



# 1. Configs Inside the JAR

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Configuration files (e.g., .properties, .yaml) are bundled **inside the JAR** under the resources directory during the build process.

## Key Characteristics:

- Config files are packaged into the JAR during build time
- Files become part of the application binary
- Not editable at runtime



To change configurations, you must rebuild and redeploy the entire JAR file



## 2. Externalized Configuration Files

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A common best practice is to **externalize configuration** by keeping config files outside the JAR.

### How It Works:

- JAR reads configs from external file paths, environment variables, or system properties
- Simply edit or replace the external config file without modifying the JAR
- Application picks up new configurations on restart

### Examples:

```
java -jar app.jar --spring.config.location=/etc/app/config/application.yml
```

```
java -jar app.jar -Dconfig.file=/opt/config/app.properties
```

✓ Only the config file changes — no new deployment needed!

## 3. Dynamic Configuration Loading

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Modern frameworks support **dynamic reload** of configurations without application restart.

### Framework Support:

- **Spring Boot:** Spring Cloud Config
- **Micronaut:** Built-in config refresh
- **Dropwizard:** Config management features
- **External Systems:** Consul, ZooKeeper, etcd

### Capabilities:

- Config changes picked up without restarting the application
- Typically requires specific framework setup and configuration
- Minimum requirement: restart the process to reload updated files



## 4. Best Practices for Production

- **Keep configs external to the JAR** for flexibility
- **Use environment-specific config files** or environment variables
- **Consider a central config server** for frequent changes without redeployment

### Comparison Overview:

Approach	Change Process	Redeployment Required?
<b>Inside JAR</b>	Rebuild and redeploy JAR	Yes
<b>Externalized</b>	Edit config file, restart app	No
<b>Dynamic Loading</b>	Edit config file	No (with proper setup)

✓ **Key Takeaway:** If configs are externalized, you can change them without redeploying code. If baked into the JAR, you must rebuild and redeploy.