DIBBs eCR Viewer

NBS Integration Guide

Release 6.0.16.2-GA

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Prepared by: U.S. Centers for Disease Control and Prevention

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Version History

Version	Author	Reviewed By	Revision Date	Revision Notes
1.0	Emma Stephenson	Matt Goldberg, Mary Yeh	10/29/2024	Draft document created in support of 6.0.16.2 beta release
2.0	Emma Stephenson	Rebecca Fisher, Angela Dunn	11/14/2024	Revisions to support the 6.0.16.2 GA release
3.0	Emma Stephenson	Michael Wodajo	12/3/2024	Final revision for 6.0.16.2 GA release

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1 Overview

This document provides information about how the DIBBs eCR Viewer works with NBS release 6.0.16.2. It will guide you through how each software package works, how they work together, and what you can expect at the end of installation.

You may also find the Customer Support Guide and eCR Viewer User Guide relevant – both of these have also been published to NBS Central.

2 How the eCR Viewer Works

The DIBBs eCR Viewer is a tool that aims to make it easier for public health staff to find relevant information in eCR documents. It combines both the eICR and RR records into a single view and highlights relevant lab or clinical information for conditions present in the eCR.

The eCR Viewer processes incoming eCR data through a pipeline of Data Integration Building Blocks (DIBBs), modular software that transform and standardize the eCR records to a standard FHIR-based format. The following DIBBs are required:

- Orchestration
  - Enables coordinated execution of DIBBs in any order, allowing for fully automated workflows
- FHIR Converter
  - Converts incoming messages into the FHIR-based format, which allows the eCR Viewer to have one standard format it follows, rather than the many different implementations of CDA that eCRs arrive in
- Ingestion
  - Standardizes data fields (including record name, date of birth, phone number, and geolocation) based on preset defaults to ensure consistency
  - Enriches data by providing precise geographic locations based on patient street addresses from input data
- Trigger Code Reference
  - “Stamps” FHIR bundle resources with their associated condition and uses these stamped resources for the “associated labs and clinical information” feature in the eCR Summary
  - Leverages the CSTE-provided eRSD dataset, which maps clinical codes (LOINC, ICD-10) to their SNOMED condition codes
- eCR Viewer
  - Renders the eCR Viewer from FHIR bundles and also handles data storage

Once eCR data has passed through the DIBBs pipeline, it is saved to blob storage (either AWS S3 or Azure Blob Storage, depending on your cloud provider).

The eCR Viewer itself is a simple web application. When the Viewer receives an API request with the eICR document ID in the URL, it will fetch and render the data in your browser if the associated eCR is present in blob

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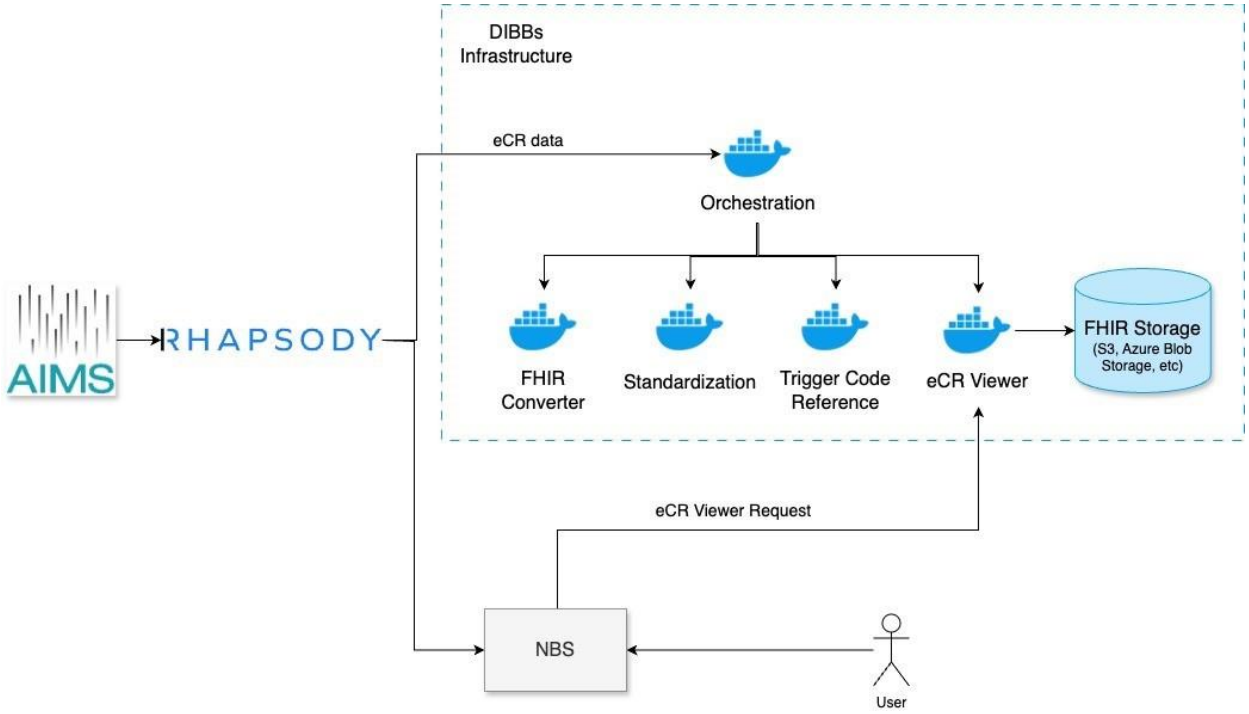
storage. For complete information about the features available in the eCR Viewer, see the eCR Viewer User Guide.

3 How the Viewer Integrates with NBS

The eCR Viewer **does not** have an effect on data ingestion into NBS. The Viewer processes a separate copy of eCR data and stores that data separately from NBS's data storage. This separation between NBS and the eCR Viewer ensures that case investigators and others referencing eCR data directly in NBS always have a source of truth for the eCR in NBS.



Architecture diagram with a high-level overview of the eCR Viewer integration with NBS.

The eCR Viewer is activated from the existing eCR document view in NBS, using the "View eICR Document" button. This will open a separate window with the DIBBs eCR Viewer.

3.1 Authentication

The eCR Viewer authenticates directly with NBS, rather than having its own authentication and user login mechanism. Using a public/private key, NBS generates a JSON Web Token (JWT) that is sent with every eCR Viewer request. The eCR Viewer, in turn, will only accept requests that include a JWT. This authentication is one-time-use, so users will not be able to see different eCRs by modifying the URL of the eCR Viewer.

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4 Installing the eCR Viewer

You'll need three things to get the eCR Viewer integration with NBS working:

1. The DIBBs installation
2. eCRs flowing to the DIBBs pipeline
3. NBS 6.0.16.2 release

4.1 DIBBs Installation

The DIBBs pipeline, eCR Viewer, and data storage must be installed within your public health department. The team has created two potential deployments to support this — one for Azure and one for AWS. More installation options are coming soon. If Azure or AWS won't work for your jurisdiction, please reach out to the team at dibbs@cdc.gov.

You'll likely need to work with your cloud hosting team to get this infrastructure approved and running within your jurisdiction. If you have any issues or questions with this approach, or if your cloud team does, please reach out, we're happy to help.

4.1.1 AWS Release

Our AWS release is available at CDCgov/dibbs-aws. This repository contains Terraform release materials that will set up DIBBs in your AWS environment. Follow the instructions in the readme file or reach out directly to the DIBBs team for help with installation.

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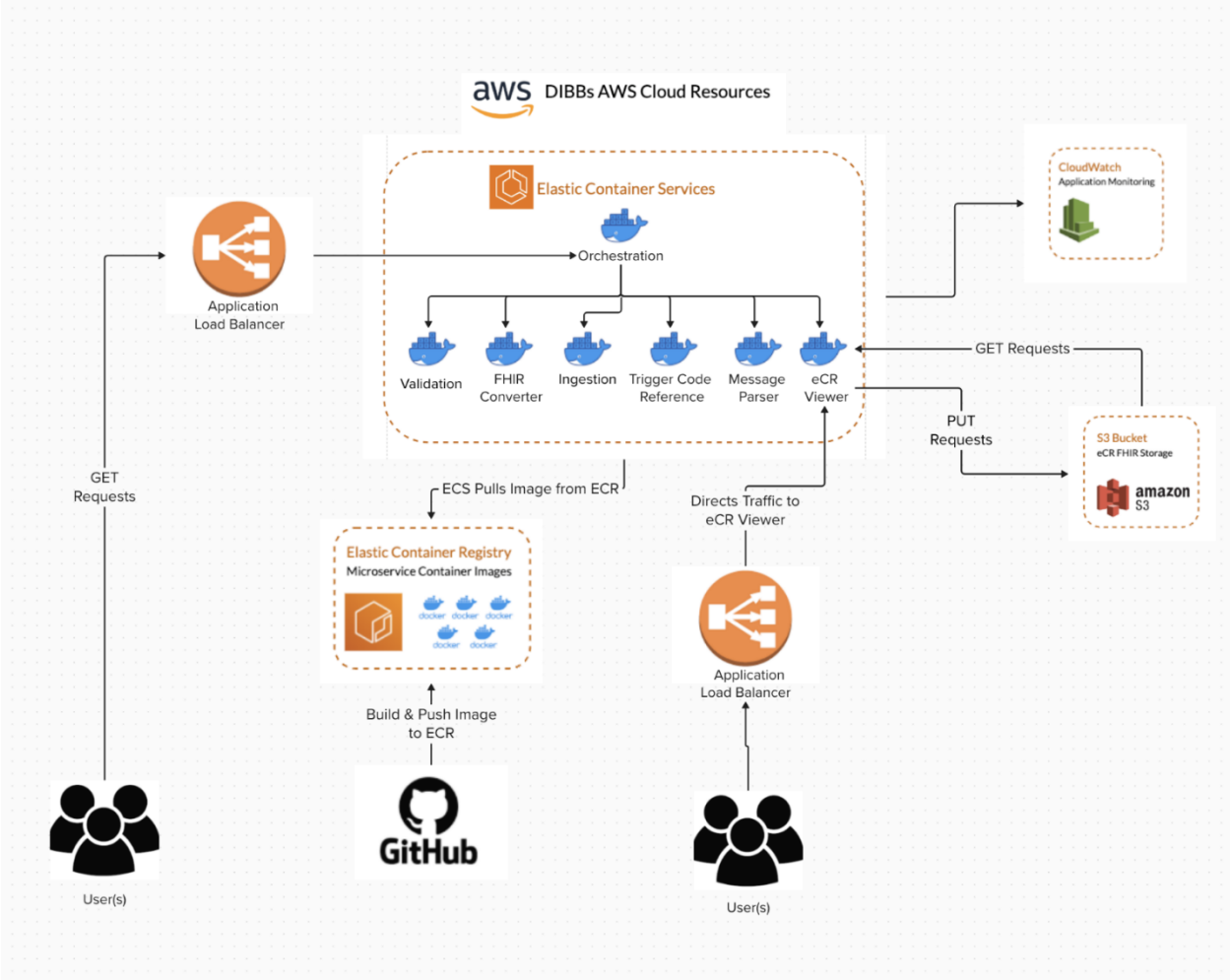
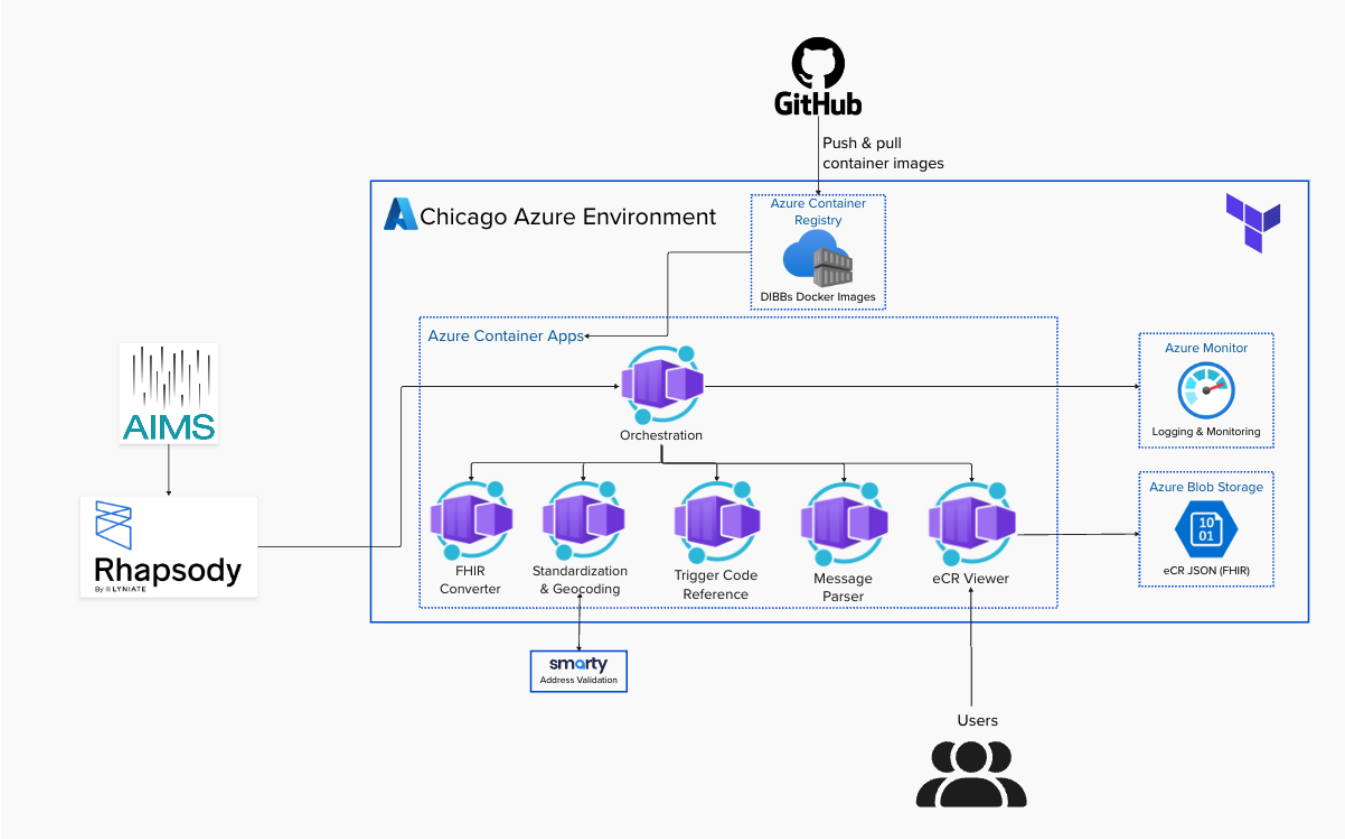


The DIBBs pipeline is hosted within an Elastic Container Service instance, and the images are hosted within an Elastic Container Registry. S3 is used for blob storage.

4.1.2 Azure Terraform Release

Our Azure release is available at CDCgov/dibbs-azure. This repository contains Terraform release materials that will set up DIBBs in your Azure environment. Follow the instructions in the readme file or reach out directly to the DIBBs team for help with installation.



For Azure, the DIBBs are hosted within an Azure Container App service, and the images are hosted within Azure Container Registry. Azure Blob Storage is used for blob storage.

4.1.3 Testing the DIBBs Installation

Once you have the DIBBs infrastructure up and running, you can use the DIBBs technical testing guides to ensure everything has been configured correctly. These are published with this release on NBS Central.

4.2 Sending eCR Data to DIBBs

Once you've verified that the DIBBs infrastructure is installed correctly, you need to begin sending eCRs through the DIBBs pipeline. The NBS integration will only work if the eCR Viewer is also processing eCRs.

To begin processing eCRs through the DIBBs pipeline, you'll likely need to alter your Rhapsody route to make a simple REST API call to the DIBBs Orchestration service. See a sample API request here: process-zip.

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If you're running Rhapsody 7.0 and up, there should be a built-in API module you can use to make this request. If you're running an earlier version of Rhapsody, the DIBBs team will work directly with you to make sure eCRs are processed by the DIBBs pipeline.

The DIBBs pipeline requires the original zip files sent from AIMs, which includes both the eICR and RR XML files. It's up to each jurisdiction to determine where the appropriate place to trigger the DIBBs pipeline is, but our recommendation is to send any eCRs that are going to NBS to the DIBBs pipeline as well.

4.3 NBS Installation

The eCR Viewer is supported by NBS release 6.0.16.2. The NBS 6.0.16.2 Release Notes will give more detailed information about how to set the configurations required to run the eCR Viewer.

5 Support

If you encounter any issues during installation, please reach out to the DIBBs team directly at dibbs@cdc.gov. You can also reference the Customer Support Guide on NBS Central.

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