AWS re:Invent

NOV. 29 – DEC. 3, 2021 | LAS VEGAS, NV

HLC307

Using Fast Healthcare Interoperability Resources (FHIR) on AWS

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Agenda

AWS for healthcare

Interoperability drivers in healthcare

Quick overview of FHIR

FHIR Works on AWS

Amazon HealthLake

FHIR Works and HealthLake use cases

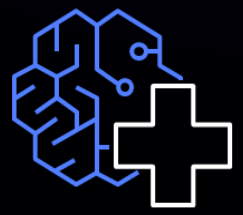
Workshop

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AWS for healthcare



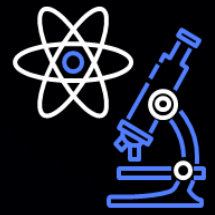
Clinical information systems



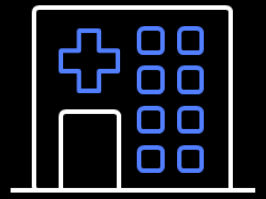
Analytics and AI/ML



Patient and clinician experience



Medical research



Finance and operations



Core health IT

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Drivers for interoperability

Industry trends

- Population health
- Digital health
- Precision medicine
- Coordination of care
- Reduction of waste
- Event-driven healthcare systems

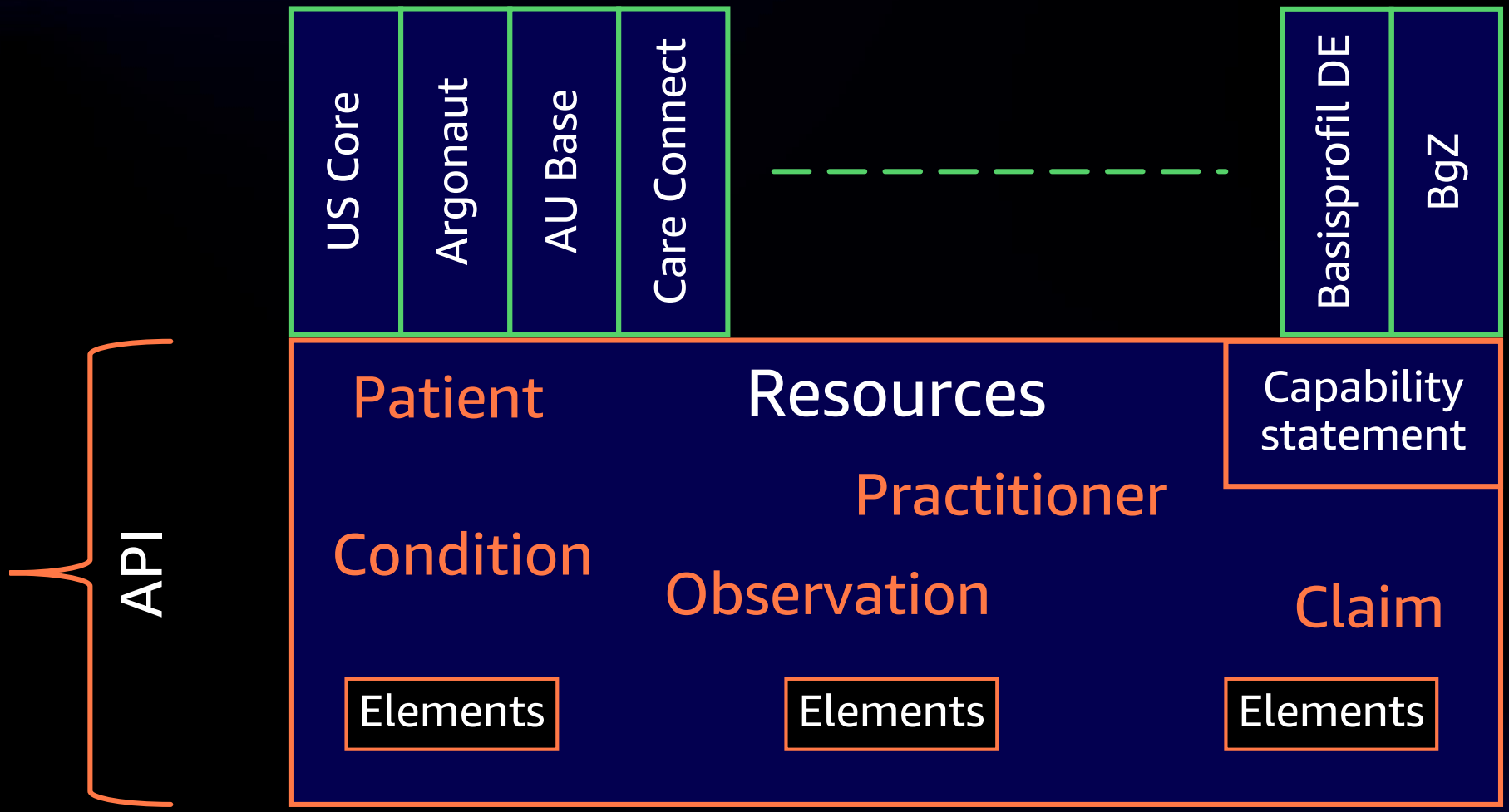
Regulatory and governmental initiatives

USA	21st Century Cures Act, with ONC / CMS Final Rule mandates
UK	Establishment of integrated care systems, with Care Connect and UK Core
EU	Digital Single Market to include broader range of healthcare data
France	Industry consultation on use of HL7 FHIR
India	Digital health initiative implementing e-health policy with interoperability
Australia	National Digital Health Strategy – comprehensive interoperability by 2022

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HL7 FHIR: A quick overview

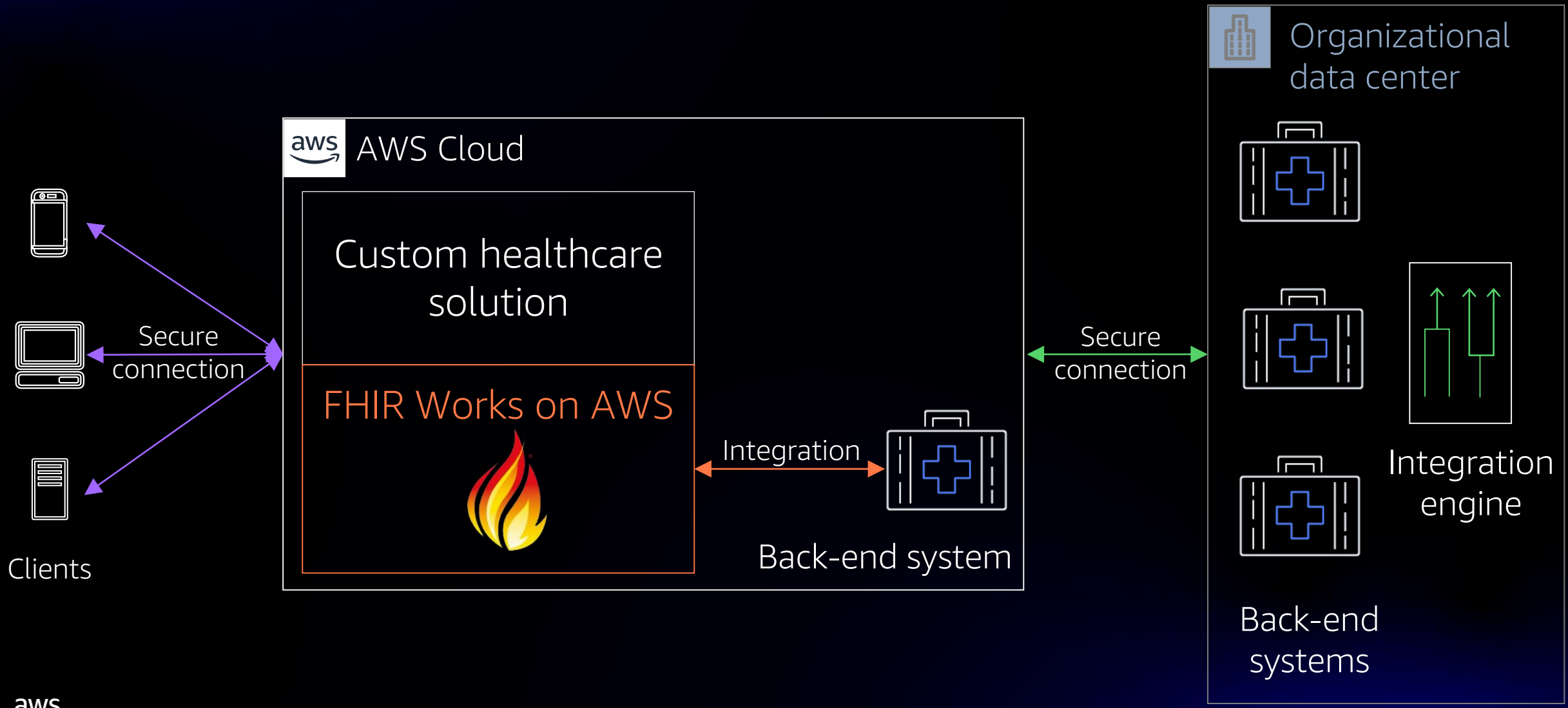
DRAWING ON THE BEST OF PREVIOUS STANDARDS



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FHIR Works on AWS: Where it fits

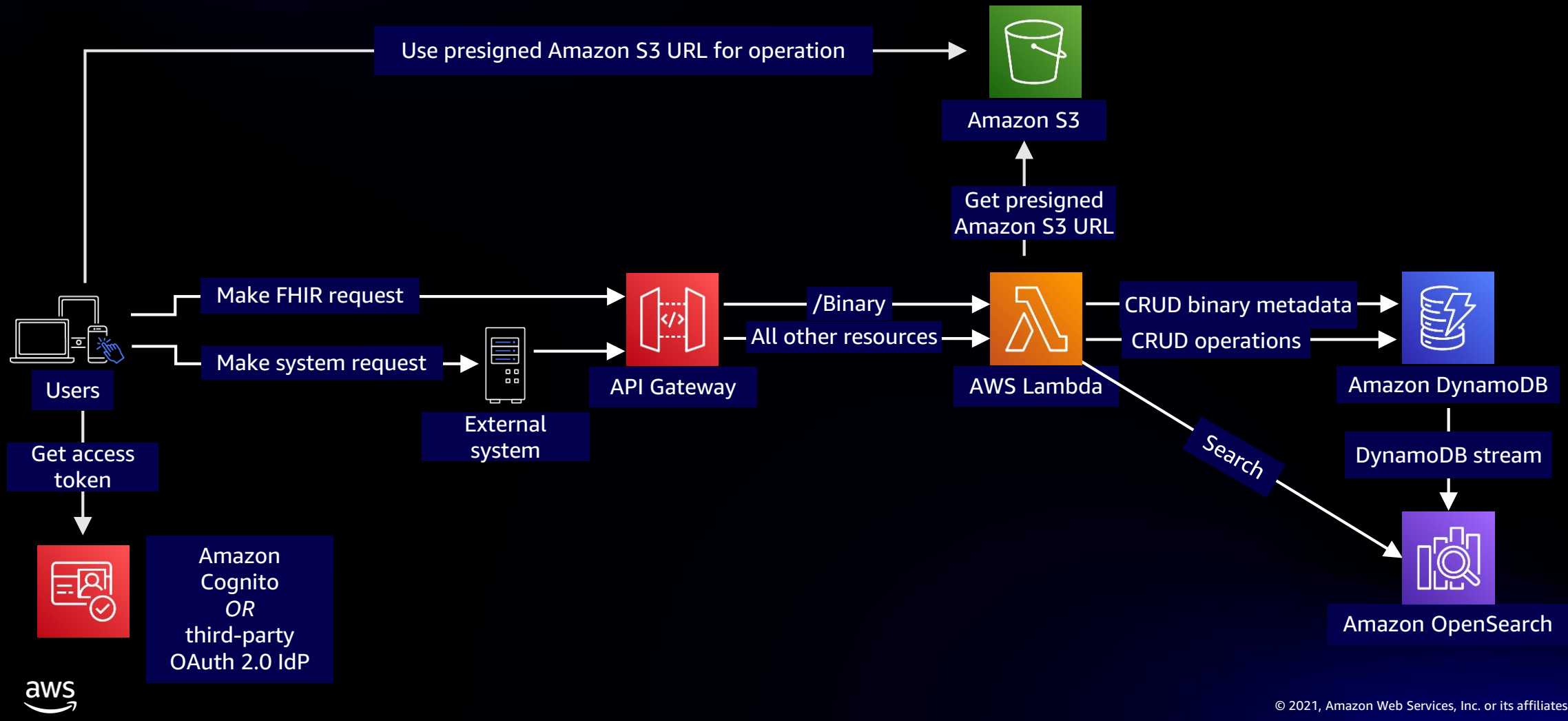
ITS PLACE IN THE HEALTH TECHNOLOGY ECOSYSTEM



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Technical architecture

REFERENCE GITHUB DEPLOYMENT: STANDARD FHIR SERVER



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Amazon HealthLake

A HIPAA-eligible service that enables healthcare providers, health insurance companies, and pharmaceutical companies to securely store, transform, query, and analyze health data at petabyte scale



Import

Quickly and easily import medical records including clinical notes, lab reports, and more



Store

Stored in the AWS Cloud in a secure, compliant, and auditable way



Transform

Tag and index unstructured data using specialized ML models



Query and search

Powerful query and search capabilities to ask questions of the data



Analyze

Understand relationships in the data with integrated analytics and ML capabilities

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Making sense of health data

See how you can benefit from Amazon HealthLake



Easily extract meaning from health data

Built-in natural language processing (NLP) to automatically extract meaning from unstructured data such as prescriptions, procedures, and diagnoses in minutes. You can then easily search and query the data



Analyze data and make predictions

Build machine-learning models with Amazon SageMaker and apply Amazon QuickSight analytics to analyze and understand relationships, identify trends, and make predictions with health data



Support interoperability standards

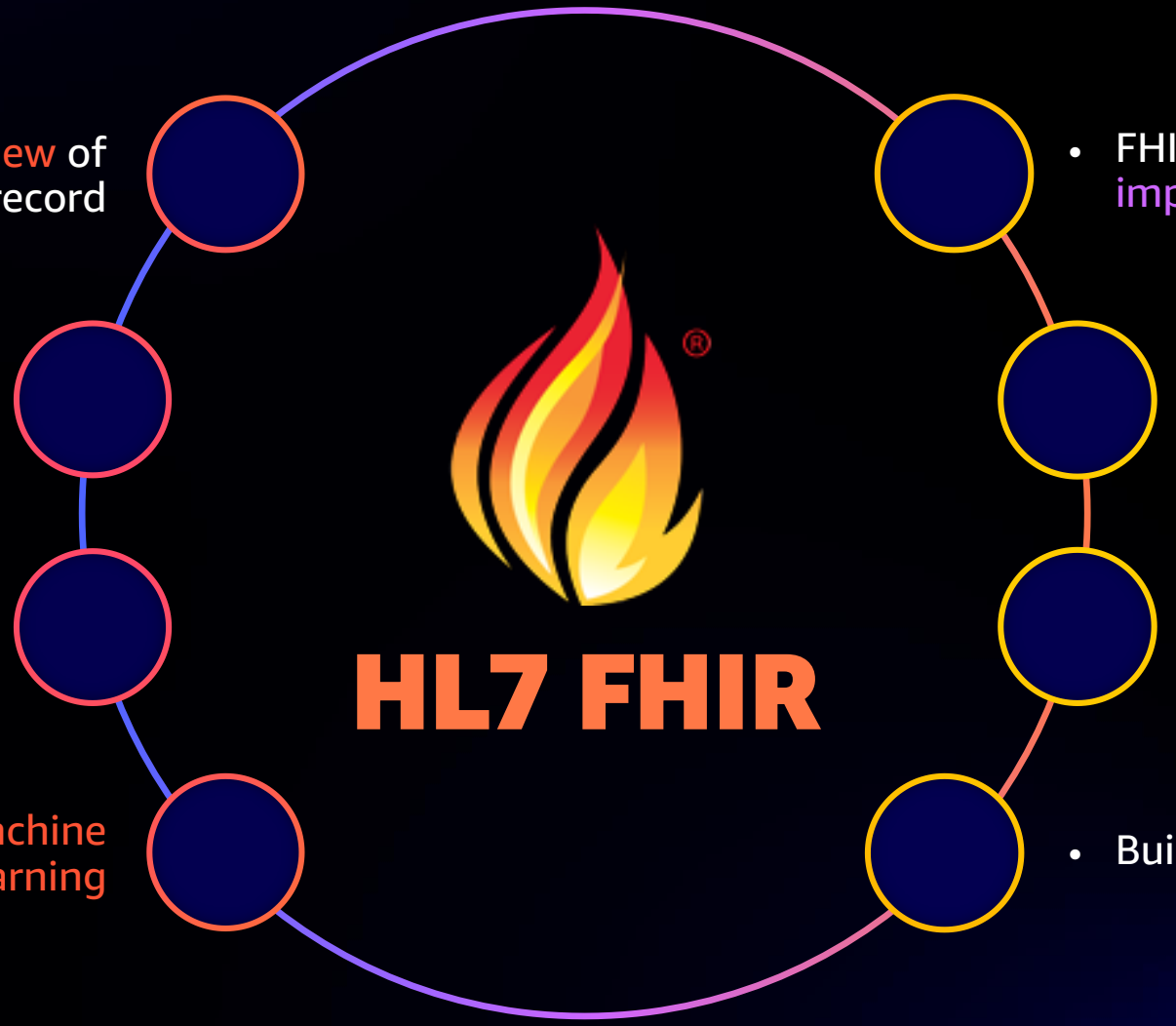
Create a complete view of each patient's medical history and structure it in the FHIR standard format to facilitate the exchange of information across multiple applications

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HealthLake and FHIR Works on AWS: Where to use

- Longitudinal view of health record
- Natural language processing of text data
- Data visualization
- Analytics and machine learning



- FHIR localization with implementation guides
- SMART on FHIR authorization
- FHIR-enable existing products
- Build custom products

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Workshop overview: How it will work

- Designed to be run in AWS Cloud9, a cloud-based integrated development environment (IDE)
- Run in a browser so nothing installed on your machine
- Consistent starting point makes dependencies easier to handle
- Step-by-step instructions with screenshots provided in the workshop guide

Tip: Use the Copy button to lessen whitespace issues

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Workshop overview

FHIR Works on AWS

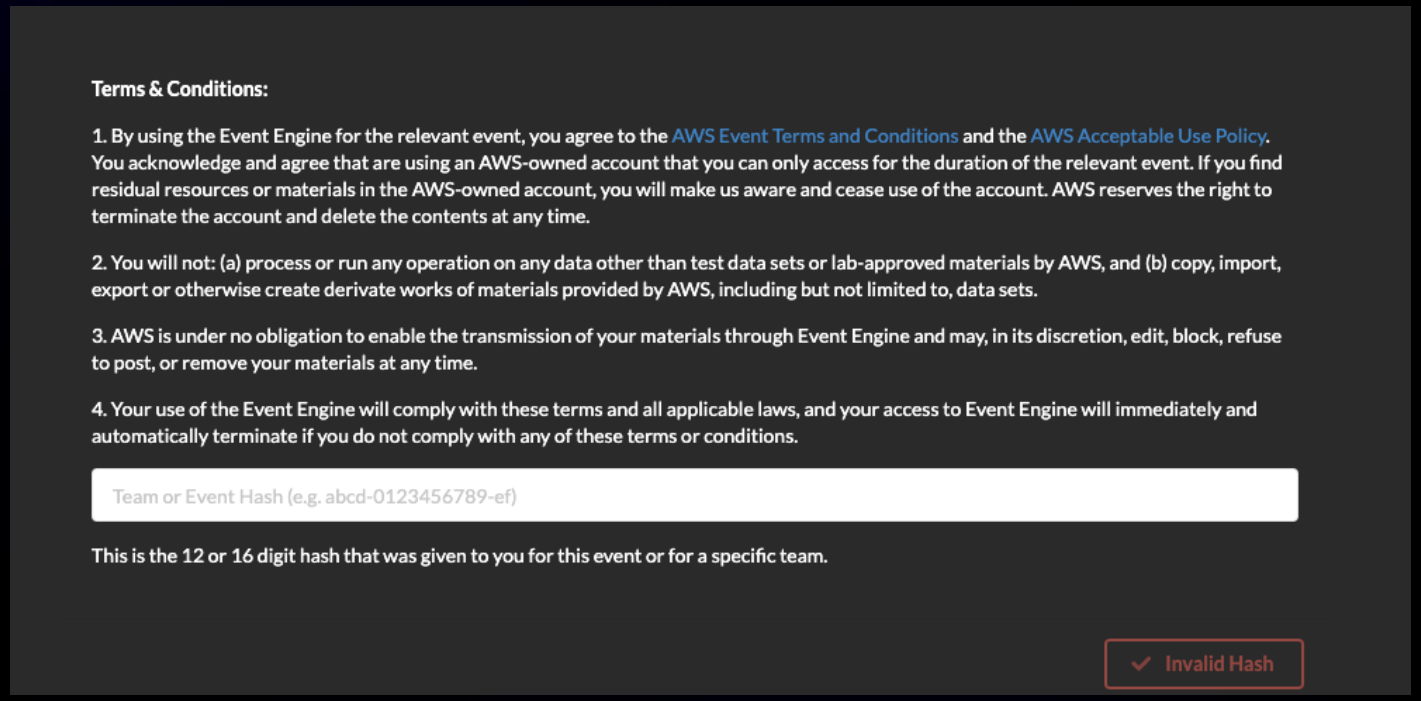
- Deploy FHIR Works on AWS
- Deploy and configure Postman
- Interact with FHIR Works on AWS using Postman

Amazon HealthLake

- Deploy Amazon HealthLake
- Interact with Amazon HealthLake using service console

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Customer dashboard login

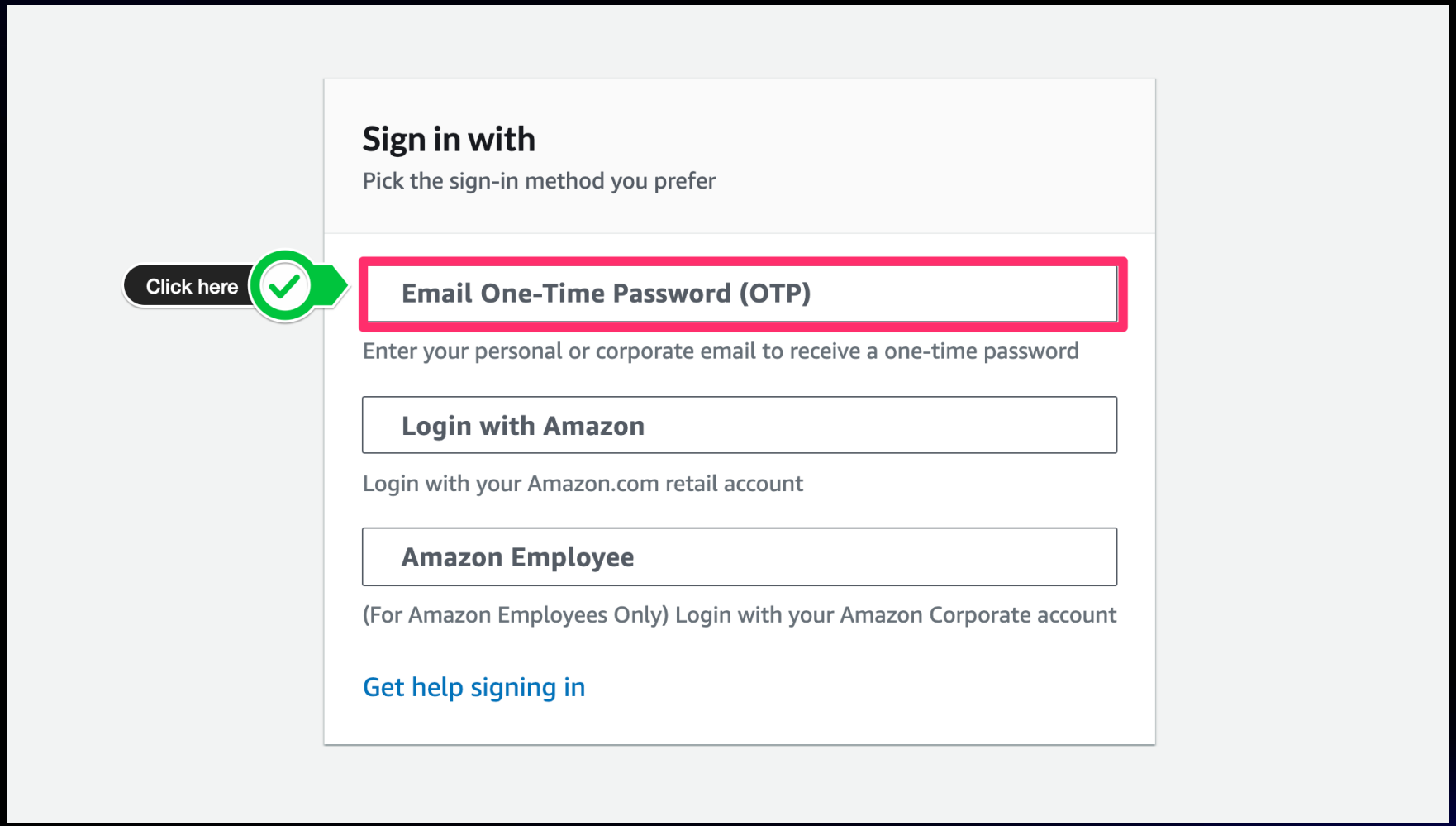


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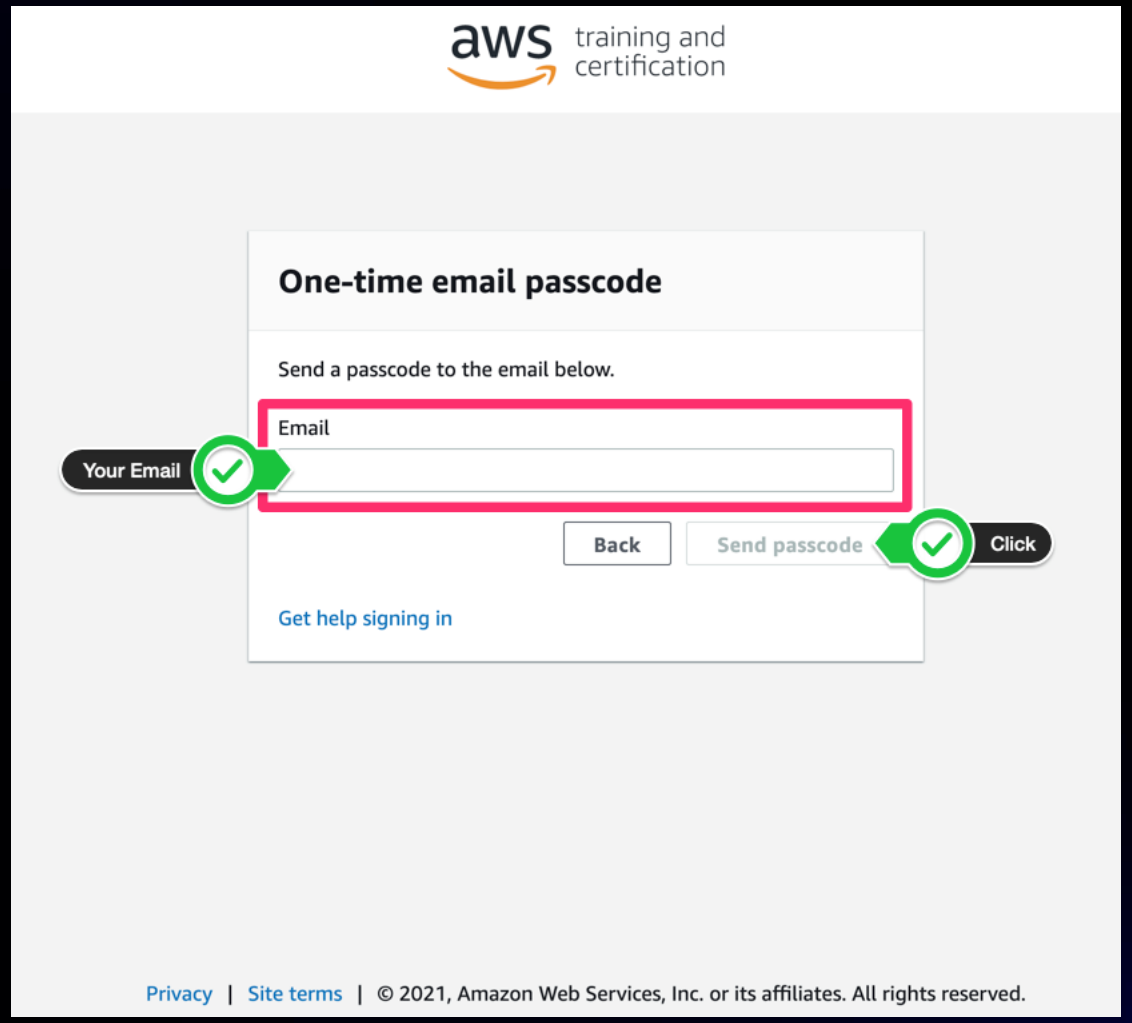
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Customer dashboard login



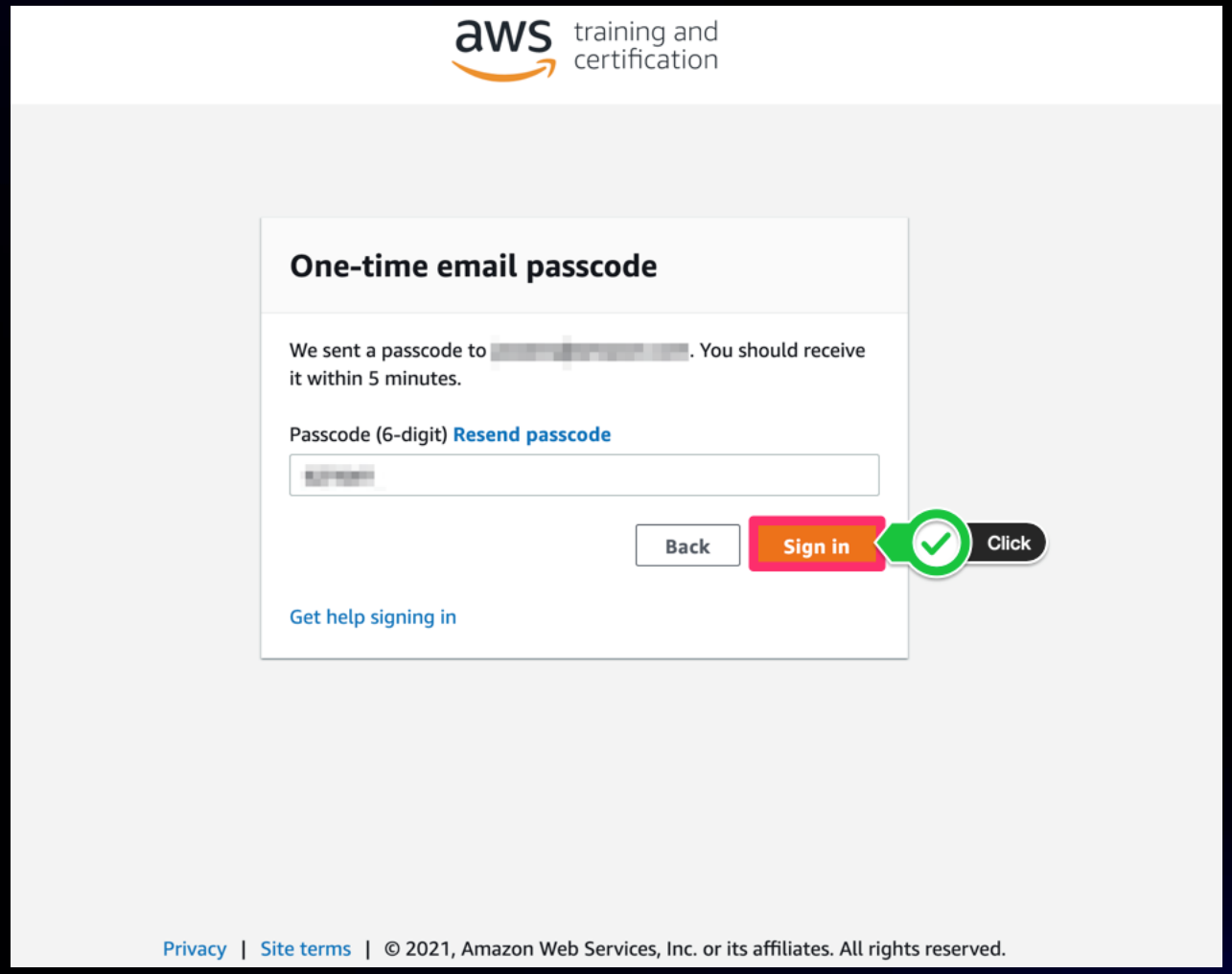
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Customer dashboard login



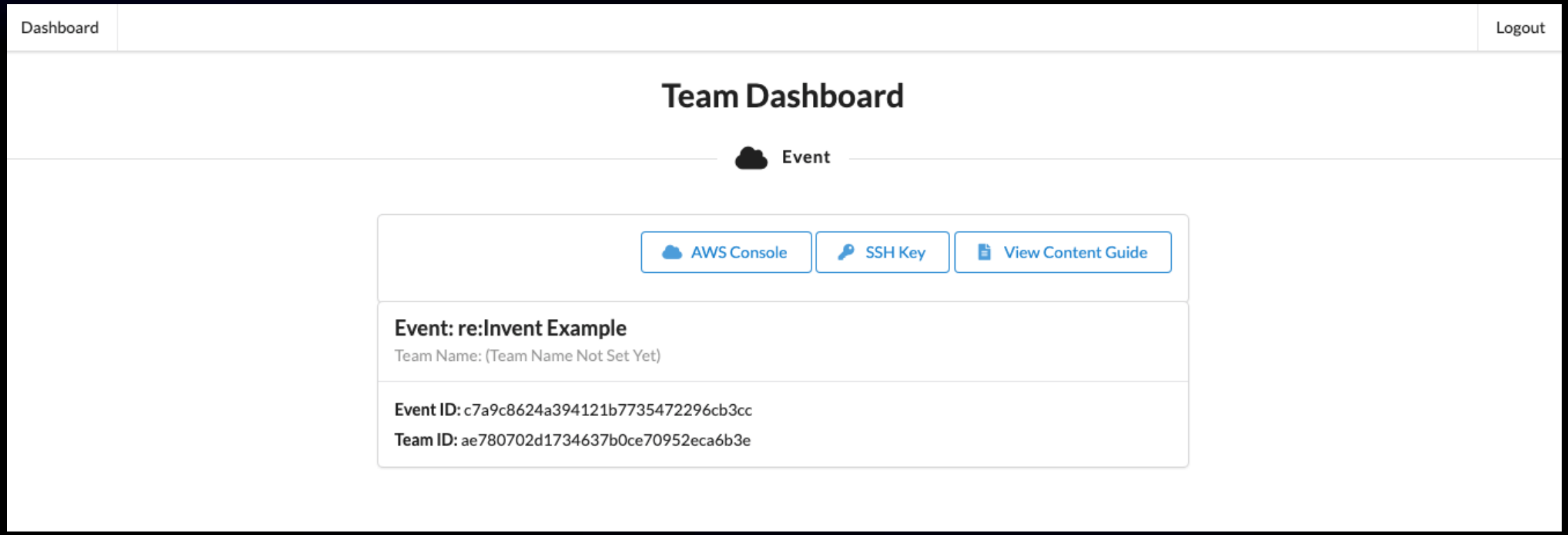
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Customer dashboard login



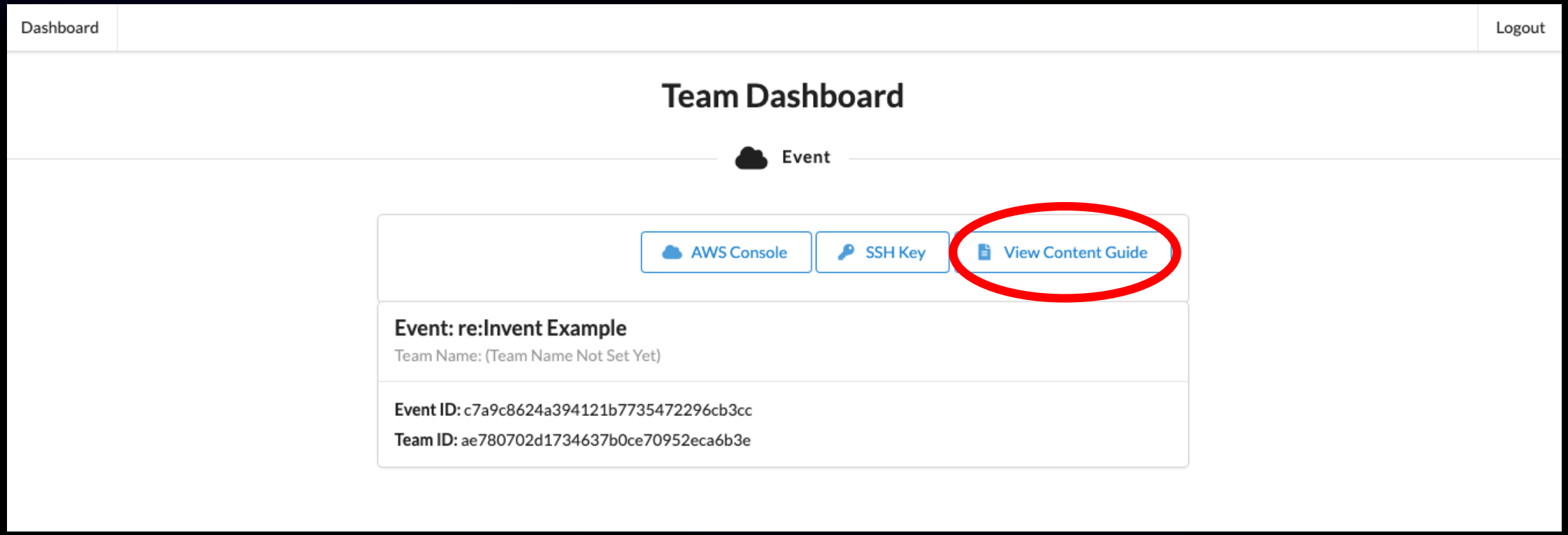
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Customer dashboard



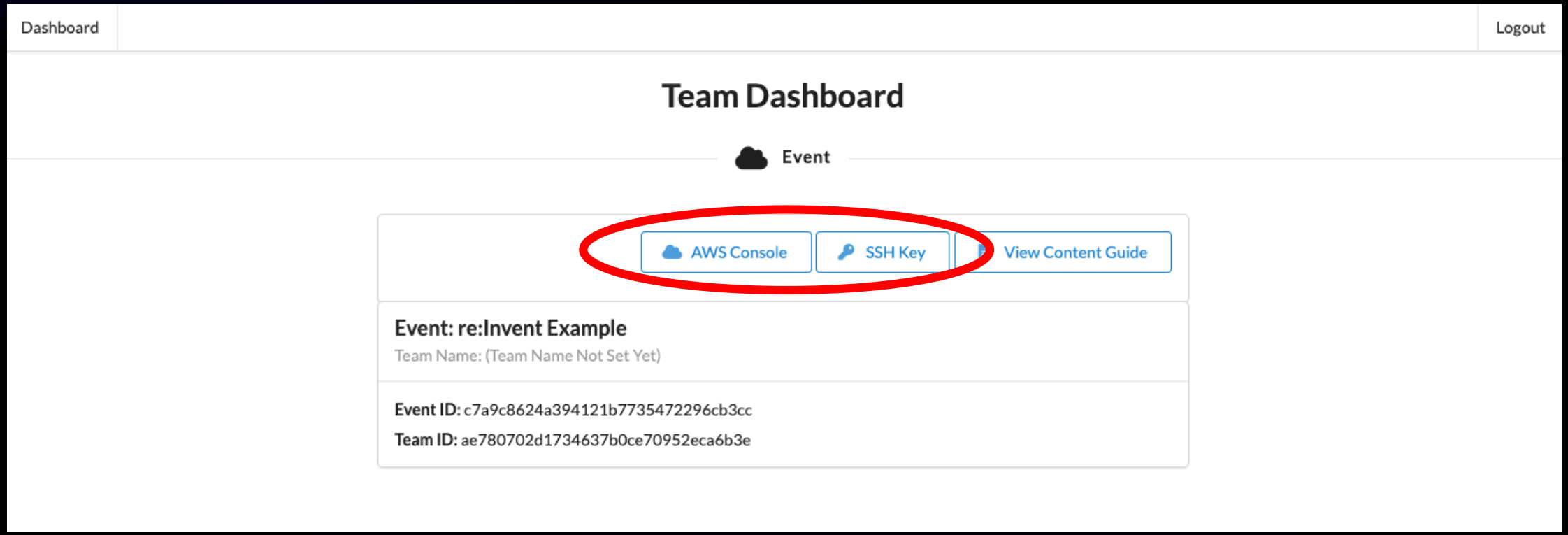
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Accessing workshop content



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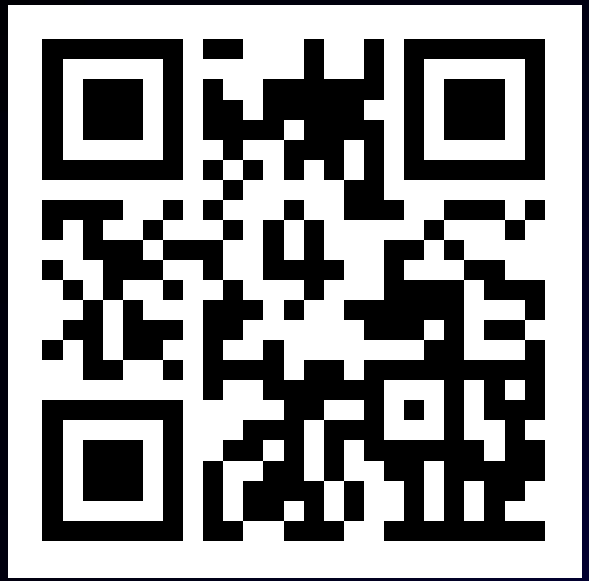
AWS/SSH credentials



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Access to workshop content

Access workshop by navigating to https://tinyurl.com/22vc4fvs



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Build time

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HLC302- Builders: Building a HIPAA-eligible virtual care solution on AWS

HLC306- Chalk Talk: Healthcare data center migration: Best practices and approaches

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Healthcare & Life Sciences Lounge

Join us at our networking lounge everyday for post-session speaker meet-and-greets, ask-the-experts, featured-topic deep dives, and informal discussions

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Wynn, Level 1

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Thank you!

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