Brief

Fictional Motor Co builds and sells cars globally, with new vehicles sold from regional sales offices.

The global HQ requires each of the regional offices to send through information about vehicle sales, and it is expected in near real time (within ~30s of a completed sale). This allows the HQ to effectively run the manufacturing side of the business.

The sales data is stored in a central location within the HQ infrastructure, some transformation is applied to the data on ingress. The data is used by the manufacturing facilities to scale up and down production, including the procurement of the parts required. Additionally, the data is used for global reporting purposes.

Different vehicle models are produced in different areas of the world, with some of the vehicle parts built in the locally owned facility, with others sourced from third party producers, local and abroad.

Each production facility has different supply chains and lead times, and as such they all need to access the information about new vehicles at a frequency that suits themselves. All manufacturing plants poll the data regarding new sales, with some polling every minute, and others once a day. The amount of data pulled can be vast.

Task

- Produce an API spec that will allow the regional sales offices to push the sales information to HQ.
- Produce an API spec that will be used by the manufacturing facilities to pull the information about new car sales from HQ.
- Produce an architecture diagram of the solution, include the APIs and persistence layer. Assume we will be using a cloud based provider.
- Produce some simple prototypes.

www.citnow.com
9 Millars Brook, Molly Millars Lane, Wokingham, RG41 2AD
+44 (0)1189 977740 / support@citnow.com

Bonus Tasks

- Produce some tests or a test facility. (think PostMan or automated test suite/tool)

Additional Information (Important)

- Security is a must
- If specifics are not detailed, you are expected to make valid assumptions on what they would be. i.e data payloads, acceptable security
- You should be looking to spend 4-8 hours on this project.

We'd like you to present your solution to us in an interview situation, this will be done using a video conferencing solution. You will be expected to run through your approach, and you will be asked to defend how you have put your solution together. There is no right answer to the problem.