



Grafana & Friends

X

Python Pune

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Observability Primer



OpenTelemetry's Key Advantages

CNCF Membership

Ensures long-term
support and
stability

Community- Driven

Regular updates
from a global
community



Open Standard

Widely supported
across cloud
providers and
monitoring tools

Flexibility

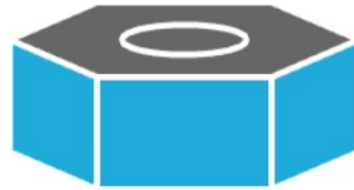
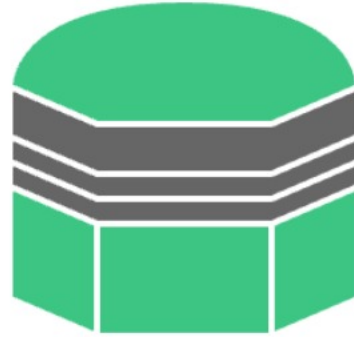
Easily export data
to various
backends



Key Attributes of OpenTelemetry

Open Standard

Widely supported across cloud providers and monitoring tools



Community-Driven

Regular updates from a global developer community

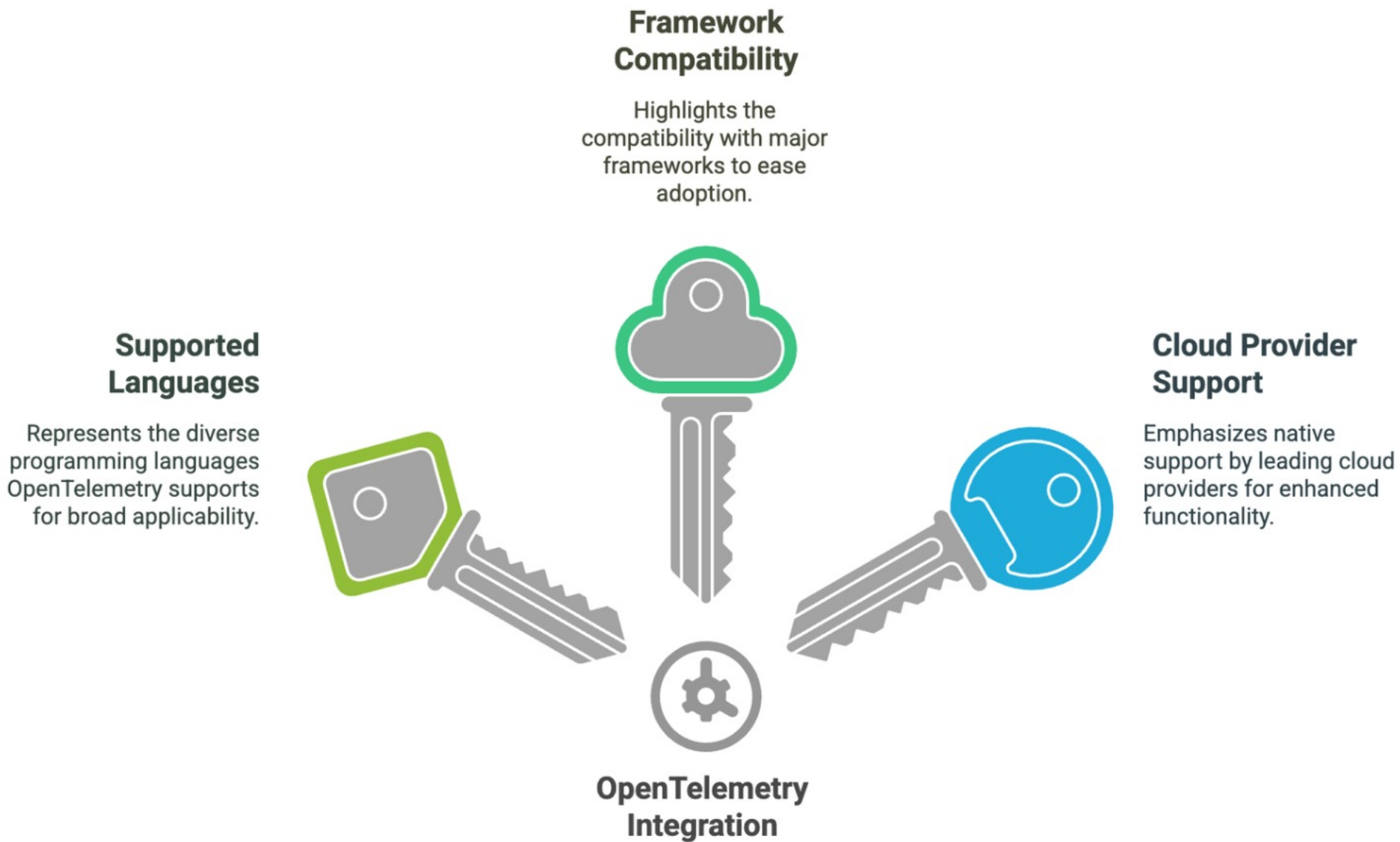


Flexibility

Easily export data to various backends



Seamless OpenTelemetry Integration Across Languages, Frameworks, and Clouds



What do you need for debugging a production incident?

Logs

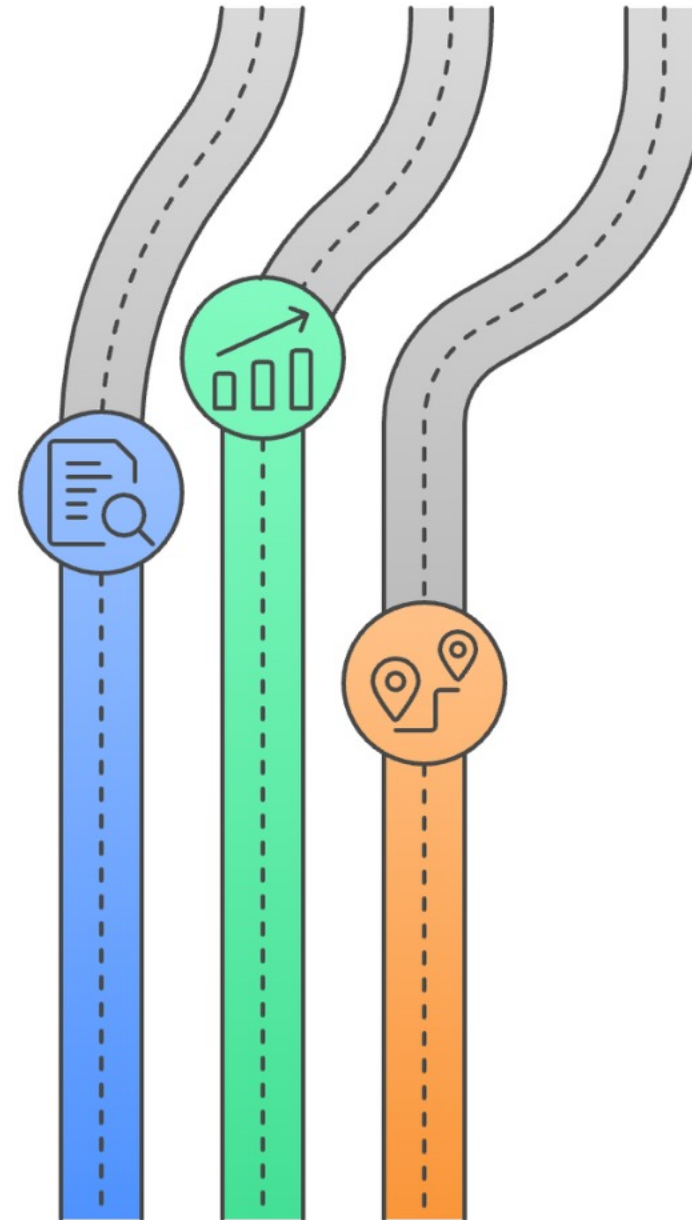
Essential for understanding the sequence of events leading to the incident.

Metrics

Provides quantitative data to assess system performance and anomalies.

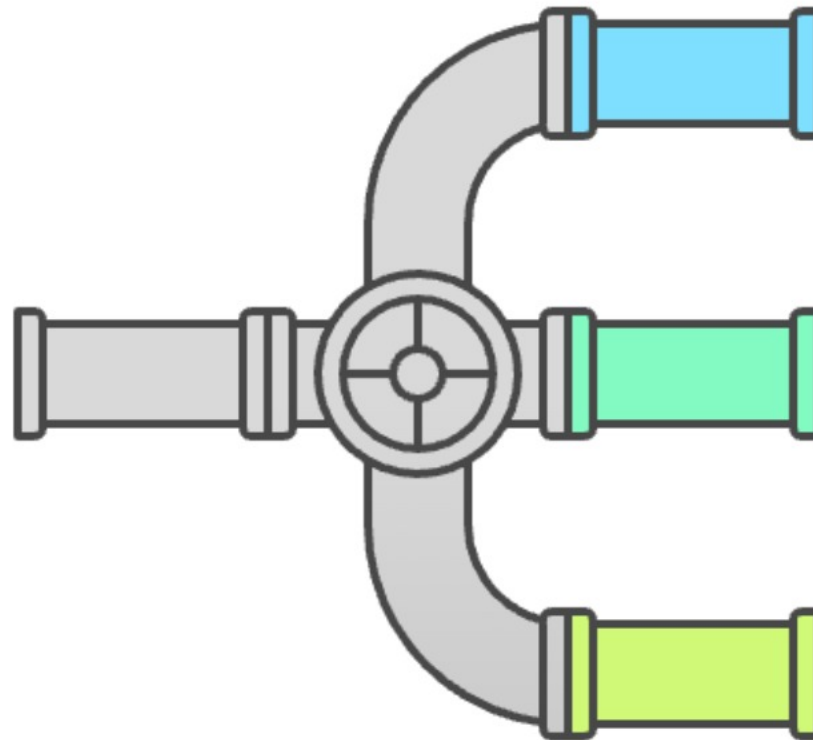
Traces

Offers detailed insights into the flow of requests through the system.



Visualizing OpenTelemetry's Key Benefits

OpenTelemetry
Benefits



Distributed Tracing

Context-Rich Logs

Real-Time Metrics

OpenTelemetry Performance Optimization

Identify Performance Bottlenecks

Trace spans show where latency occurs



Monitor Resource Utilization

Metrics reveal how code affects CPU, memory, and network usage



Proactive Optimization

Detect inefficient database queries or redundant API calls



Dual Approach to Performance Analysis

1

Automatically gather insights with minimal code changes.

Auto-Instrumentation

**Comprehensive
Performance
Insights**



2

Manually analyze critical code paths for deeper insights.

**Manual
Instrumentation**

OpenTelemetry's Impact on Team Collaboration

Cross-Team Insights

Enhances understanding and cooperation between teams



Unified Data Platform

Ensures all teams use the same data source for consistency

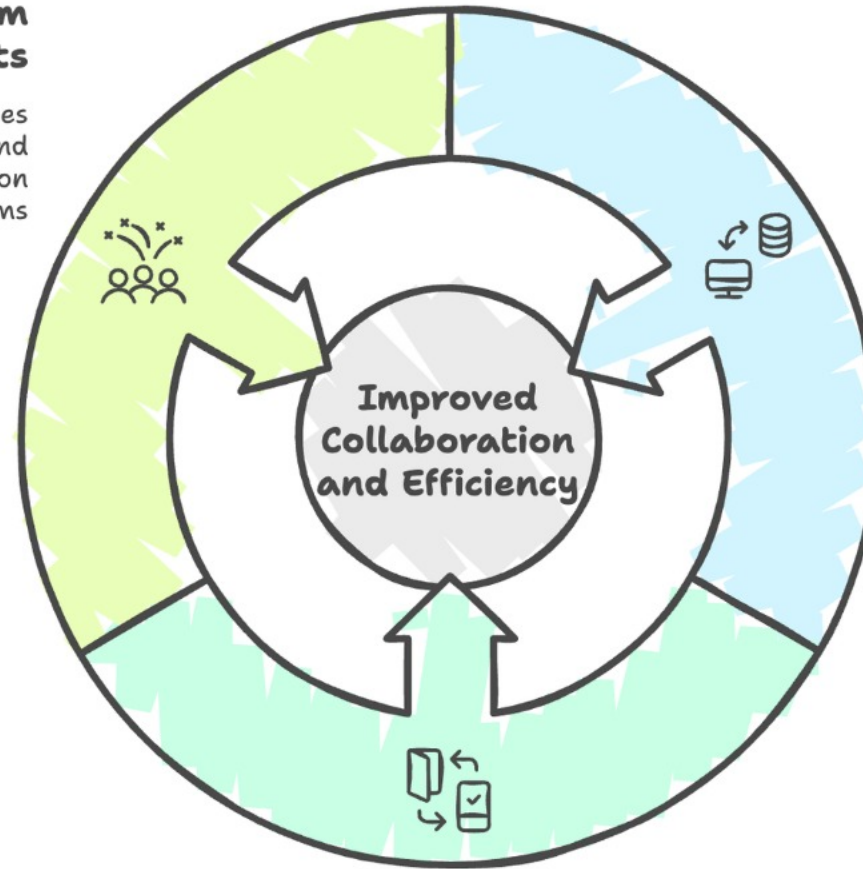


Improved Collaboration and Efficiency

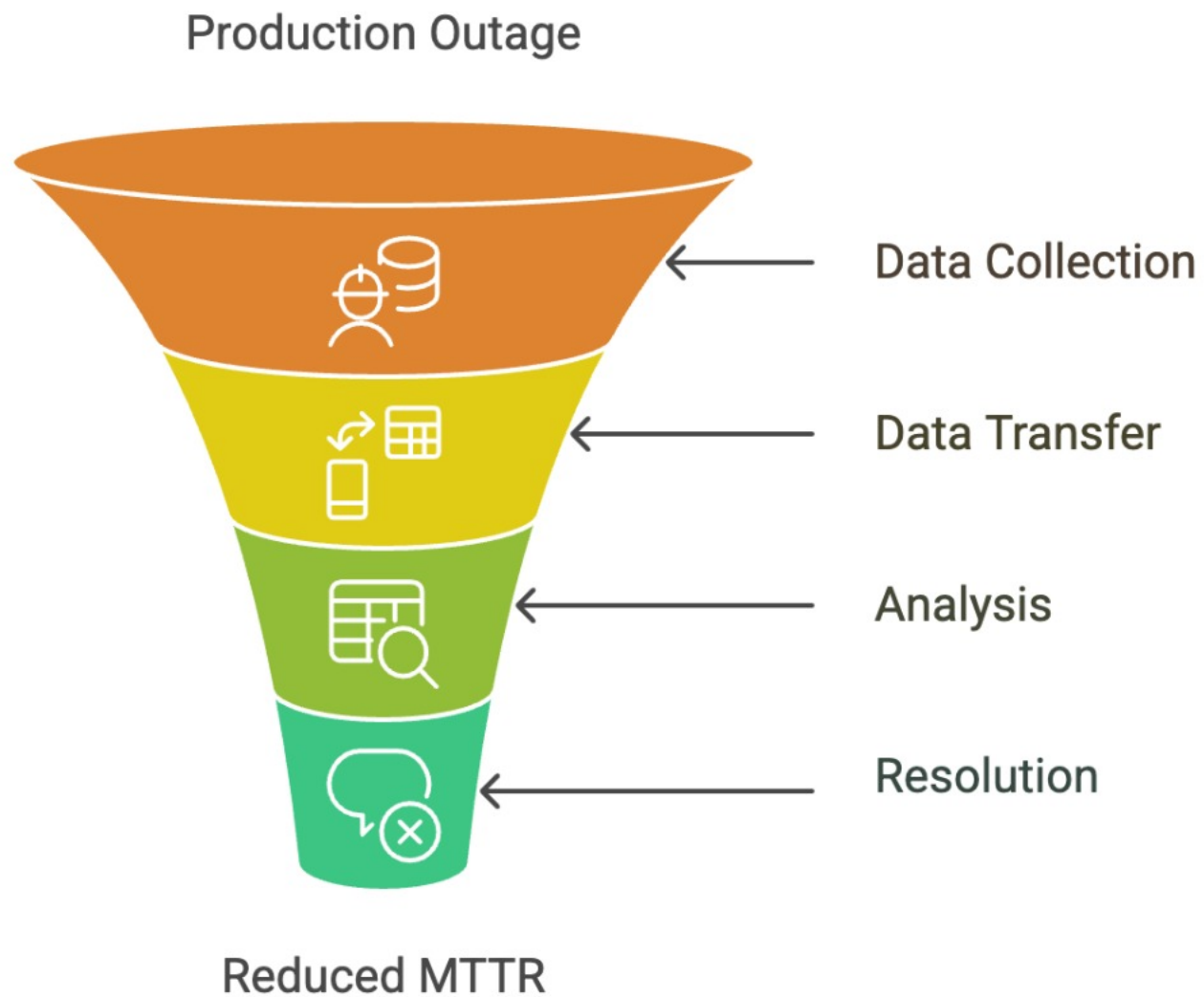


Easier Handoffs

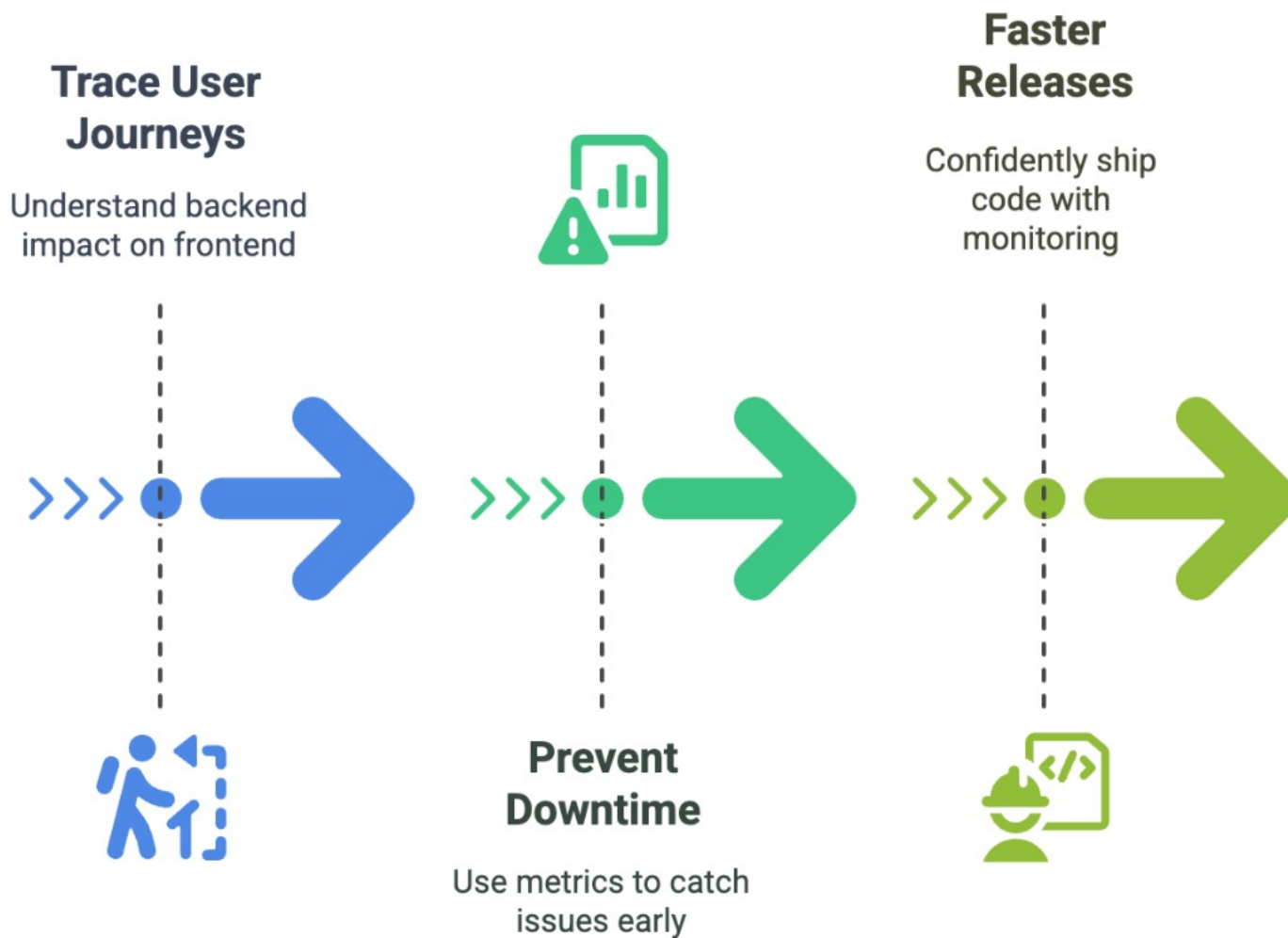
Facilitates smooth transitions between developers and Ops teams



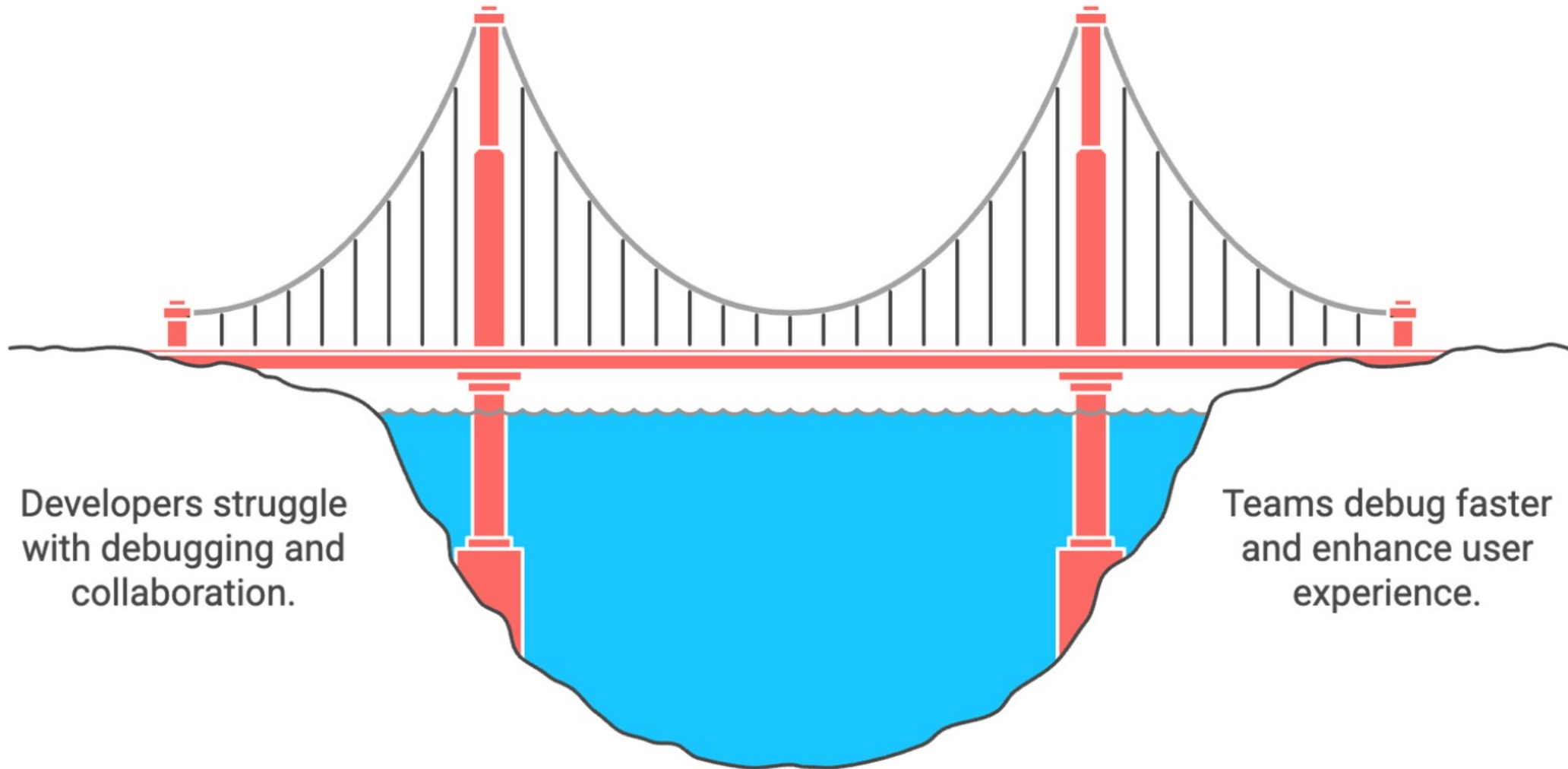
Reducing MTTR with Trace Data



Benefits of OpenTelemetry in Software Development



OpenTelemetry Enhances Developer Collaboration and Code Quality



Leveraging Observability for Career Growth and Team Success

Team Collaboration

Enhances cooperation among cross-functional teams through shared insights.



Career Advantage

Understanding observability provides a significant edge in the evolving tech landscape.



Real-Time Feedback

Provides immediate insights into code performance for timely improvements.



Resilient Code

Observability helps in building robust and reliable production-ready code.



Observability
in Modern
Development





Demo





Observability India Community

- Please subscribe to <https://www.linkedin.com/groups/9899111/>
- Observability India Bootstrap event :
<https://lu.ma/event/manage/evt-RjSUtvKNdrRy8R9/overview>





References

- OpenTelemetry Home: <https://opentelemetry.io/>
 - OpenTelemetry Instrumentation: <https://opentelemetry.io/docs/concepts/instrumentation/>
 - Python <https://opentelemetry.io/docs/languages/python/instrumentation/>
 - Python Zero Code Instrumentation : <https://opentelemetry.io/docs/zero-code/python/>
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