



Production profiling Java apps with Cryostat

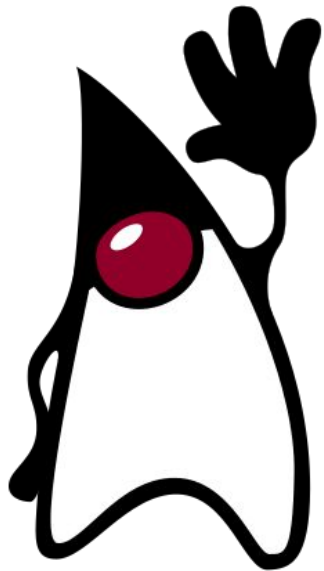
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What we'll discuss today

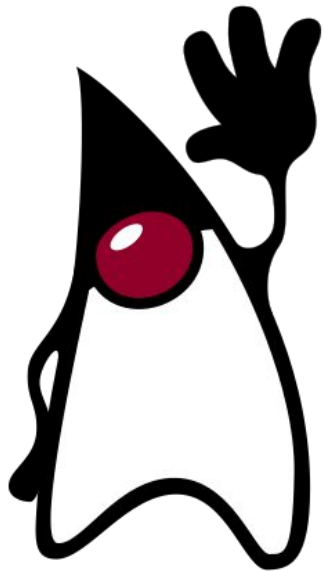
- ▶ What is JDK Flight Recorder?
- ▶ Challenges with JFR in the cloud
- ▶ How does Cryostat help?
- ▶ What are some use cases for Cryostat?
- ▶ Cryostat Highlights
- ▶ Demo
- ▶ Q&A

What is JDK Flight Recorder (JFR)?



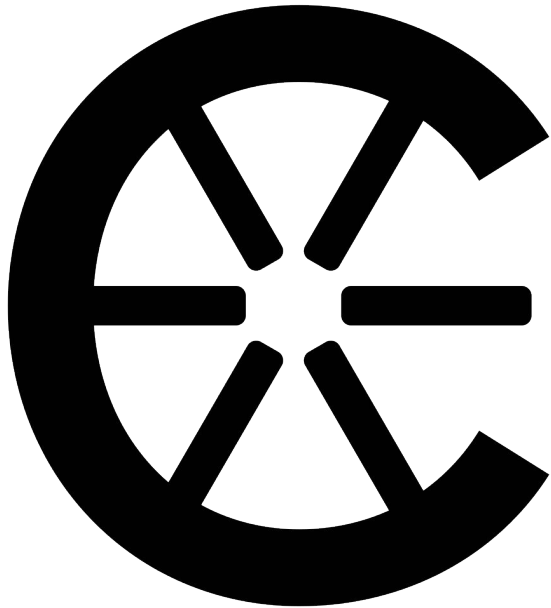
- ▶ Profiling and event collection framework for Java
- ▶ Suited for production environments
- ▶ Supports custom events
- ▶ Built into OpenJDK
- ▶ Pairs with JDK Mission Control (JMC)

Challenges with JFR in the cloud



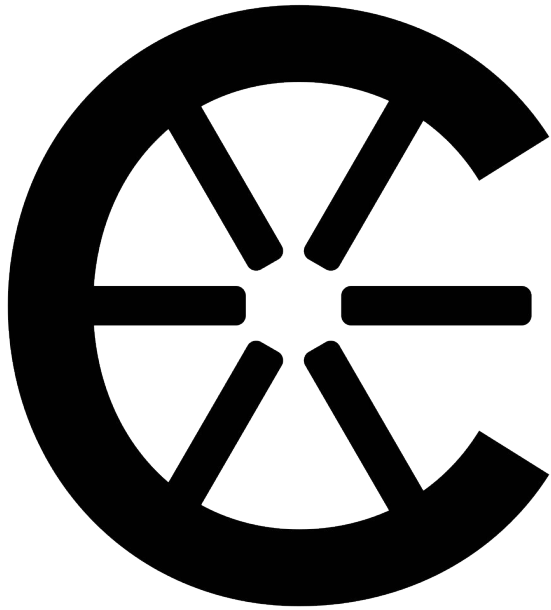
- ▶ Designed for local use
- ▶ Remote use is possible, but difficult to secure
- ▶ Challenges scaling to large deployments

How does Cryostat help?



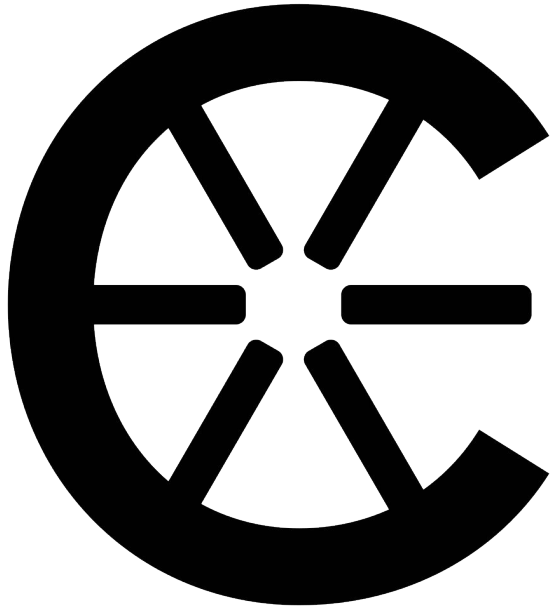
- ▶ Manage JFR recordings within containers
- ▶ Cloud native
- ▶ More secure
- ▶ Automation of recording management

How does Cryostat help?






- ▶ Archive recordings to persistent cloud storage
- ▶ Visualize metrics in-cluster with Grafana
- ▶ Export recording for analysis in JMC

What are some use cases for Cryostat?



- ▶ Migrating applications to the cloud
- ▶ Production profiling to optimize operational efficiency
- ▶ Analyzing load testing scenarios in staging environments
- ▶ Compatible with JVM applications

Cryostat Timeline

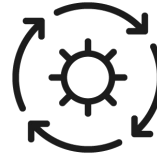
-  **1.0 Release**
04/2021
First major release of the Cryostat project. Included web client, Kubernetes operator, HTTP API, Grafana integration.
-  **2.0 Release**
10/2021
First release as Red Hat supported product, included with Red Hat build of OpenJDK subscription.
-  **2.1 Release**
05/2022
Feature release improving Cryostat's power and flexibility with larger application deployments.

Cryostat Highlights



OpenShift Operator/Helm Chart

The Cryostat Operator is now available to install from OperatorHub. For helm charts, install a simplified version of Cryostat on any Kubernetes cluster.



Automated Rules

Automatically create recordings based on main Java class, labels, annotations, and more



Custom Targets

Allow Cryostat to connect to targets using alternate connection protocols

Additional Cryostat Highlights



Recording Labels

Recordings can have labels attached to tag them with user-specific data, or to include more contextual information about the recording



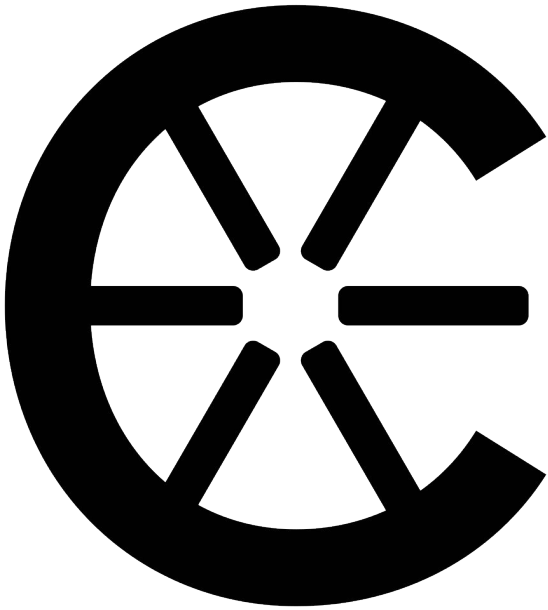
Enhanced Batch Operations

Use GraphQL API to perform recording operations on multiple JVMs at once

Demo

Q&A

Lessons Learned Today



- ▶ What is JDK Flight Recorder (JFR)?
- ▶ What are the challenges with JDK Flight Recorder (JFR)?
- ▶ How does Cryostat help?
- ▶ Cryostat and its features

Engage with us



cryostat.io

Upstream resources



groups.google.com/g/cryostat-development



github.com/cryostat/cryostat

Engage with us

catalog.redhat.com/software/operators/detail/60ee049a744684587e218ef5

Red Hat resources

developers.redhat.com/search?t=cryostat

access.redhat.com/documentation/en-us/openjdk/11

Thank you

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