



SAP Cloud Application Programming Model

<https://cap.cloud.sap>

Roundtable #7

March 20th, 2024

PUBLIC

Today's hosts:



Sebastian Schmidt



**Michael
Hellenschmidt**

Agenda



Intro & re>CAP 2024 (Sebastian / Michael)	10 min
Open Telemetry Demo (Stefan Henke & Sebastian Van Syckel)	20 min
CDS Types and Typer (Christian Georgi)	15 min
Change Tracking / Audit Logging / Attachments (Daniel Schlachter)	10 min
Outlook next major release (Daniel Hutzel)	10 min
Q&A	20 min

20 { Code Connect } 24



<https://code-connect.dev/>

Code Connect brings together four exciting events - CodeJam, reCAP, UI5con, and ABAPConf - all taking place in the same week and location. This is your chance to deep dive into your chosen tech or broaden your horizon, understanding the end-to-end dev flow. Whether you're joining for just one event or the whole package, be ready to connect, collaborate, and code away with a bustling community of like-minded developers!

Save the dates and check-out the conference pages for more details



Location

SAP SE (ROT03), SAP-Allee 27,
68789 Sankt Leon-Rot,
Germany

03
June

CAP CodeJam

This SAP CodeJam event is on the topic of the SAP Cloud Application Programming Model, and specifically about service integration. You'll become acquainted with how external services can be integrated and consumed from within a CAP project. In working through this CodeJam you'll also become familiar with how the SAP Cloud SDK covers connectivity and destinations, supporting such integration scenarios with CAP.

[learn more and register](#)

04
June

re>CAP

Join the awesome developer conference all about the SAP Cloud Application Programming Model (CAP). The time of the year where our lively communities, customers, and partners meet the CAP Product Team and exchange best practices, technical concepts, current projects, ideas for the future, and way more.

[learn more](#)

05
June

UI5con

If you want to learn more about UI5, you can't miss UI5con 2024. A day of inspiration, learning, and networking with like-minded people. Inspiring talks. Endless learning.

[learn more](#)

06
June

ABAPConf 2024 Europe

The conference for ABAP developers, from ABAP developers. ABAP as we love it. Changing the deployment model, ABAPConf leaves the cloud and is now also offered as an on-premise edition.

[learn more](#)



Join the awesome developer conference all around the SAP Cloud Application Programming Model (CAP). The time of the year where our vivid communities, customers, and partners meet the CAP Product Team and exchange best practices, technical concepts, current projects, ideas for the future, and way more...

Registration will open on March 21st at 4pm CET

<https://recap-conf.dev>

<https://ti.to/code-connect/2024>

20

24

June 4

**TICKETS
AVAILABLE
SOON.**



**MORE
DAY**



<https://ti.to/code-connect/2024>

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Rizing provides services and our proprietary apps leveraging the SAP Business Technology Platform to Fortune 500 and small/medium enterprises.

Rizing was already a Platinum Sponsor of the recent two re>CAP conferences. A big THANK YOU goes out to the CTO of Rizing - Martin Stenzig - who is a very active community member and big supporter of CAP.

GOLD



GOLD



GOLD



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GOLD



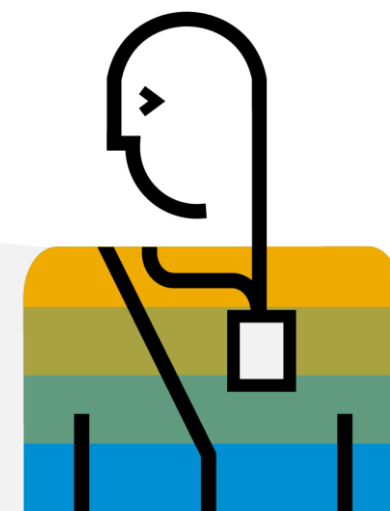
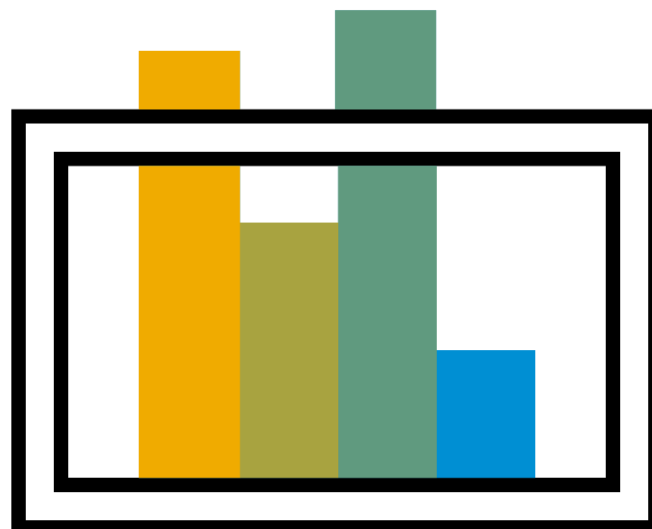
GOLD





Presentation #1

Open Telemetry Demo – Stefan Henke (for Java) & Sebastian Van Syckel (for Node)



OpenTelemetry @ CAP

What is OpenTelemetry?

OpenTelemetry, also known as OTel, is a vendor-neutral open source Observability framework for instrumenting, generating, collecting, and exporting telemetry data such as traces, metrics, and logs.¹

Which signals are supported?

- **Traces:** Analyze how a request, message, task, etc. is processed throughout your distributed system.
- **Metrics:** Measurements captured at runtime that help you understand your app's health and performance.

¹ <https://opentelemetry.io/docs/>

OpenTelemetry @ CAP Node.js

Simple enablement by adding dependency `@cap-js/telemetry`

- That is, do `npm add @cap-js/telemetry` and you get telemetry data printed to the console
- You will need to bring some other dependencies yourself depending on the backend of choice

Supported backends: [SAP Cloud Logging](#), Dynatrace

Out of the box tracing of event handling and metrics re database pool and host

Additional tracing of `@cap-js` databases (i.e., preparation and execution of statements)

Support for adding custom metrics

```
[odata] - GET /odata/v4/processor/Incidents
[telemetry] - elapsed times:
  0.00 → 2.85 = 2.85 ms GET /odata/v4/processor/Incidents
  0.47 → 1.24 = 0.76 ms ProcessorService - READ ProcessorService.Incidents
  0.78 → 1.17 = 0.38 ms db - READ ProcessorService.Incidents
  0.97 → 1.06 = 0.09 ms @cap-js/sqlite - prepare SELECT json_object('ID
  1.10 → 1.13 = 0.03 ms @cap-js/sqlite - stmt.all SELECT json_object('I
  1.27 → 1.88 = 0.61 ms ProcessorService - READ ProcessorService.Incidents.
  1.54 → 1.86 = 0.32 ms db - READ ProcessorService.Incidents.drafts
  1.74 → 1.78 = 0.04 ms @cap-js/sqlite - prepare SELECT json_object('ID
  1.81 → 1.85 = 0.04 ms @cap-js/sqlite - stmt.all SELECT json_object('I
```

OpenTelemetry @ CAP Java

Simple enablement just by configuration

- Necessary libraries inherited from SAP Java Buildpack
- Java Agent + Agent Extension

Supported backends: [SAP Cloud Logging](#), Dynatrace

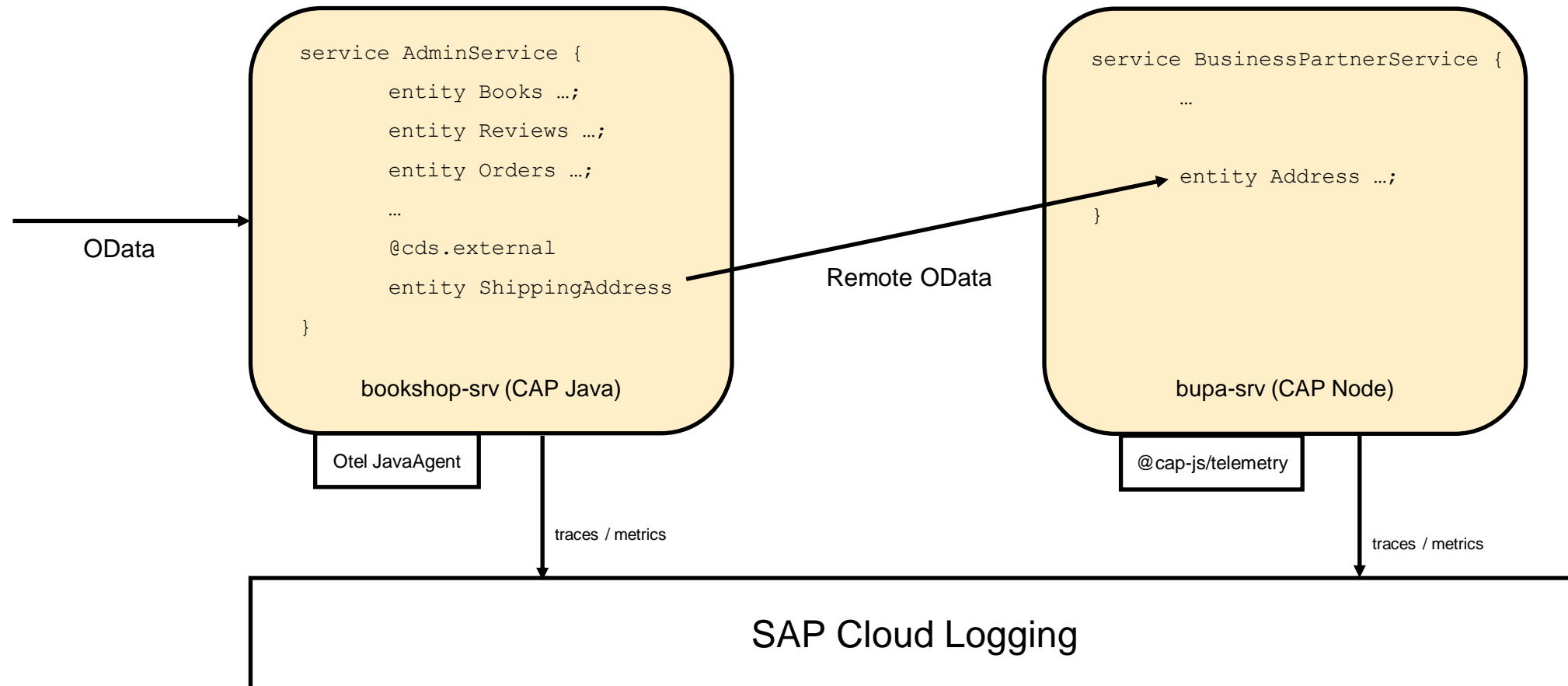
Out of the box traces and metrics for various [Java Frameworks](#)

Additional traces for [CAP-specific capabilities](#)

[Custom](#) traces and metrics from Event Handlers

```
- name: bookshop-srv-otel
  buildpacks:
    - name: sap_java_buildpack
  properties:
    JBP_CONFIG_JAVA_OPTS: "[from_environment: false, java_opts:
      '-javaagent:META-INF/.sap_java_buildpack/otel_agent/opentelemetry-javaagent.jar
      -Dotel.javaagent.extensions=BOOT-INF/lib/cf-java-logging-support-opentelemetry-agent-extension.jar']"
    OTEL_METRICS_EXPORTER: cloud-logging
    OTEL_TRACES_EXPORTER: cloud-logging
    SP_WORKING_FILES_ACTIVE: true
  build-result: target/*-exec.jar
  requires:
    - name: bookshop-cloud-logging
```

Bookshop Demo Scenario

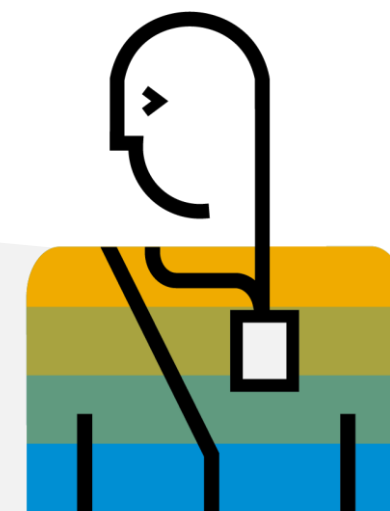
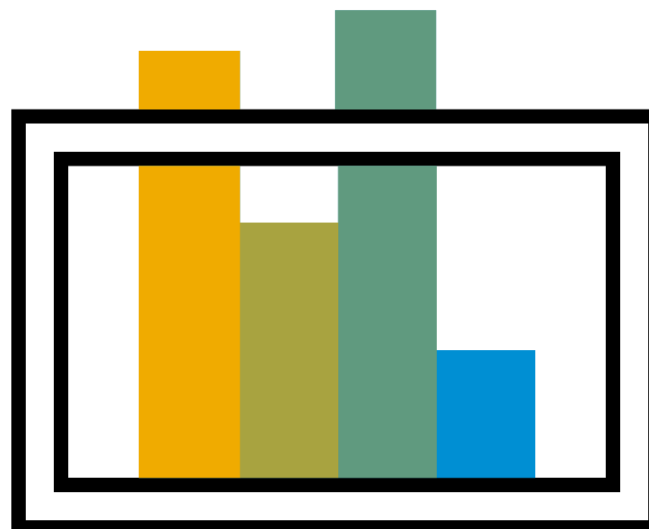


<https://github.com/SAP-samples/cloud-cap-samples-java>



Presentation #2

CDS Types and Typer – Christian Georgi



Typed access to CDS models with cds-typer

Generates types according to your CDS models

For both JS and TS projects

Integrated in VS Code

Goes hand in hand with API types (“cds-types”)

It's [open source](#)!

- Continuously improved w/ help of community
- Feedback through [cds-typer/issues](#)
- For contribution opportunities, see [good-first-issue](#) label

```
class CatalogService extends cds.ApplicationService { init() {
  const { Book } = require('#cds-models/sap/capire/bookshop')

  this.before('CREATE', Book, req => {
    req.data... // known to be a Book. Code completion suggests:
                // ID (number)
                // title (string)
                // author (Author)
                // createdAt (Date)
                // ...
  })
}}
```

Typed CDS APIs through cds-types

API types for @sap/cds

Initial goal: code completion in JS projects

Nowadays used by more and more TypeScript projects

→ We are about to renovate the types to make them more accurate for TS projects

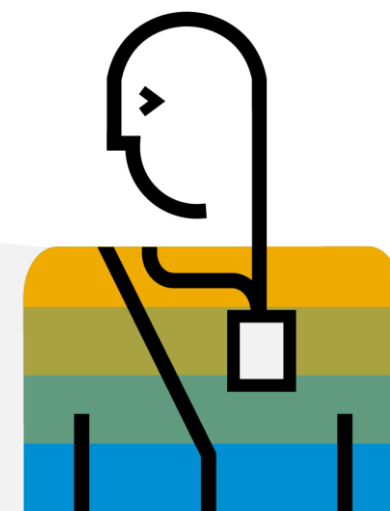
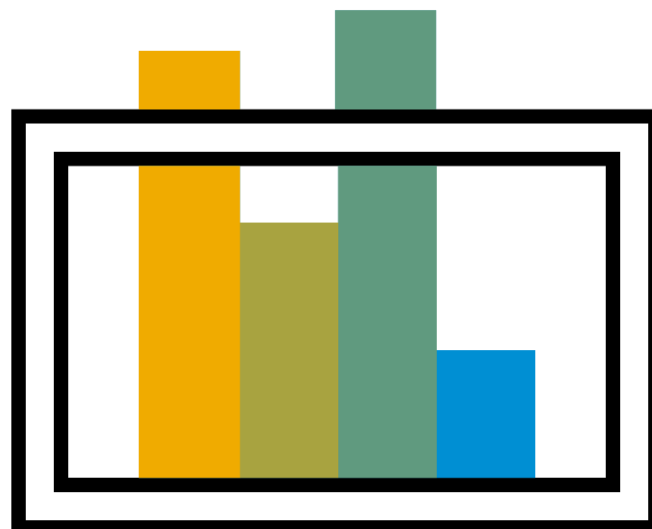
It's [open source](#)! Feedback through [cds-types/issues](#)

```
const cds = require('@sap/cds')  
  
You, 1 minute ago | 4 authors (Daniel Hutzel and others)  
✓ module.exports = class CatalogService {  
  
cds. You, 1 minute ago • Uncommitted  
  ApplicationService  
  Association  
  Composition  
  DatabaseService  
  Event  
  EventContext  
  MessagingService  
  Privileged  
  QueryAPI  
  RemoteService  
  Request  
  Service  
  
this.on('submitOrder', async req => {  
  req.data  
  let data  
  entity  
  // ✓ error  
  if (event  
  if (features?  
  if (headers  
  http?  
  // R id  
  await info
```



Presentation #3

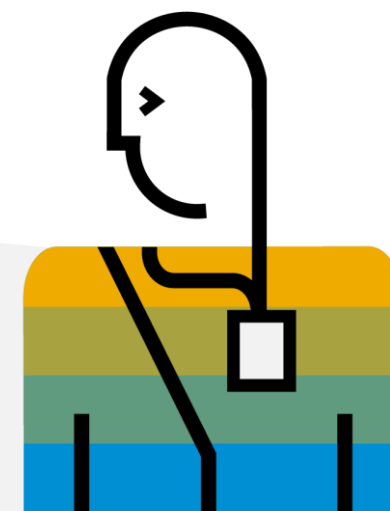
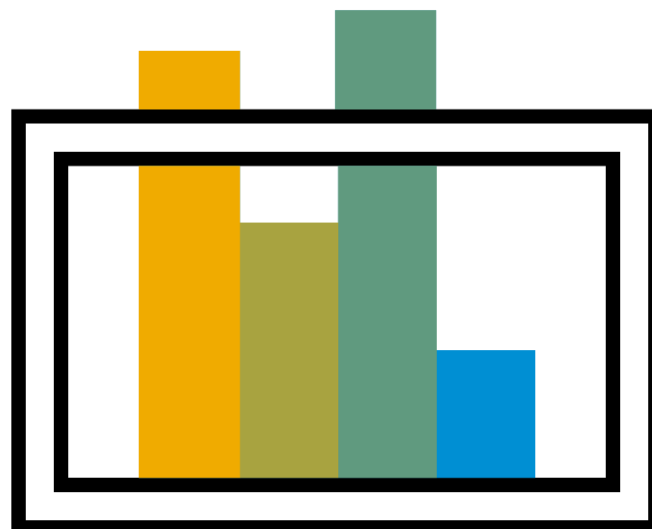
Change Tracking / Audit Logging / Attachments – Daniel Schlachter





Presentation #4

Outlook next Major – Daniel Hutzel





Q&A



Thank you.

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