and devices

German and English are supported. The interface adapts to desktop, tablet, and mobile; some desktop-only marketing controls are hidden on touch devices by design.

Identity, Security, and Data Protection

Identity and access

- **Customers** authenticate with **Microsoft Entra External ID** (CIAM). The application validates identity tokens on every protected API call.
- **Consult administrators** use a **separate Microsoft Entra application** and cannot use customer credentials to access admin functions.
- **Report and document downloads** require an authenticated session and server-side authorization; temporary links expire for blob-backed reports.

Security controls

Area	Approach
Authentication	Industry-standard JWT validation with Microsoft signing keys
Payment	Card data handled entirely by Stripe ; application stores payment status, not PAN
Secrets	Integration keys configured in secure server settings (not embedded in the browser)
Admin	Allowlisted corporate identities

Data protection (factual)

The platform may process:

- Account and profile information
- Company details and questionnaire answers
- Uploaded business documents
- Generated assessment reports (PDF)
- Support and email metadata

Storage combines **application persistent disk** (structured JSON data) and **Azure Blob Storage** for reports when enabled. **Encryption at rest** follows Azure platform defaults; **specific compliance certifications** are **not asserted** in this document.

Privacy

Retention for documents and chat may be governed by configured retention days. Account deletion features exist in the product; **complete erasure across all stores** should be confirmed during privacy reviews (**to be verified** per deployment procedures).

Payment boundary

Stripe is the **system of record** for payment transactions. The application reacts to signed webhook events to unlock report generation—customers cannot self-assign paid status through the UI alone.

Availability and Reliability

Application availability

AIEA runs as a **Node.js application on Azure App Service**, deployed via **container images** that include the PDF rendering engine (Chromium). The public endpoint serves both the web client and APIs.

Platform SLA: Microsoft provides an SLA for App Service; **multi-region active-active is not described in the repository.**

Persistent data

Customer assessments and settings persist on the App Service **persistent data volume** (/home). Generated report PDFs are stored in **Azure Blob Storage** when configured, so they remain available independent of a single app instance restart.

Dependencies

Dependency	User-visible effect if unavailable
App Service / container	Full outage
Stripe	Cannot purchase; existing entitlements may still allow in-flight work verify policy
Microsoft Graph mail	Reports may generate but email delayed; text fallback may apply
Chromium / PDF engine	Report PDF generation fails (retries may apply)

Failure handling

Report generation uses **background jobs with retries** and optional **text email fallback** if PDF email attachment fails. Payment webhooks are processed **idempotently** to avoid duplicate unlocks.

Operational monitoring

Centralized Application Performance Monitoring is **not evident in application code**; operations likely rely on **Azure App Service diagnostics and logs. To be verified** whether portal-level Application Insights is enabled outside the repo.

Resilience recommendations (summary)

For enterprise SLAs, consider dedicated monitoring, automated backups of customer data stores, and scaling strategy for PDF workload—see technical recommendations document.

Azure Platform Overview

This section lists **Microsoft Azure and related services evidenced in the AIEA codebase**. Services not listed should not be assumed.

Azure App Service

What it does: Hosts the web application and APIs.

Why AIEA uses it: Single deployable unit for SPA, Node backend, and PDF rendering in container mode.

Business dependency: All customer-facing capabilities.

Azure Container Registry

What it does: Stores versioned Docker images.

Why AIEA uses it: Reproducible deployments with Playwright/Chromium preinstalled.

Business dependency: Release pipeline for production updates.

Azure Blob Storage

What it does: Durable object storage for files.

Why AIEA uses it: Stores generated report PDFs (and optionally company logos).

Business dependency: My Reports downloads and email attachments when blob mode is active.

Microsoft Entra External ID

What it does: Customer identity and sign-in.

Why AIEA uses it: Enterprise-friendly authentication without custom password management.

Business dependency: Registration, login, API security.

Microsoft Entra ID (corporate)

What it does: Workforce identity for Consult staff.

Why AIEA uses it: Admin portal separation from customers.

Business dependency: Internal operations only.

Microsoft Graph

What it does: Sends (and optionally reads) email via Microsoft 365.

Why AIEA uses it: Report delivery and transactional messages.

Business dependency: Timely customer communication.

Azure OpenAI (optional)

What it does: Hosted language models.

Why AIEA uses it: Optional assistance for inbound mail auto-reply—not the primary customer chat or report author.

Business dependency: Support automation only when enabled.

Azure SQL (optional — ACMT)

What it does: Relational database for the ACMT credit ledger when enabled.

Why AIEA uses it: Stronger concurrency and reporting for credits than JSON files alone (Phase 2 production path).

Business dependency: Credit metering and top-ups; **default deployment uses JSON on App Service persistent storage** until SQL is provisioned.

ACMT on the same App Service

What it does: Credit balances, Stripe top-ups, subscription catalog, Copilot agent APIs, admin ACMT dashboards.

Why AIEA uses it: Meter AI-assisted conversation and commercial packs without a separate billing microservice.

Business dependency: Copilot usage when credit gating is enabled; optional welcome-screen balance for customers.

Services not found in code

Azure Key Vault, Application Insights SDK, Cosmos DB, Azure Front Door — **do not assume** without infrastructure review. (Azure SQL is **optional for ACMT only**, see above.)

Data and Document Handling

Customer data categories

1. **Identity data** — from Microsoft Entra (name, email, subject identifiers).
1. **Company profile** — organization details entered in settings.
1. **Assessment responses** — structured answers and chat-related logs where enabled.
1. **Uploaded documents** — files provided as evidence (business content).
1. **Reports** — generated PDF outputs and delivery metadata.

Storage approach

- Structured application data is stored as **managed JSON records** on the application's persistent disk.
- **Report PDFs** are stored in **Azure Blob Storage** when connection settings are present; otherwise a server-local fallback may be used in non-production environments.

- **Uploaded advisor documents** are stored as files on application storage with metadata records (**current implementation uses filesystem, not blob**, per `api/documentStore.js`).

Access

Only authenticated users can access their assessments, uploads, and reports. Download links for reports are **time-limited** when served from blob storage.

Retention and deletion

Document retention may be limited by configured retention days. Users may request account deletion through product flows; **verify** operational procedures for backups and blob lifecycle.

Third-party processors

- **Microsoft** — identity, mail, optional AI, Azure hosting/storage.
- **Stripe** — payment processing.

Legal agreements with customers should reference these processors; **this architecture doc does not replace legal privacy notices**.

External Integrations and Dependencies

Stripe (payments)

Secure checkout for Basic, Professional, and Ultimate reports. The application learns payment success through **signed server webhooks**, then unlocks report generation.

Microsoft Entra family

- **External ID** for customers.
- **Corporate Entra** for Consult admin users.

Microsoft Graph (email)

Outbound transactional email including report delivery. Optional inbound processing for support mailbox automation.

Copilot Studio (Direct Line)

Conversational assistant in the browser. Conversation traffic is handled between the client and Microsoft's Copilot endpoint; the application enforces access and usage metering at the API layer.

Azure Storage

Report PDF persistence and secure retrieval.

Marketing website email (SMTP)

The corporate website booking form may use SMTP separately from AIEA Graph mail—**does not affect** AIEA assessment data path.

Dependency transparency

AIEA is **not fully offline-capable**: sign-in, payments, email, and cloud storage depend on external availability. Architecture diagrams in the appendix illustrate these links.

Governance, Risks, and Roadmap

Governance

- **Source of truth:** Production behavior is defined by deployed application code and Azure configuration.
- **Change control:** Deployments via tagged container images (`deploy-acr.ps1`) with verification scripts.
- **Admin access:** Restricted to allowlisted corporate Entra identities.

Key risks (transparent)

Risk	Business impact	Mitigation direction
Limited in-repo observability	Longer incidents	Application Insights / structured logging
Secrets in app settings	Exposure if misconfigured	Key Vault, rotation policy
Processor geography	Contractual data location questions	Inventory all Azure/Stripe/Microsoft regions

Roadmap themes (recommended)

1. **Operate** — monitoring, backups, runbooks.
1. **Secure** — secret management, least-privilege storage access.
1. **Scale** — PDF throughput and job queue.
1. **Assure** — privacy deletion verification across blob + JSON.

Glossary (short)

Term	Meaning
CIAM	Customer Identity Access Management (External ID)
App Service	Azure managed web hosting
Blob Storage	Azure file/object storage for reports
API	Application programming interface between browser and server
PDF rendering	Converting report layout to downloadable PDF
Authentication	Proving user identity
Tenant	An organization boundary in Microsoft Entra

ACMT and Complete Azure Architecture

What this adds to AIEA

The **AIEA Cost Management Tool (ACMT)** is Consult's credit, subscription, and ledger layer on top of the existing Azure-hosted advisor. Customers and Copilot agents consume **credits** for AI-assisted conversation; admins manage plans, top-ups, and notifications in the same App Service deployment.

One platform picture

The diagram **Azure platform with ACMT** shows:

- **Clients:** marketing site, advisor SPA, admin portal, and Microsoft Teams / Copilot Studio (Direct Line).
- **Azure:** App Service and Container Registry, Blob Storage for reports, persistent disk for runtime JSON, optional **Azure SQL** for the ACMT ledger, Entra External ID and corporate Entra, and Cost Management for operations.
- **Integrations:** Stripe (reports and credit top-ups), Microsoft Graph, Copilot Direct Line, optional Azure OpenAI for mail auto-reply, and future Marketplace fee handling.

ACMT in plain language

Capability	Customer / agent experience	Platform
Top-ups	Stripe checkout for credit packs	Webhook grants credits after payment
Subscriptions	Configurable plans (seed data in repo)	JSON config + ledger events
Admin	ACMT section in admin portal	Corporate Entra only
Copilot	REST APIs for resolve, status, preflight, commit	Service key for agent calls

Security and data

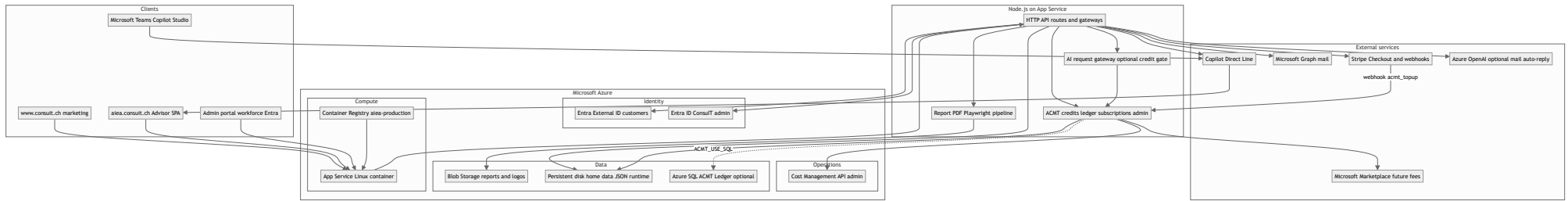
- ACMT does not replace Entra: identity still flows through **Entra External ID** (customers) and **corporate Entra** (admin).
- Ledger events are **append-only**; financial grants from Stripe occur only after **verified webhooks**.
- Optional Azure SQL is a **deployment choice** (ACMT_USE_SQL); otherwise data stays on the App Service persistent volume with the rest of runtime JSON.

Availability

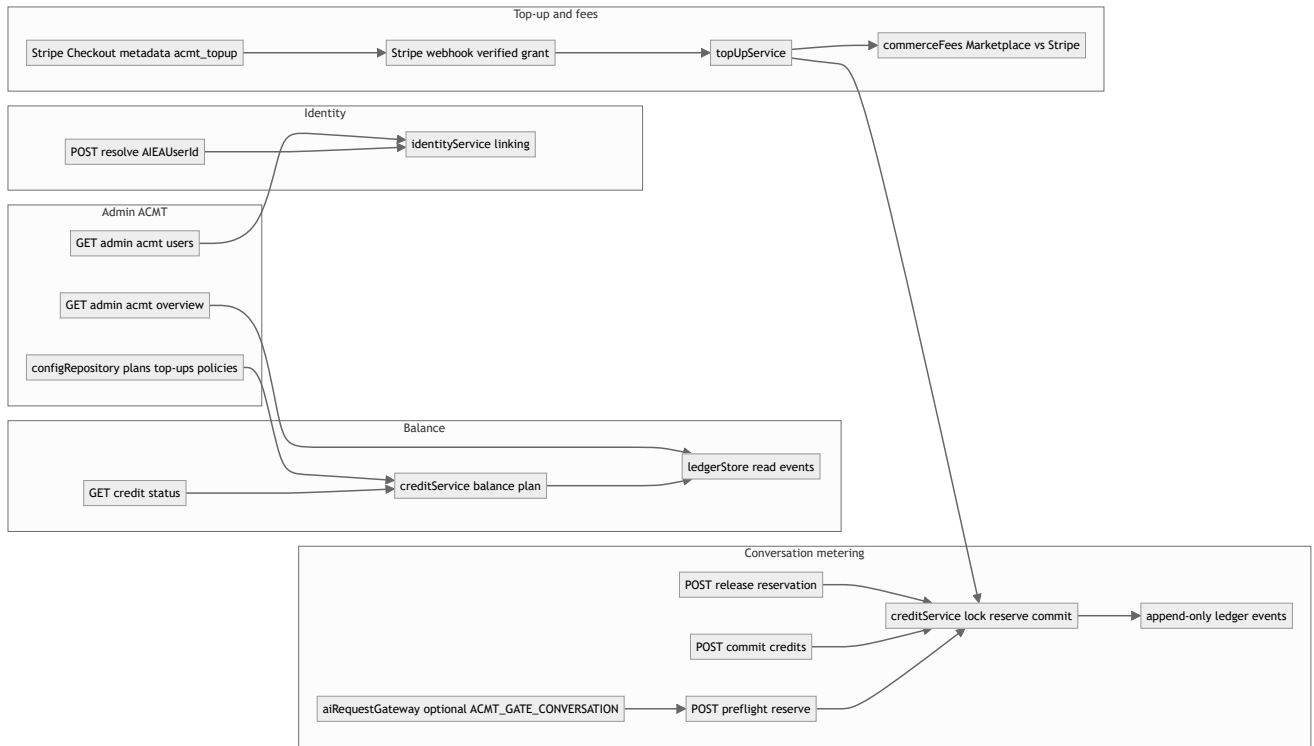
ACMT shares the **same App Service** availability profile as AIEA. Stripe and Entra outages affect top-ups and login respectively; the advisor can still serve non-gated features when configured.

Documentation depth

Technical module list, env settings, and IaC paths are in the technical chapter **ACMT and Full Azure Platform**. OpenAPI and Copilot integration guides live under `docs/acmt-*.md` in the repository.



Complete Azure platform including ACMT



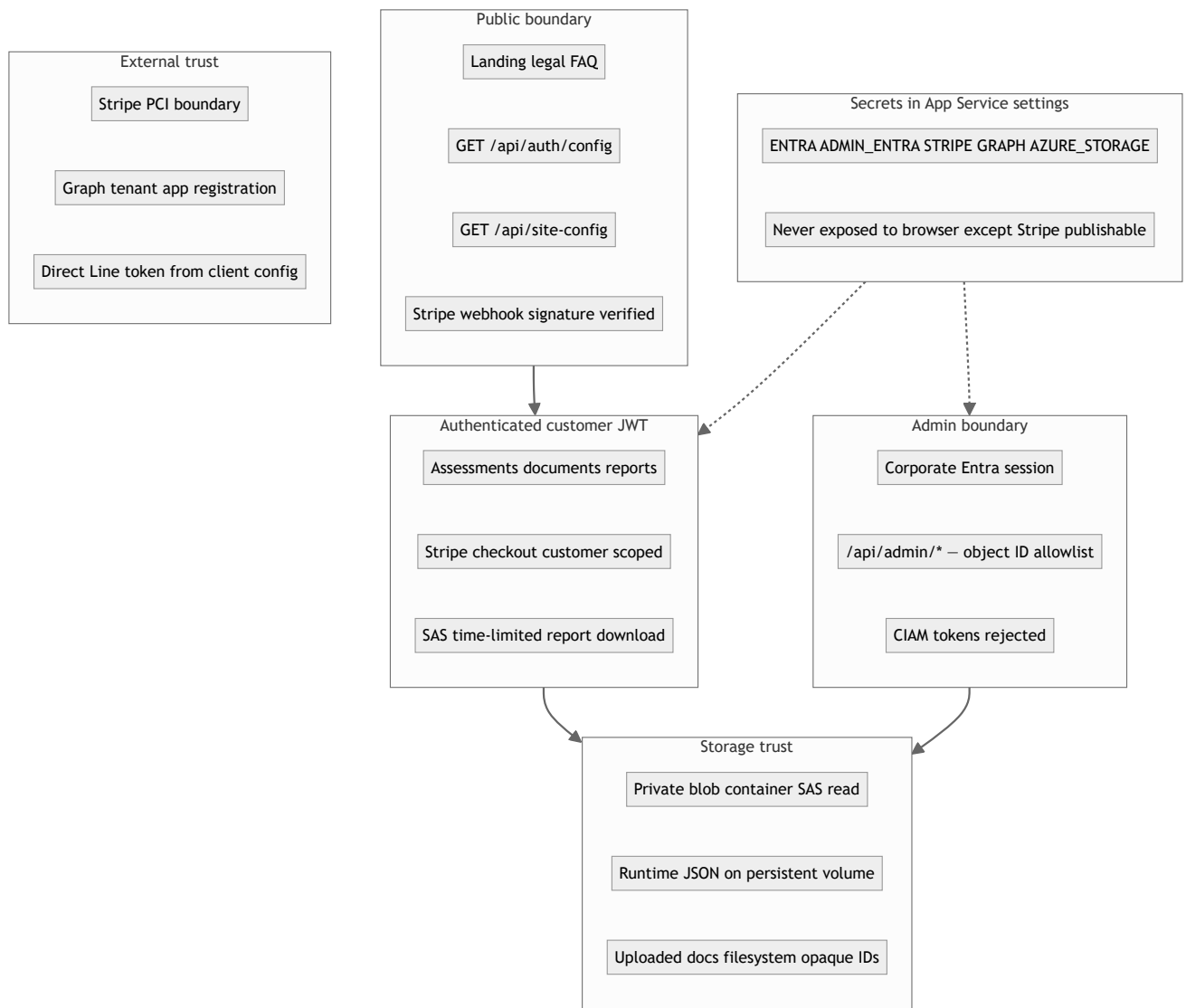
ACMT credits and Stripe top-ups

 Platform overview

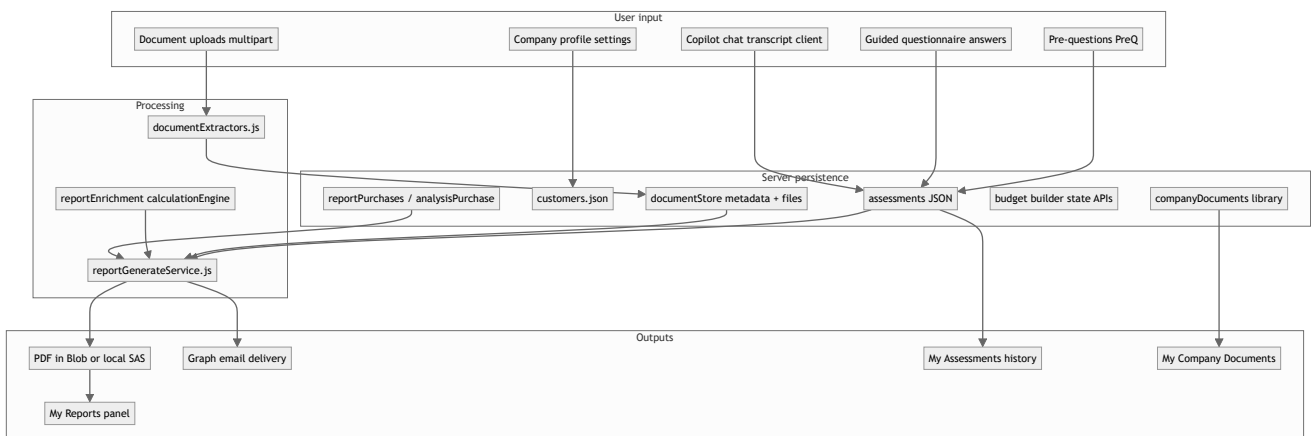
Platform overview

 Azure services used by AIEA

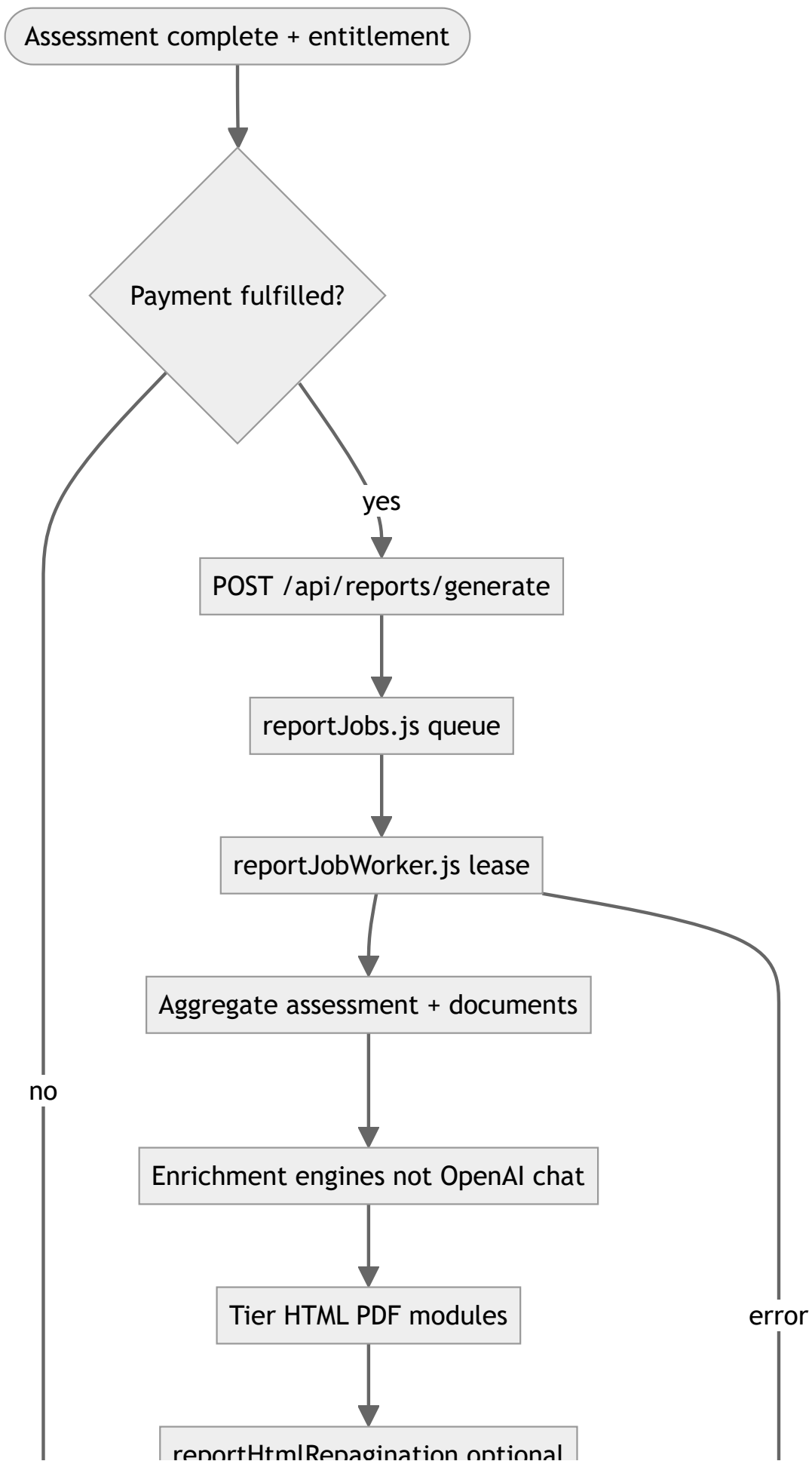
Azure services used by AIEA

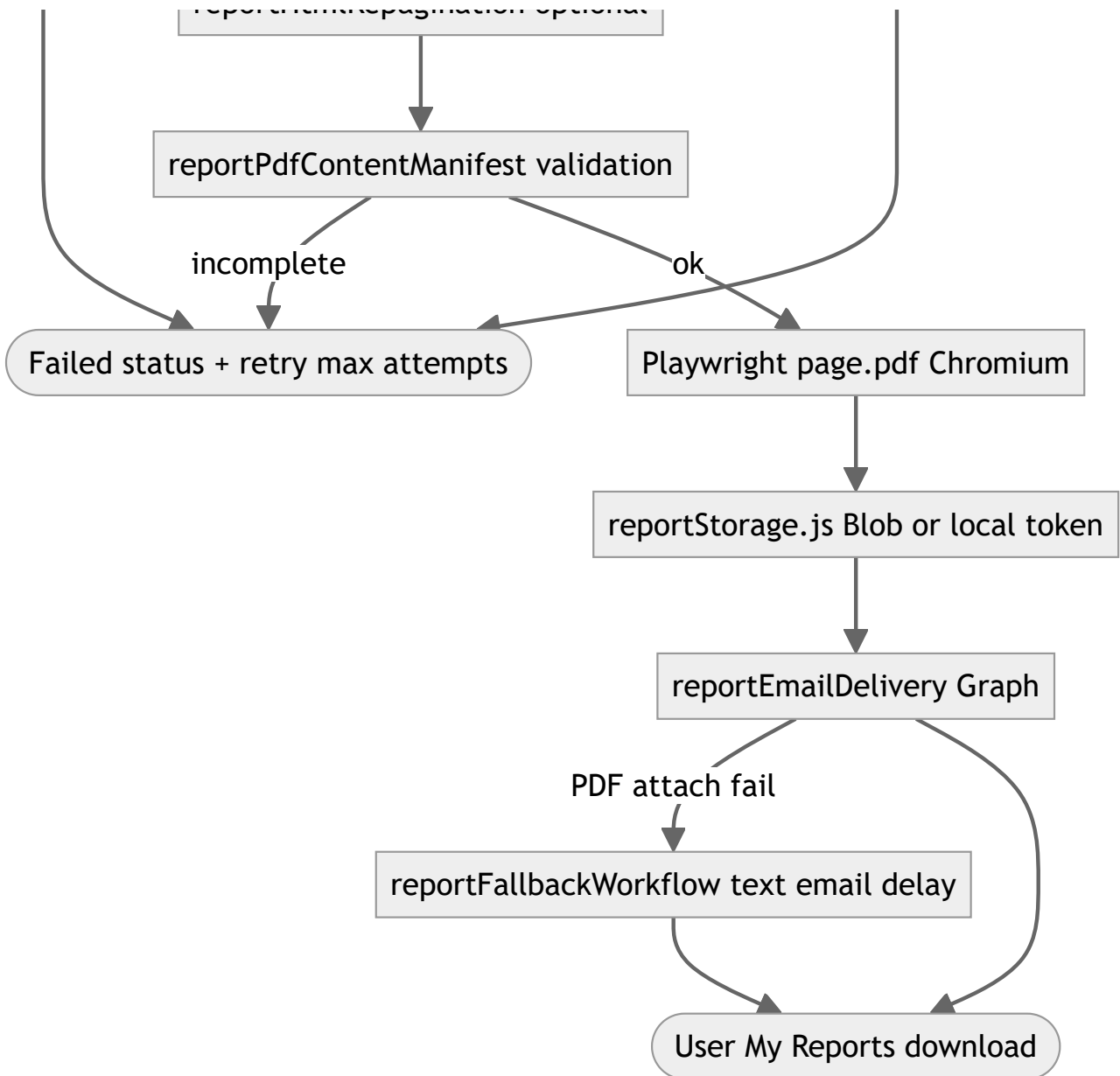


Security overview

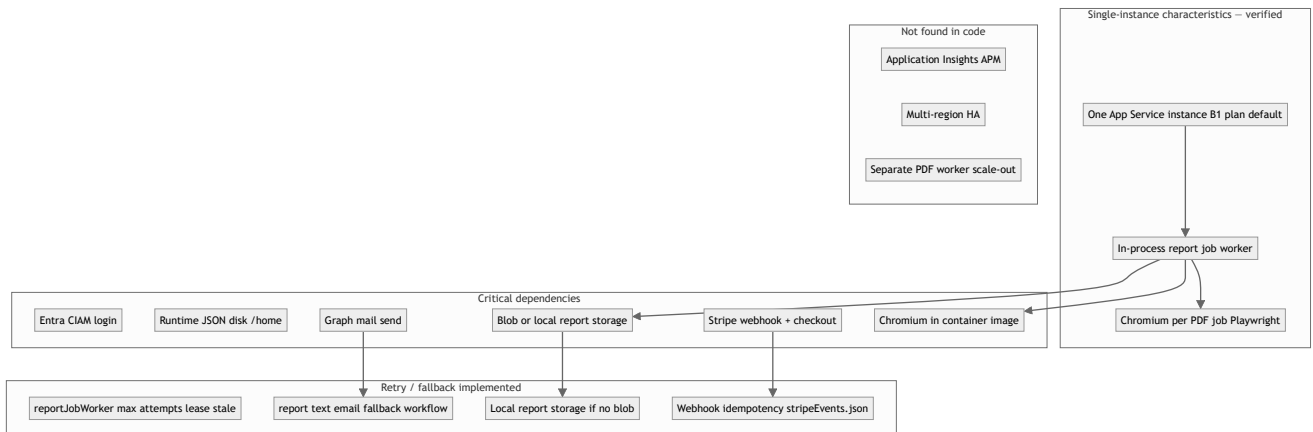


Data lifecycle





Report lifecycle



Availability dependencies

