



## Enable IQ HUB

Visibility. Compliance. Confidence.

## Enable Insight Quaero Hub Technical Solution Overview

*Purpose-built integration and compliance layer designed for Turkey's state systems —  
secure, on-prem, and future-ready powered by webMethods.*

## Version History

<b>Version</b>	<b>Date</b>	<b>Author</b>	<b>Description</b>
v1.0	2025-08-01	M. Kalın	Initial draft
v1.1	2025-08-06	M. Kalın	Added architecture
v1.2	2025-08-12	M. Kalın	ESA-ready refinement
V1.3	2025-08-12	M. Kalın	Added Topology Characteristics

## Abbreviations

<b>Abbreviation</b>	<b>Meaning</b>
API	Application Programming Interface
KVKK	Kişisel Verileri Koruma Kanunu (Personal Data Protection Law of Turkey)
MERNIS	Merkezi Nüfus İdaresi Sistemi (Central Civil Registration System)
BTK	Bilgi Teknolojileri ve İletişim Kurumu (Information and Communication Technologies Authority)
SPA	Single Page Application
SOAP	Simple Object Access Protocol
REST	Representational State Transfer
ESA	Embedded Solution Agreement
ESA-BP	Embedded Solution Agreement Business Partner
UI	User Interface
S&S	Subscription and Support
IS	Integration Server
IQ	Integration Quaero

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## Overview

Enable IQ Hub is a centralized integration and logging platform built on IBM webMethods, designed to simplify the adoption and management of Turkish state-mandated API integrations for enterprise customers. The solution is tailored for on-premise deployment, aligning with KVKK and other local regulatory requirements that restrict the use of foreign cloud infrastructure.

## Core Problem

In Turkey, enterprises are legally required to integrate with various government platforms (e.g., MERNIS, BTK, and other public data services). These services often involve the exchange of personally identifiable information (PII) and other sensitive data.

To ensure traceability and accountability, regulations mandate raw request and response logging for all interactions — especially over SOAP and REST protocols — so that the data can be presented to government authorities upon request. However, IBM webMethods does not natively support raw logging for REST APIs, and implementing these integrations from scratch per customer is time-consuming and error-prone.

## Enable IQ Hub: Our Solution

Enable IQ Hub closes these gaps with a secure, modular, and production-ready solution that:

- Delivers ready-to-use, standardized, and regularly updated integration packages for key Turkish state APIs
- Offers a modern browser-based UI for integration configuration and lifecycle management, delivered as a Single Page Application (SPA) hosted directly on IBM webMethods.
- Implements a custom raw logging layer that captures full REST and SOAP messages, including headers and payloads
- Uses an asynchronous, message-based pipeline to log data without affecting runtime performance
- Supports pluggable logging targets — with Elasticsearch by default, and customizable connectors for databases, files, or SIEM tools

- Ensures full on-premise deployment, respecting KVKK constraints and data residency requirements

## Why IBM webMethods?

To support customers with highly diverse IT landscapes (e.g., SAP, databases, mainframes, MQ, legacy systems), we needed a robust and extensible runtime. IBM webMethods provides:

- Seamless integration across protocols and enterprise systems
  - Visual flow-based development to reduce custom code
  - Built-in SPA hosting capabilities for embedded configuration UIs
  - Mature orchestration and deployment features for scaling across customers
- With this foundation, Enable IQ Hub offers both deep technical extensibility and plug-and-play usability, reducing integration time while maintaining full regulatory compliance.

## Key Features

**Prebuilt State Integrations:** Ready-to-use integration packages for key Turkish government APIs (e.g., MERNIS, BTK), regularly updated and version-controlled.

**SPA-based UI Management:** A modern Single Page Application (SPA) hosted on IBM webMethods enables centralized, browser-based configuration and control — eliminating the need for any other tool.

**Raw Message Logging (REST + SOAP):** Full raw request and response logging for REST and SOAP services, ensuring regulatory traceability and audit-readiness.

**Message-Driven Logging Pipeline:** Logs are published asynchronously to a messaging queue and processed separately, ensuring performance isolation from business services.

**Common Log Schema with Plug-in Support:** A unified internal schema allows logs to be routed by default to Elasticsearch and can be easily customized for other endpoints (databases, files, SIEM, etc.).

**On-Prem Compliance (KVKK Ready):** The entire solution is deployable on-premise, ensuring compliance with Turkish KVKK and data residency laws.

**Deep Integration Capabilities:** Powered by IBM webMethods, the platform supports integration with SAP, MQ, DB, mainframe, flat file systems, and more via built-in adapters.

Low-Code Extensibility: Visual development tools in webMethods reduce customization time, enabling rapid deployment across heterogeneous customer environments.

Error-Safe Logging: Logging is designed to fail gracefully — in case of any issues in the logging pipeline, core integrations continue to function without disruption.

## Implementation Details

Enable IQ Hub is architected as a modular and pluggable solution to meet the rigorous integration and compliance needs of enterprise customers in Turkey. It leverages IBM webMethods as its core runtime and adds critical capabilities through custom-built layers and components.

### Component Breakdown

- Runtime (IBM webMethods): Acts as the central engine for handling API requests, orchestrating integration flows, and enabling connectivity with back-end systems like SAP, databases, MQ, or mainframes.
- SPA UI Layer: A modern, browser-based Single Page Application (SPA) hosted directly on IBM webMethods enables centralized configuration of integrations, credentials, endpoints, and logging behaviors.
- Logging Layer: A custom-built module intercepts both REST and SOAP requests to capture raw payloads. It transforms each message into a common log schema.
- Messaging Queue: Intercepted log messages are published asynchronously to a messaging queue to ensure the logging process is fully decoupled from business flows.
- Log Processor: A dedicated service reads from the queue, enriches or transforms the data if needed, and forwards it to the configured log sink.
- State Integration Packages: Ready-made and version-controlled integration packages for Turkish government APIs like MERNIS and BTK are delivered and updated through this layer.

## Flow Logic

1. Client request is received and processed by IBM webMethods.
2. Logging Interceptor captures the raw request and wraps it using the common log schema.
3. The log entry is published to the messaging queue without blocking the main flow.
4. The Log Processor asynchronously reads from the queue and routes the log to Elastic (default) or any configured destination.
5. Business flow continues without disruption regardless of the logging outcome (error-safe behavior).

## Security Considerations

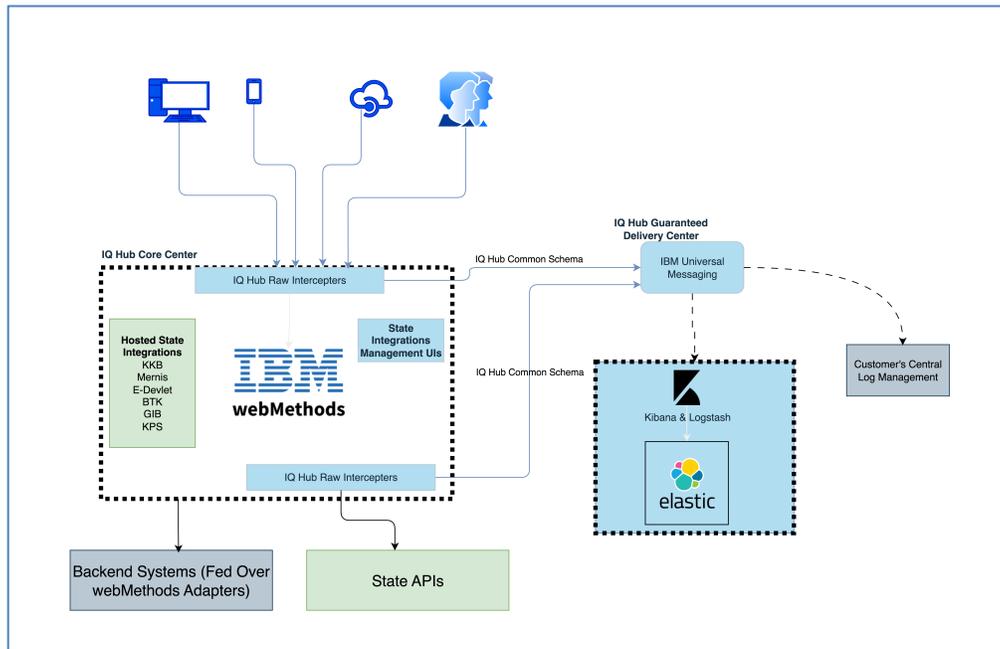
- Sensitive payload fields are masked or redacted as per customer policy.
- API credentials and endpoints are securely stored and managed through the UI.
- Since the entire deployment is on-premise, customer data never leaves their infrastructure, satisfying KVKK requirements.

## Extensibility

- New state integration packages can be plugged in via a standardized lifecycle, with minimal customer involvement.
- Log processor can be extended to support additional output formats or destinations such as relational DBs, syslog, or third-party SIEM tools.
- SPA UI is built to allow toggling features and customizing mappings without code-level changes.

## Deployment Topology

Enable IQ Hub is designed to be deployed entirely on-premise, aligning with KVKK and Turkish regulatory requirements. Its components are modular and can scale both vertically and horizontally depending on customer infrastructure and load expectations.



1 - Enable IQ Hub Deployment Topology

## Standard Deployment Components

- IBM webMethods Runtime: Installed as the core engine for integration logic and SPA hosting. Typically runs in a clustered or standalone mode based on HA requirements.
- SPA UI (Single Page Application): Hosted directly on the IBM webMethods runtime and served as the main user interface for administration and configuration. No external UI layer is required.
- Messaging Queue (Optional but Recommended): Used for decoupled log processing. Can be backed by JMS, Kafka, or other enterprise-grade messaging platforms already in use at the customer site.
- Log Processor: Deployed as a lightweight Java service or IS package that consumes logs from the queue and forwards them to Elastic or any custom destination.
- Elastic / Log Sink: Default logging destination. Can be replaced or extended with a file system, SIEM, or database sink.

## Topology Characteristics

- Separation of Concerns: Logging, processing, and UI layers are cleanly separated to allow independent scaling and upgrades.
- High Availability (HA): IBM webMethods runtime and messaging infrastructure can be deployed in HA mode for fault tolerance.
- Resource Isolation: Logging activities are non-blocking and designed not to interfere with core integration flows.
- Security Zones: Components can be distributed across network zones (e.g., DMZ for APIs, internal zone for processing) based on the customer's security posture.

### Optional Enhancements:

- Remote Logging Processor: In larger environments, the log processor can be hosted on a separate node or container for better performance isolation.
  - Integration Gateway / API Gateway: Existing gateways in the customer architecture can be retained, with Enable IQ Hub acting as the downstream orchestrator and logger.
- All deployments are documented and scripted to be reproducible, with support for automated installation and parameterization for different customer environments.

## Logging Flow Deep Dive

Enable IQ Hub introduces a custom logging layer to ensure full traceability and compliance with regulatory requirements. The logging mechanism is designed to capture both REST and SOAP traffic without affecting the performance of integration services.

## Logging Flow Stages

1. Interception: As soon as a request enters IBM webMethods, a custom logging interceptor captures the raw HTTP request. This includes HTTP headers, query parameters, payloads, and context information (e.g., timestamps, caller IP, endpoint).
2. Schema Mapping: The captured data is normalized into a common internal schema to standardize log formats across different APIs and protocols.
3. Asynchronous Publication: The log message is then pushed to a messaging queue (e.g., JMS, Kafka). This asynchronous step ensures that logging is completely decoupled from the main processing flow, providing fault tolerance and zero delay for the business logic.
4. Processing & Enrichment: A log processor running in the background pulls messages from the queue. It can optionally enrich the logs with additional metadata such as customer ID, integration ID, or geolocation.
5. Final Delivery: The processed log is forwarded to the default sink (e.g., Elasticsearch) or any custom endpoint configured by the customer (e.g., database, SIEM, log file).

## Design Highlights

- Error-Safe Execution: If the logging pipeline fails (e.g., queue is unavailable, sink is down), the integration flow continues unaffected. Errors are logged internally and optionally alerted.
- Customization Flexibility: Customers can modify the log processor to change the output format, redact sensitive fields, or add compliance flags.
- Storage Compliance: Logs can be persisted in local storage or systems located within Turkey to meet data residency obligations under KVKK.
- End-to-End Observability: With raw request/response logging, Enable IQ Hub provides full audit trails for every call made to state APIs — a key requirement in Turkish regulatory audits.

## Appendix

### List of Pre-Built Integrations

Integration Name	Protocol	Description	Status
MERNIS	REST	National ID Verification Service	Ready
BTK	REST	Telecommunication Notification API	Ready
GIB E-Arşiv	SOAP	Electronic Invoice Archiving	Ready
SGK Medula	SOAP	Healthcare Service Integration	Planned
KKB E-Teminat	REST	Credit Bureau of Turkey Integration	Planned
E-Devlet	REST	Citizen Service Gateway Integration	Planned
KPS	SOAP	Identity Sharing System	Ready
GIB E-Fatura	SOAP	Electronic Invoice System	Planned
GIB E-Defter	SOAP	Electronic Ledger Integration	Planned
SGK E-Vizite	REST	Medical Leave Notification	Planned
TÜİK	REST	Statistical Data Exchange	Planned
YÖK	SOAP	Higher Education Council Integration	Planned