API Protocols

1. REST (Representational State Transfer)

- An architectural style for designing networked applications.

- It emphasizes stateless communication, the use of standard HTTP methods (GET, POST, PUT, DELETE), and resources identified by URLs.

2. GraphQL

- A query language for APIs that allows clients to request exactly the data they need, nothing more and nothing less.

- This efficiency is a major advantage over REST, where endpoints often return fixed data structures.

3. SOAP (Simple Object Access Protocol)

- A protocol for exchanging structured information in the form of XML messages over a network.

4. gRPC (Google Remote Procedure Call)

- A high-performance, open-source framework for remote procedure calls (RPCs).

- It uses Protocol Buffers (a compact binary format) for data serialization.

5. Webhooks

- A mechanism for real-time communication between applications.

- A webhook is essentially an HTTP callback triggered by a specific event in one system, which sends a notification to another system.

6. WebSockets

- A protocol providing full-duplex communication channels over a single TCP connection.

- WebSockets enable real-time data exchange between a client and a server.

7. MQTT (Message Queuing Telemetry Transport)

- A lightweight publish-subscribe messaging protocol designed for low-bandwidth, high-latency, or unreliable networks.

- It is commonly used in IoT (Internet of Things) applications.

8. AMQP (Advanced Message Queuing Protocol)

- An open standard protocol for message-oriented middleware.

- AMQP provides features like reliable message delivery, routing, and queuing, making it suitable for enterprise integration scenarios.

9. EDA (Event-Driven Architecture)

- A software architecture pattern where applications react to events (e.g., user actions, sensor readings).

- EDA promotes loose coupling and scalability.

10. EDI (Electronic Data Interchange)

- A set of standards for exchanging business documents (e.g., purchase orders, invoices) electronically between organizations.

- EDI is widely used in supply chain management and logistics.

11. SSE (Server-Sent Events)

- A server-push technology that allows a server to send updates to a client over an HTTP connection in a unidirectional manner.

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API Protocols

REST

REST is an archiectual style for designing networked applications, using stateless communication and standart HTTP methods
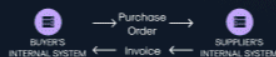
client → HTTP → URL → server
JSON

Webhooks

A webhook is a mechanism for one system to notify another system in real-time via HTTP callbacks when a specific event occurs

Register Webhooks to Subscribe to Notification
Cloud Data
Your App
Notify App as Configured
Webhook API

GraphQL

GraphQL is a query language for APIs that allows clients to request only the data they need

Clients (mobile, desktop, browser etc)
GraphQL
Backend Server

EDA

Event-Driven Architecture (EDA) is a trending software architecture pattern nawadays

Producer
Consumer A
Consumer B

SOAP

SOAP is a protocol for exchanging structured information using XML

Message Body
XML, Format
WSDL
SOAP Envelope
SOAP Header
HTTP Protocol

EDI

EDI (Electronic Data Interchange) is a set of standarts for exchangig structured business data between organizators electronically without human intervention.

BUYER'S INTERNAL SYSTEM
Purchase Order
Invoice
SUPPLIER'S INTERNAL SYSTEM

WebSockets

WebSockets provide a full-duplex communication channel over a single, long-lived connection, allowing for real-time data exchange

client
Request
Hand Shake
Web Socket
server

API TECNO-LOGIES

REST
Webhooks
GraphQL
SOAP
WebSockets
gPRC
MQTT
AMQP
SSE
EDI
EDA

SSE

SSE (Server-Sent Events) is a simple and efficient standard for server-push notifications over an HTTP connection
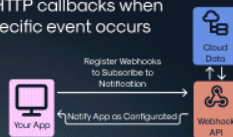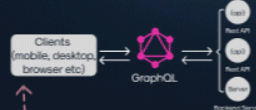
Connection
client
Event
Event
Event
Event
server
Close conversation

AMQP

AMQP is an open-standard protocol for message-oriented middleware, facilitating message routing, queuing, and delivery.

Producer
Publish
Exchange
Route
Consumer
Consume
Message Queue

MQTT

MQTT is a lightweight publish-subscribe messaging protocol designed for low-bandwidth, high-latency, or unreliable networks

IoT Data
IoT Data
IoT Data
MQTT
Computer
Mobile device

gPRC

gRPC Is a high-performance, open-source framework for RPCs using Protocol Buffers

gPRC Server C++ Service
gPRC Stub Ruby Client
gPRC Stub Android - JavaClient