# Java Flight Recorder [Executive Reference]

## Overview

Java Flight Recorder (JFR) is a profiling and event collection framework built into the Oracle JDK. It's a tool for collecting diagnostic and profiling data about a running Java application. JFR is integrated into the JVM itself, which means it can produce detailed data with minimal performance overhead.

## Key Benefits of Java Flight Recorder?

1. **Low Overhead:** Due to its deep integration with the JVM, JFR can collect detailed performance metrics with minimal impact on application performance.
2. **Rich Set of Data:** JFR can capture a wide variety of data, including but not limited to:
   1. Garbage collection statistics
   2. Java method latencies
   3. Lock contention
   4. Hardware and OS metrics
   5. JVM internals
   6. And custom events defined by the user
3. **Continuous Recording:** JFR can be set up to run continuously, capturing data over long periods. This is particularly useful for identifying infrequent issues or performance anomalies.
4. **Configurable Data Collection:** Users can configure what types of data JFR should collect, allowing for flexibility based on the diagnostic needs.
5. **Integration with JDK Mission Control (JMC):** JFR recordings can be analyzed using the JDK Mission Control tool, which provides a rich graphical interface for diving into the data collected.
6. **Available in OpenJDK:** Originally, JFR was a commercial feature available only in the Oracle JDK. However, starting from Java 11, it's available in the OpenJDK as well, making it accessible to a wider range of Java developers.
7. **Custom Events:** Developers can define and record custom events, allowing for application-specific metrics and data to be included in JFR recordings.

## Does the Corretto JDK include JFR?

Yes, Amazon Corretto is a no-cost, multiplatform, production-ready distribution of the OpenJDK. Starting with Amazon Corretto 8u262 and Amazon Corretto 11.0.8, Java Flight Recorder (JFR) is included in Amazon Corretto builds.

When Amazon introduced JFR support in Corretto, they ensured that it provides the same capabilities available in other OpenJDK distributions. This allows developers and system administrators to diagnose performance issues, monitor system behaviors, and gather detailed low-level information about the JVM and the application running on it.

## What to expect from Java Flight Recorder?

Java Flight Recorder offers a comprehensive view into the JVM and the running application. When used effectively, it can be instrumental in diagnosing performance issues, understanding system behavior, and optimizing Java applications. JFR provides a wealth of information to help achieve goals related to Application behaviour and performance.

Here's a summarized overview of its features and benefits:

* Low Overhead
* Detailed Data
* Continuous Recording
* Customizable
* Analysis with JDK Mission Control
* Available Broadly
* Secure