

High-fidelity Data Export

A data lake dilemma

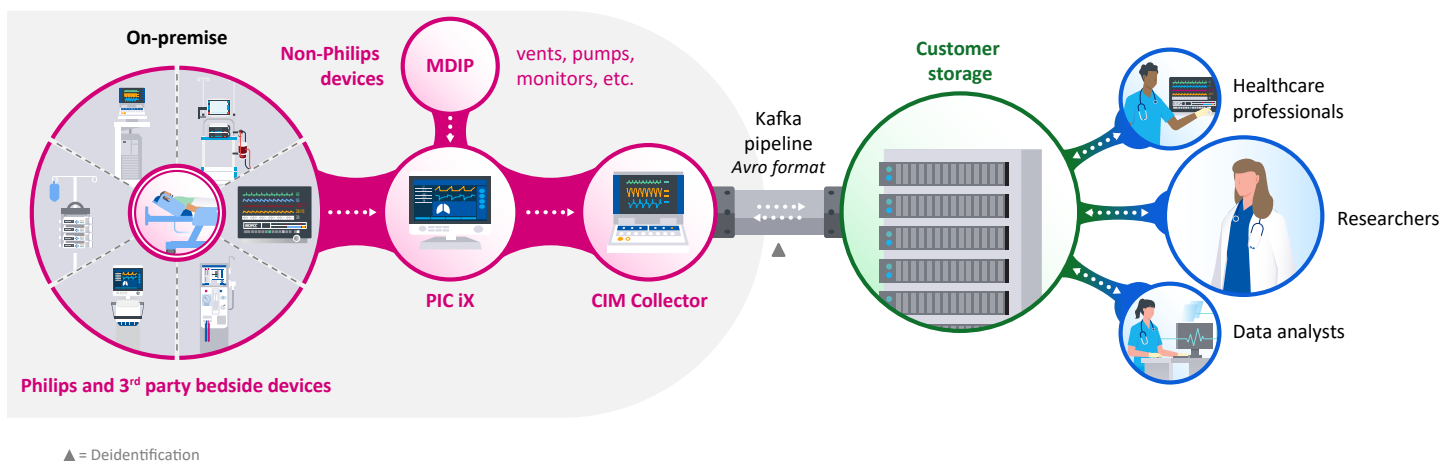
In today's data-driven landscape, hospitals building an on-premise data lake often struggle with IT challenges around capturing and streamlining the data pipe. Existing solutions often lack the seamless connectivity and precision necessary for optimal data transfer, leading to operational inefficiencies, compromised data integrity, and security concerns. When hospitals do have access to data, it's often coming from multiple sources, in a complicated way; and rarely is it high-fidelity data that includes waveforms, numerics and alarms.

A new data export product from Clinical Insights Manager (CIM)

High-fidelity Data Export is a comprehensive and modern feature to export high-fidelity medical device data to a hospital's on-premise data lake. By leveraging CIM Collector, data is captured from the Philips central station (PIC iX) and non-Philips medical devices. The high-fidelity data captured is published to a Kafka pipeline in Avro format. A hospital can leverage an existing Kafka pipeline to push high-fidelity data from the CIM Collector to its data lake.

How it works: your data stored on your terms

High-fidelity Data Export gathers data from Philips and third-party devices using the CIM Collector running on a virtual machine. High-fidelity data is pushed to the Kafka pipeline every 30 seconds. This data consists of waveforms, numerics and alarms. The data is organized and compressed using Avro format for efficient storage and transmission. Then, Kafka pipeline facilitates seamless data transfer to customer storage environments.



Avro format is a data format that helps organize and compress data storage for transmission. It's commonly used in big data applications to efficiently handle large volumes of information. By structuring data in a compact format, Avro facilitates the management and transfer of data between different systems or platforms. This is the same format we use to export data to the cloud in our applications.

Kafka pipeline is a system for managing and transporting data between different software applications. It acts as a central hub that efficiently moves data from one component to another. Essentially, it's like a high-speed data highway that keeps information flowing within your software ecosystem. Kafka provides a natural transition to process high-fidelity data received from PIC iX due to its performance and durability.



Rich data sets

With Philips High-fidelity Data Export, healthcare providers gain access to critical information stored in their data repositories. This includes:

- Essential Patient ADT (Admission, Discharge, Transfer) data
- Diagnostic-quality ECG waveforms for precise analysis
 - 8 ECG (500 sps) and 20 non-ECG waveforms
- Alarm, alert and event information
- Numerics and calculations ~1-second intervals
- Arrhythmia monitoring
- Two options to capture non-Philips devices: Using IntelliBridge device-EC10 or leveraging Medical Device Information Platform — third-party interfaced devices (Philip IntelliBridge and Capsule)



Simple data access

High-fidelity Data Export provides you access to data being sent from both Philips and third-party medical devices retrieved from the PIC iX.

- Access through a Kafka pipeline (customer provided)
- Data is buffered in 30-second increments
- Avro format allows for large quantities of high-quality data to be compressed and transferred
- Ability to store and forward
 - When the connection between the collector and Kafka pipeline breaks, data is stored locally in a Postgres database (6-hour capacity for 1024 beds). Locally stored data is pushed by the CIM Collector software when the Kafka destination is restored.



Privacy and security

Designed to help protect your data and security.

- Secure SSL/TLS connection between CIM Collector and Kafka Broker
- Managing access control roles and local audit trail on the system
- Password protection

High-fidelity Data Export includes:

- Philips is responsible for installation, configuration and proper operation of the Clinical Insights Manager software on the on-premise virtual machine.
- HFDE does not give an ability to access apps on Clinical Insights Manager and this is not intended for real-time clinical decision-making.

Customer responsibilities:

- The customer is responsible for providing the virtual machine and managing the operating system (OS) on the virtual machine. This virtual machine should not be shared with any other software.
- The customer is responsible for hosting Kafka infrastructure and consuming data from the Kafka topic.
- Please refer to the detailed document, High-fidelity Data Export technical datasheet, for how to set up the Kafka stream.

Together, we can unlock your data and put it to work!

