aws

Architecture Diagrams

Build a Healthcare Data Pipeline on AWS with IBM Cloud Pak for Data

Build a Healthcare Data Pipeline on AWS with IBM Cloud Pak for Data: Architecture Diagrams

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This architecture helps you build data pipelines and use machine learning (ML) models to predict patient treatment outcome, readmission rate, or disease progression.

Build a Healthcare Data Pipeline on AWS with IBM Cloud Pak for Data Diagram
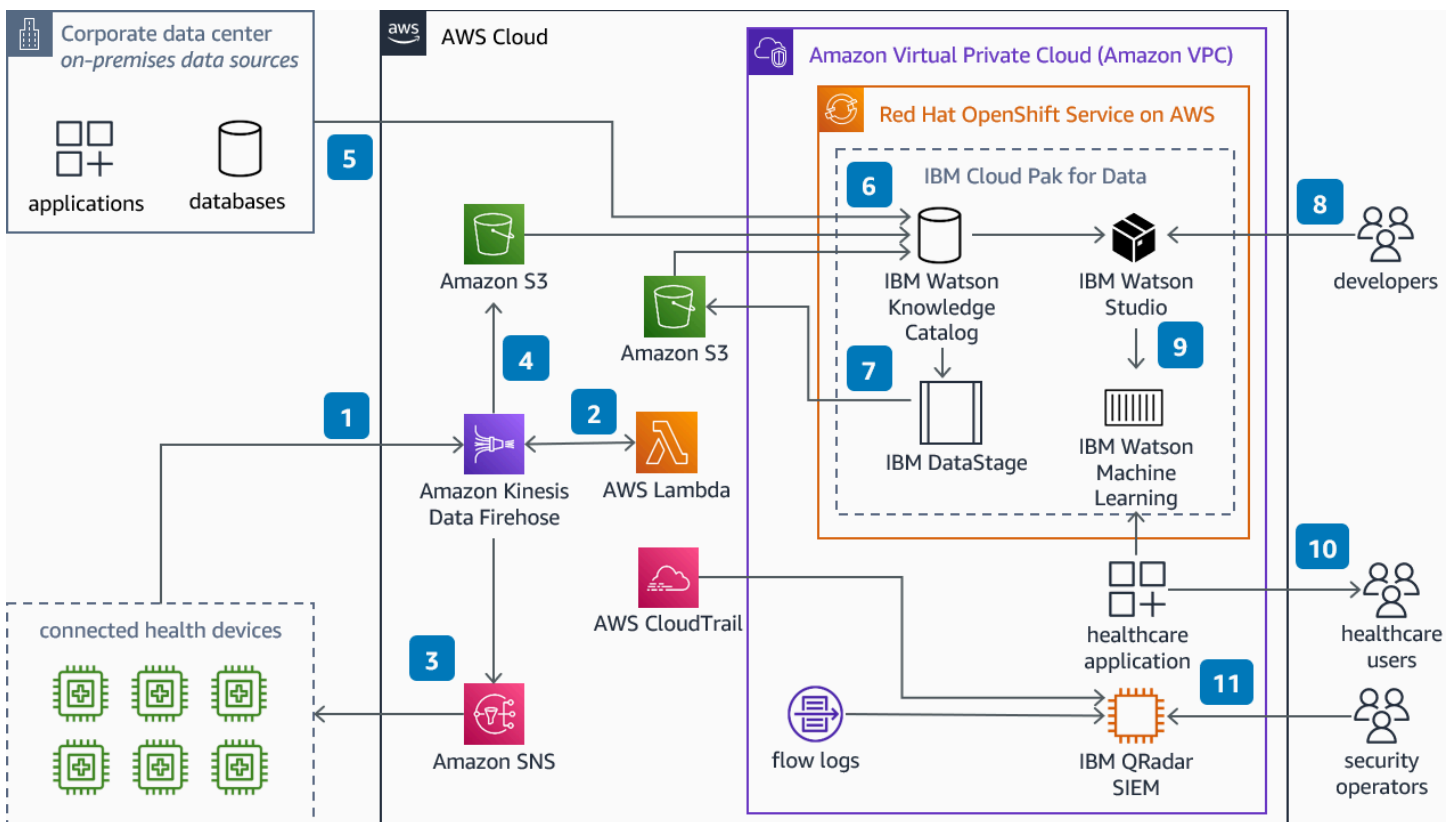
1. Connected medical devices stream patient health information to **Amazon Data Firehose**.

2. **AWS Lambda** applies data format transformations on the stream data.

3. If the transformation fails, **Amazon Simple Notification Service** (Amazon SNS) receives a notification and invokes a re-processing API to rectify the failure.

4. After successful format transformation, **Firehose** persists data on **Amazon Simple Storage Service** (Amazon S3).

5. IBM Cloud Pak for Data (CP4D) uses its connection services to access data in **Amazon S3** and on-premises.

6. You can use IBM Watson Knowledge Catalog to create a data governance framework, perform data enrichment, and train ML models. You can create data protection rules for data access and mask sensitive information.

7. With IBM DataStage, you can create, edit, load, and run data transformation jobs to generate enriched and tailored information.

8. Use IBM Watson Studio to analyze data, and build and train ML models.

9. Trained models are deployed to IBM Watson Machine Learning and are exposed as endpoints. These endpoints are integrated within a healthcare application to provide insights into patient condition.

10 Dashboards provide information for patient treatment, outcome prediction, readmission rate and disease progression.

11 IBM Security QRadar XDR on **Amazon Elastic Compute Cloud** (Amazon EC2) collects, processes and aggregates **Amazon VPC** flow logs, **AWS CloudTrail** logs and IBM CP4D logs. It uses these to manage security and provide near real-time monitoring and threat alerts.

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Further reading

For additional information, refer to

- AWS Architecture Icons
- AWS Architecture Center

- [AWS Well-Architected](#)

- [IBM Cloud Pak for Data](#)

- [IBM Watson Knowledge Catalog](#)

- [IBM DataStage](#)

- [IBM Watson Studio](#)

- [IBM Watson Machine Learning](#)

- [IBM Security QRadar XDR](#)

Diagram history

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Change	Description	Date
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