

Top 20 Spring Cloud Interview Questions and Answers for 3 to 5 Years Experienced

1. What is Spring Cloud?

- **Answer:** Spring Cloud is a set of tools and frameworks that simplify the development of cloud-native applications and microservices using the Spring Boot framework.

2. What are the advantages of Spring Cloud?

- **Answer:** Spring Cloud offers several key benefits, including:
 - Reducing redundancy: It helps avoid duplicated effort in implementing common cloud-related functionalities.
 - Service discovery: Spring Cloud provides tools like Eureka and Zookeeper for automatic service registration and discovery.
 - Load balancing: It integrates Netflix Ribbon for client-side load balancing, distributing requests evenly across service instances.
 - Addressing complexity: Spring Cloud simplifies challenges associated with building and managing distributed systems.

3. What is the main difference between Spring Cloud and Spring Boot?

- **Answer:** Spring Cloud is a framework for building and managing microservices, focusing on the coordination and communication aspects, while Spring Boot simplifies the development of standalone Spring-based applications, including microservices.

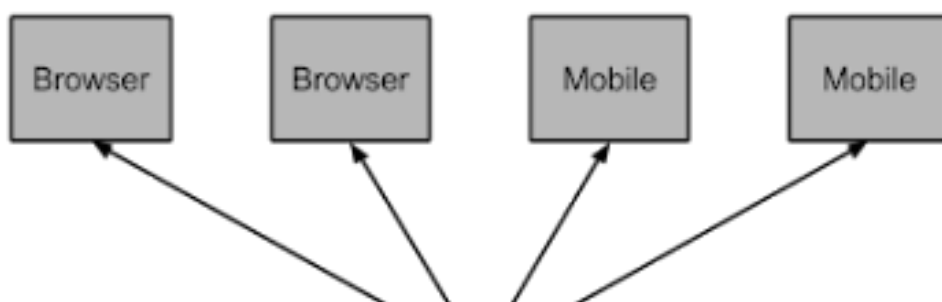
4. What are the common features of Spring cloud?

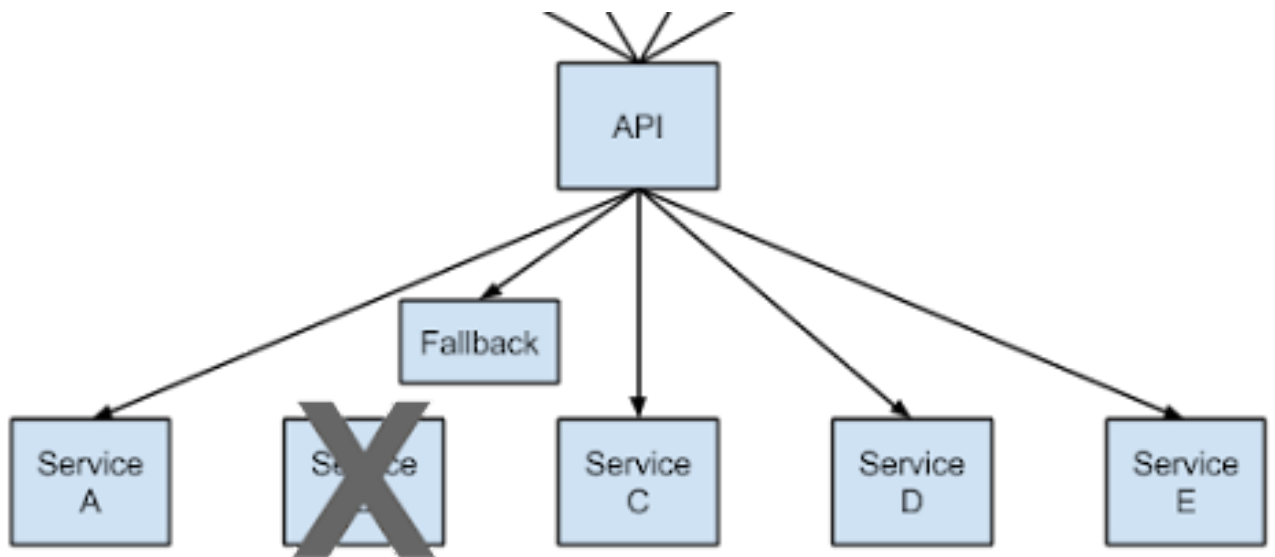
Answer: Here is a list of some of the most common features of the Spring Cloud framework, which greatly help in developing cloud-native apps and Microservices:

- Service registration and discovery
- Routing
- Service to service calls
- Distributed and versioned configuration
- Load balancing and circuit breakers

5. What is Hystrix?

Answer: Hystrix is a fault-tolerance and latency library designed by Netflix for isolating points of access to remote systems, third-party libraries, services, stopping cascading failures, and enabling resilience in complex distributed systems where failure is common and cannot be avoided. This library is created by Netflix and it implements Circuit breaker pattern





6. What is the use of the Spring Cloud Bus?

- **Answer:** Spring Cloud Bus facilitates the propagation of configuration changes across multiple instances of microservices, allowing for synchronized configuration updates.

7. Which services provide service registration and discovery?

- **Answer:** Eureka and Zookeeper are services that offer service registration and discovery functionalities.

8. What are some common Spring cloud annotations?

Answer: here is a list of some of the most essential Spring cloud annotations for Java developers:

- @EnableConfigServer
- @EunaleEurekaServer
- @EnableDiscoveryClient
- @EnableCircuitBreaker
- @HystrixCommand

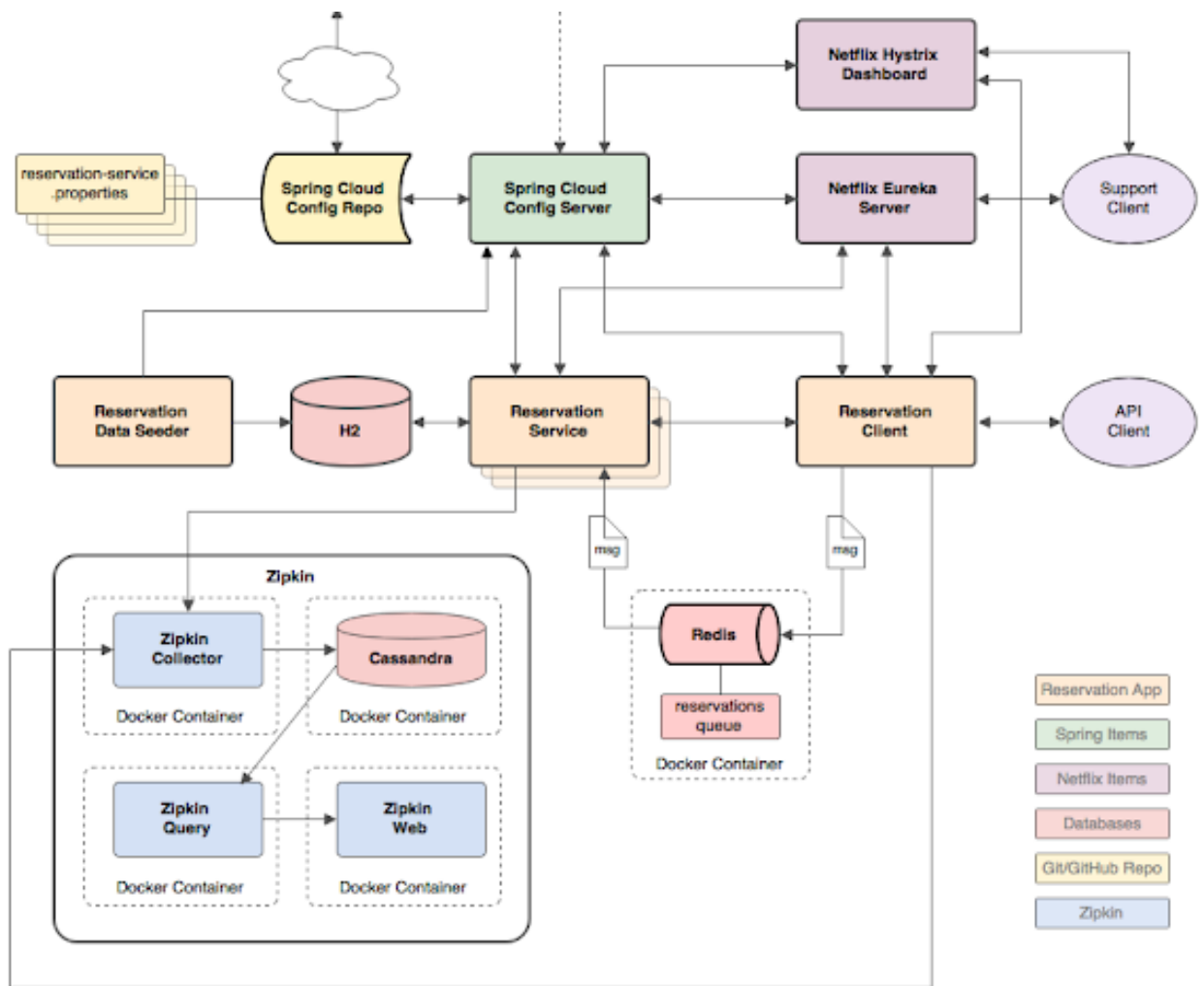
9. What is PCF?

- **Answer:** PCF, or Pivotal Cloud Foundry, was an open-source multi-platform cloud platform used for deploying, managing, and scaling applications. Although not as popular today, PCF was significant for its contributions to Spring Framework development.

10. What is load balancing?

- **Answer:** Load balancing is a technique that distributes network or application traffic across multiple servers to optimize resource utilization, improve responsiveness, and enhance fault tolerance.





11. Why do we use Netflix Feign?

- **Answer:** Netflix Feign simplifies making HTTP requests to other services by providing a declarative way to create REST clients. It reduces complexity and boilerplate code for service communication.

2. How is load balancing implemented in Spring Cloud?

- **Answer:** Spring Cloud uses Netflix Ribbon for load balancing. Ribbon distributes client requests across available service instances to achieve load balancing.

13. What are the benefits of Eureka and Zookeeper?

- **Answer:** Eureka provides high availability and usability for service registration and discovery, while Zookeeper offers strong consistency and fault tolerance in distributed systems.

14. What is the purpose of the Hystrix circuit breaker?

- **Answer:** The Hystrix circuit breaker prevents failures in one part of a system from affecting the entire system by isolating failing components. It helps maintain system stability and performance.

5. What is Netflix Feign?

- **Answer:** Netflix Feign is a Java-based HTTP client binder that simplifies building REST clients. It's inspired by technologies like JAX-RS, WebSocket, and Retrofit.

16. How do you utilize dependency injection with Spring?

- **Answer:** Spring supports dependency injection through XML configuration or annotations like `@Autowired`. Dependency injection enables the management and resolution of object dependencies by the Spring IoC container.

17. What is Spring Security?

- **Answer:** Spring Security is a framework that provides authentication, authorization, and other security features to Java applications. It ensures that applications are secured against various security threats.

18. What are the different bean scopes in Spring?

- **Answer:**
 - Singleton: A single instance of the bean is shared across the entire application context.
 - Prototype: A new bean instance is created each time it is requested.
 - Request: A new bean instance is created for each HTTP request.
 - Session: A new bean instance is created for each user session.

19. What is CSRF?

- **Answer:** Cross-Site Request Forgery (CSRF) is a security attack where an attacker tricks a user into executing unintended actions on a web application where the user is authenticated.

20. Explain the bean creation process in Spring.

- **Answer:** The process of creating a bean in Spring involves:
 - Detecting classes with annotations like `@Component`.
 - Creating instances of annotated classes and managing their dependencies.
 - Establishing connections between dependent beans using annotations like `@Autowired` or through constructors or setters.
 - Spring IoC container manages the lifecycle of beans, including initialization and destruction.