Panel Interview Briefing for Candidate Applying for Customer Architect Role

We're looking forward to the third step in our interview process, a panel interview. You'll be asked to present to a team of 3-4 Elastic employees in a 90-minute time period. The panel content is divided into two parts, reflecting a blend of technical and strategic comprehension.

- Part 1: 30-45 Minutes : Architecture Strategy for a Cloud Transformation
- Part 2: 45 Minutes : Data Analysis and Ingestion Using Elastic Stack

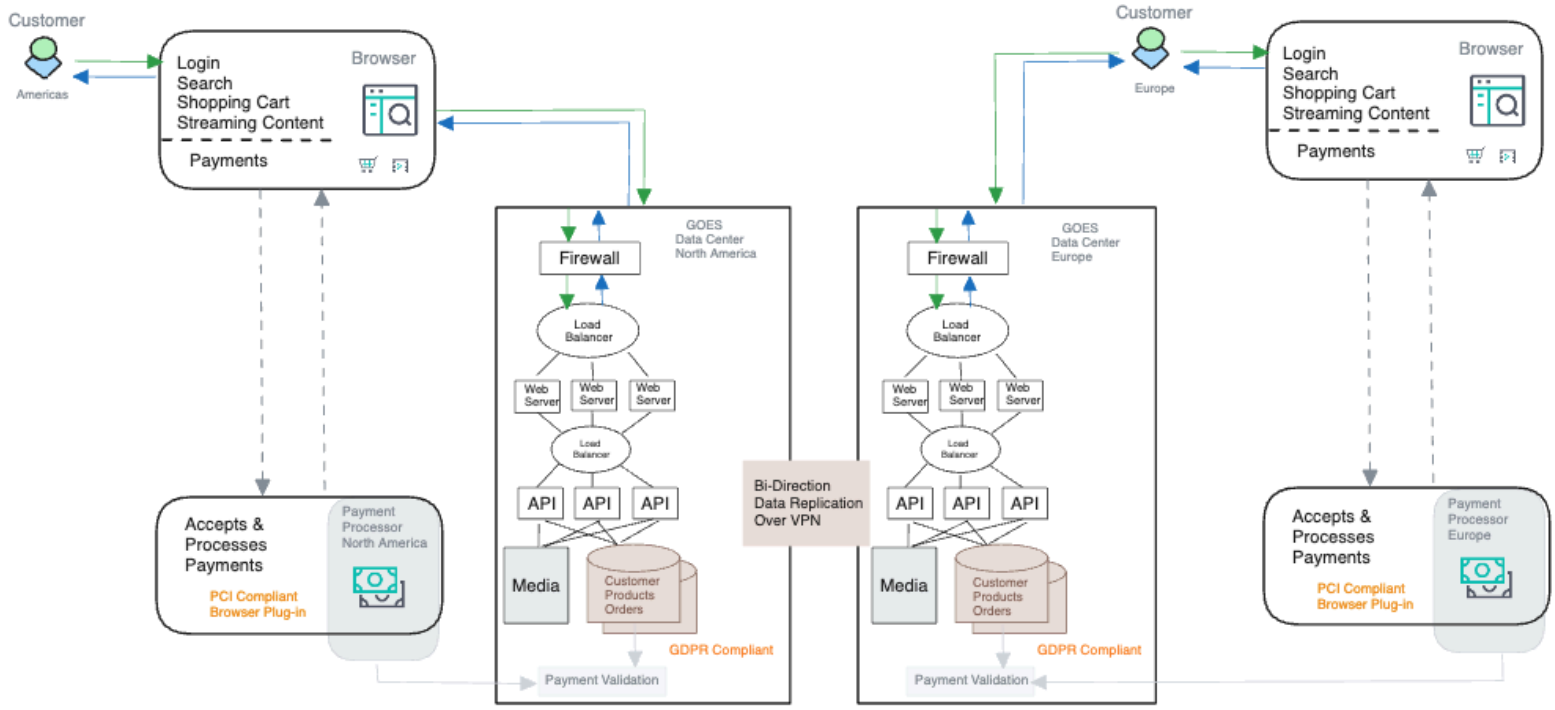
Part 1: Architectural Strategy for Cloud Transformation (30-45 min)

Scenario

Your Role: Cloud Consultant

Company Business Profile: Global, On-line E-Commerce and Streaming Content Provider (GOES)

Current State Technology Architecture: On-pemisses (multiple physical data centers) that are self-managed



The company (GOES) has made a strategic decision to transition to a hybrid cloud environment.

You will be presenting to the panel of interviewers who will role-play the following stakeholders:

1. Application Stack developer
2. Enterprise Architect
3. VP Engineering
4. A Business Person of the solution internal to our company

Objectives

Choosing a cloud provider of your preference, guide us through the architectural transformation this company needs to undertake to successfully transition to the cloud.

Key objectives are:

- ➔ To design an architecture using cloud-native patterns that effectively supports the transition of existing on-premise applications and infrastructure to the cloud.
- ➔ To address the challenges of ensuring seamless functioning in a hybrid environment.
- ➔ To identify and discuss potential risks associated with moving to the cloud and propose strategies to mitigate them.
- ➔ To highlight the opportunities that the cloud provides over their existing self-managed on-premise setup, outlining the potential benefits and enhancements the company could enjoy.
- ➔ To demonstrate a comprehensive understanding of key considerations the company should have during this transition, such as cost, security, scalability, and data management.

This segment doesn't specifically require the inclusion of Elastic. The focus is on your overall architectural understanding, cloud migration strategy, and ability to identify and address potential risks and opportunities. We not only want to hear about the high-level architecture but also technical details that show you are able to go deep. Again, this doesn't have to be Elastic centric of course.

Considerations and attributes

The e-commerce company operates globally, has a peak load during holiday seasons, and maintains sensitive customer data due to its nature of business.

Size and Scale

The e-commerce company is a large multinational business, with operations across different continents. They have millions of active users on their platform, which results in a substantial amount of data being generated daily.

Data Privacy and Compliance

The company operates in regions with strict data privacy regulations (such as the GDPR in Europe), which influences how and where they can store and process their data.

Complexity of Services

The company offers a variety of services (e.g., online shopping, content streaming, online payment services) which increase the complexity of the architecture.

Peak Periods

The e-commerce company experiences significant spikes in traffic during certain periods (like Black Friday or Christmas), which requires a robust and scalable architecture to handle these peak loads without any disruption to the services.

Business Continuity Requirements

The nature of their business requires a high degree of availability and resiliency. Any significant downtime or service disruption could result in substantial revenue losses.

Innovation Mindset

The company has a culture of innovation and frequently experiments with new features and services to improve customer experience. This means their architecture needs to support rapid changes and deployments.

By taking these attributes into account, you should demonstrate an understanding of how these factors shape the architectural decisions in a cloud environment.

Please prepare diagrams to visualize your architectural design during your presentation. These diagrams can represent a step-by-step transformation process, or various aspects of the final architecture. This will help us better understand your thought process and the key decisions that you have made in designing this transformation.

Part 2: Data Ingestion and Analysis using Elastic Stack (45 min)

Objective

Use the **Elastic platform** to ingest and analyze a sample dataset. This will enable us to gauge your hands-on capabilities and the depth of your curiosity about Elastic's products.

Presentation

Walk us through your process and findings. Explain your choices, the challenges you encountered, and how you overcame them. Discuss what your visualizations and dashboards reveal about the dataset. There should be a flow to your presentation. Demonstrate you are capable of using the features of the Elastic stack to gather data, search that data to narrow down your results, and visualize them.

The interview will provide an opportunity for us to understand your strategic thinking in Part 1, and hands-on capabilities as well as your depth of curiosity about Elastic's products in Part 2.

Please prepare a presentation to share with the panel. We look forward to discussing your ideas during our panel interview.
Finally, with any customer meeting time-management is nearly as important as the content, feel free to manage the time but please be mindful of the scope we want to cover and the time availability you have.

Exercises

Prerequisites

[Create an Elastic Cloud trial]

1. Make sure you save the user Elastic and its corresponding password.
2. Once the instance is up and running, please save your Cloud Id as well.

We are ready to begin our exercises. Please be prepared to share what you did. Please note, the documentations are not perfect.

There are two exercises below. You can choose either.

Exercise 1:

Collect Metrics from your local via System integration

Follow these instructions for Elastic Agent to collect metrics from your local machine.

- Disable log collection for your system integration
- Navigate to `Observability > Infrastructure > Hosts` (You may need to enable this)
- Create 2 alerts/rules
    1. Send yourself an email when average `system.cpu.system.pct` is above 50% usage for the last 1 min
    2. Send yourself an email when average `system.memory.used.pct` is above 85% for the last 1 min
- Bonus point: Customize alert subject and content

Collect Logs using Logstash

- Please use the attached apache access log file
- Here is the quick start guide for Logstash
- Please use the Logstash file input and Elasticsearch output. Please consult Elasticsearch output for additional configurations
- You can use a prebuilt Logstash grok pattern or specify your own
- Use Kibana to create visualizations on a few points of interests with the Apache access log and gather them into a Kibana dashboard
- Bonus point: Create a single metric anomaly detection job to detect excessive high or low log rate. You may need to create a data view first.

Collect APM traces

The application that we are monitoring is Spring Pet Clinic. Please see instructions in the repo on how to run Petclinic. It is a Java application so you would need:

1. JDK17
2. Set JAVA_HOME

- Follow instructions to set up Elastic APM
- The APM Agents tab in Kibana contains detailed instructions on how to instrument applications in various languages with Elastic APM agent. We are using a Java agent here.
- Go to `Observability > APM > Services` to see the instrumented application when complete

Final Question

- How are the vitals of your local host while you are ingesting data? Any alerts triggered.

Exercise 2:

Benchmark Elasticsearch using ESRally

- Benchmark with ESRally using a remote cluster

- Please come prepared to explain what track(s) you used and what are the race results.
- Bonus Points: Create your own custom track

Impress us,
The Elastic Team