

NOW / NEXT

Building CDS Hooks Services

Dennis Patterson

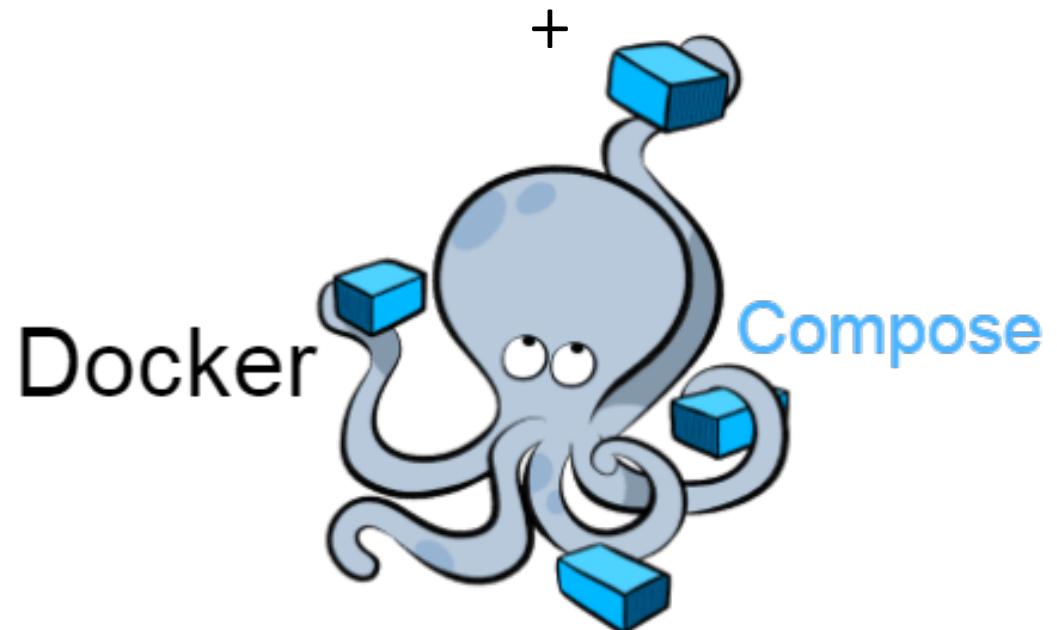
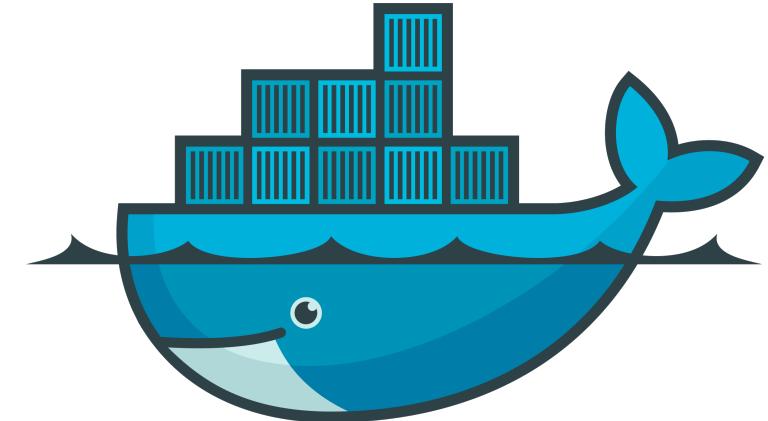
Lead Software Engineer, Cerner

Prerequisites

- Git + GitHub Account
- And *Either*:



OR



Refer to Cheat Sheet!

Linked on Navigation
Sidebar @ cds-hooks.org

The screenshot displays the CDS Hooks cheat sheet with the following sections:

- CDS HOOKS**: The main title and logo.
- Overview**: A flowchart showing the interaction between an EHR (Toprol XL R 50 mg daily) triggering a CDS hook, which invokes a remote service (CDS Services). The CDS service executes its logic, leveraging FHIR data as needed, and returns CDS cards (rendered and displayed by EHR).
- Links**: Provides links to the specification ([Spec](https://cds-hooks.hl7.org/1.0/)), sandbox ([Sandbox](http://sandbox.cds-hooks.org/)), and quick start ([Quick Start](https://cds-hooks.org/quickstart/)).
- CDS Service Response Body**: A detailed JSON schema for the CDS Service Response Body, including fields for services, hook, title, description, id, prefetch, and context.
- CDS Service Discovery - GET {baseUrl}/cds-services**: A detailed JSON schema for the Response Body of the CDS Service Discovery endpoint, showing an array of CDS Services.
- CDS Service Request - POST {baseUrl}/cds-services/{id}**: A detailed JSON schema for the Request Body of the CDS Service Request endpoint, including fields for hook, hookinstance, fhirServer, fhirAuthorization, context, and FHIR Authorization.
- SUMMARY**: A summary of the CDS Hooks specification, including requirements for cards, links, and suggestions.
- Card**: Describes the structure of a card, including summary, details, indicator, source, suggestions, selectionBehavior, and links.
- Source**: Describes the source of information, including label, url, and icon.
- Suggestion**: Describes a suggestion, including label, uid, actions, type, url, and applicationContext.
- Action**: Describes an action, including type, description, and resource.
- Link**: Describes a link, including label, url, type, and applicationContext.
- Cards**: A detailed JSON schema for a card, including summary, details, indicator, source, suggestions, and links.

Visit <https://cds-hooks.org/> for details.

Overview

- Clone tutorial repo
- Tour the code
- Test via the Sandbox
- Enhance!
- Next steps

The screenshot shows a GitHub repository page for 'cerner / cds-services-tutorial'. The page has a light gray header with the repository name 'cerner / cds-services-tutorial'. Below the header is a navigation bar with links for 'Code', 'Issues 0', 'Pull requests 0', 'Wiki' (which is highlighted in orange), 'Security', 'Insights', and 'Settings'. To the right of the navigation bar are buttons for 'Unwatch 22', 'Star 10', 'Fork 11', 'Edit', and 'New Page'. The main content area is titled 'Home' and contains a brief description of CDS Hooks: 'Clinical Decision Support (CDS) Hooks is a specification that enables integration of remote decision support within a clinician's EHR workflow through a "hook"-based pattern. See more [here](#)'. Below this, there is a section titled 'Project Setup' with a link to '1. Home' and another section titled 'Walkthrough' with a link to '2. Cross Origin Resource Sharing (CORS)'. On the left side of the main content, there is a sidebar with a 'Pages 10' button.

cerner / cds-services-tutorial

Code Issues 0 Pull requests 0 Wiki Security Insights Settings

Unwatch 22 Star 10 Fork 11

Edit New Page

Home

Dennis Patterson edited this page 14 days ago · 18 revisions

Clinical Decision Support (CDS) Hooks is a specification that enables integration of remote decision support within a clinician's EHR workflow through a "hook"-based pattern. See more [here](#).

This tutorial will help walk you through setting up real CDS Services and acting as the 3rd party providing decision support to an EHR system.

After completing this tutorial, you should be able to:

- Understand the exchange between the EHR and 3rd party CDS Services
- Stand up local CDS Services that can integrate with the CDS Hooks Sandbox
- See how FHIR and SMART work within CDS Hooks

Pages 10

Project Setup

1. Home

Walkthrough

2. Cross Origin Resource Sharing (CORS)

github.com/cerner/cds-services-tutorial

Beyond localhost



Find a home for your services



Protect your endpoint

Resiliency



Validate requests to your services



Handle the unexpected

Follow Documented Best Practices

 CDS Hooks

 Search

 GitHub
75 Stars · 27 Forks

CDS Hooks

- Overview
- Specification ▾
- Hooks ▾
- Quick Start
- Best Practices**
- Examples
- Community
- Logo Use

Implementation Best Practices

This page serves as best practice guidance for CDS Hooks implementers. The best practices outlined here are not mandatory implementation rules; rather, they are suggested guidance. This is a living, in progress document and the best practices outlined here should not be considered absolute or complete.

Security

The CDS Hooks security model requires thought and consideration from implementers. Security topics are never binary, are often complex, and robust implementations should factor in concepts such as risk and usability. Implementers should approach their security related development with thoughtful care.

The CDS Hooks specifications already provides some guidance in this space. The information here is supplemental to the existing specification documentation.

The CDS Hooks security model leverages several existing RFCs. These should be read and fully understood by all implementers.

- [rfc7519: JSON Web Tokens \(JWT\)](#)
- [rfc7517: JSON Web Key \(JWK\)](#)

Table of contents

- Security
- CDS Clients
- CDS Services
- JWT
- FHIR Access

Contribute

 [cds-hooks / docs](#)

 Unwatch ▾

40

 Unstar

75

 Fork

27

 Code

 Issues 64

 Pull requests 7

 Projects 0

 Wiki

 Security

 Insights

CDS Hooks website & specification <http://cds-hooks.org>

interoperability

fhir

cds

clinical-decision-support

smart-on-fhir

 985 con

 [cds-hooks / sandbox](#)

 Unwatch ▾

10

 ★

Branch: master ▾

 Code

 Issues 13

 Pull requests 2

 Projects 0

 Wiki

 Security

 Insights

CDS Hooks Sandbox <http://sandbox.cds-hooks.org>

 281 commits

 3 branches

 0 releases

 37 environments

 12 contributors

Branch: master ▾

New pull request

Create new file

Upload files

Fin

Get Involved



ZULIP

Log in Sign up

Log in to Zulip



fhir

<https://chat.fhir.org>

FHIR is a platform specification that defines a set of capabilities used across the healthcare process.

- Sign in here to chat with the FHIR community.
- Before joining, please read and make sure you can follow the [chat.fhir.org community expectations](#)

Email

 1

Password

 1

Log in

OR



Log in with Google



Log in with GitHub

[Forgot your password?](#)

[Sign up](#)

Thanks!