

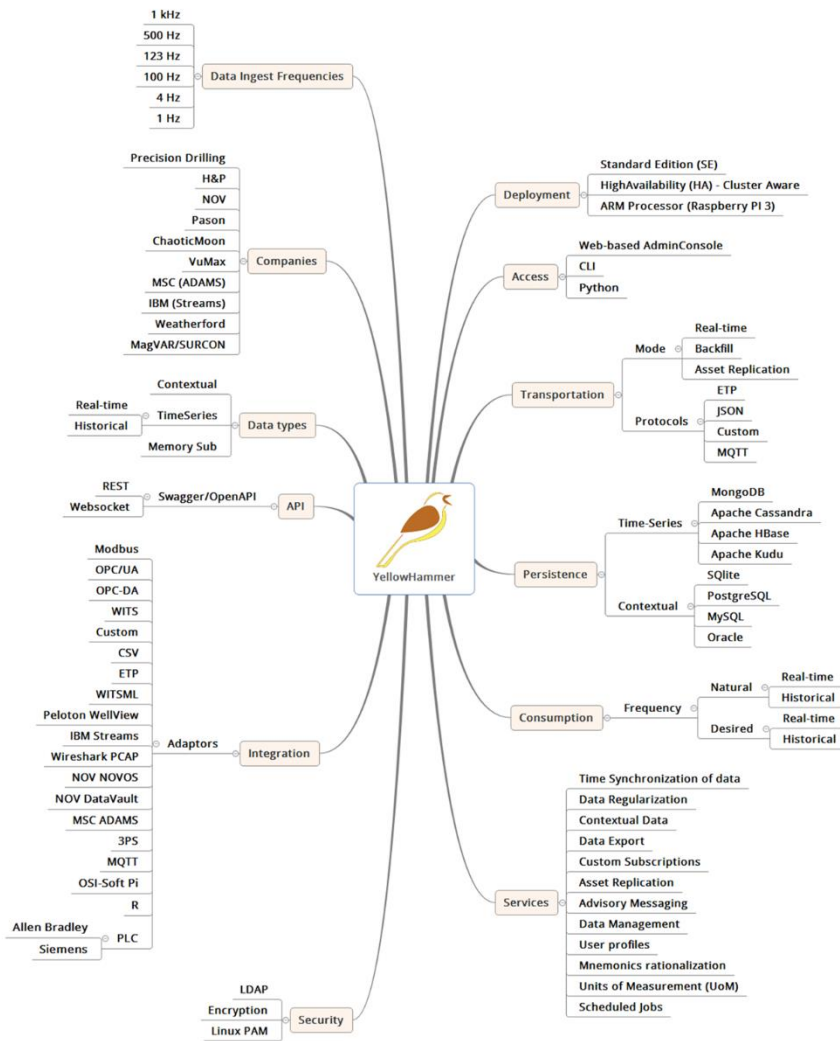
# YellowHammer

## BENEFITS

- Seamless data collection from multiple devices and systems
- Time synchronized data streams from multiple data vendors
- Zero data loss during collection & transportation
- Monitoring of quality of streaming data in the context of environment and stage of operations
- Delivery of high fidelity data irrespective of quality of input data streams
- Streaming of data at different frequencies as demanded by the downstream applications
- Flexibility of choice of Units of Measurement (UoM) to consumers of streaming data
- Data backfilling feature
- Support for bi-directional data flow for advisory and asset control messages
- Customizable for different industry segments
- Support for localization
- Platform-agnostic

## Overview

Yellow Hammer is a comprehensive, data aggregation platform for streaming data that can publish low latency and high frequency data over low bandwidth networks to multiple consumption points. The software delivers a step change in the attainment of operational efficiencies by delivering high fidelity data from a broad range of protocols and frequencies.



To configure Yellow Hammer server, a feature rich, web based UI can be used along with a scriptable command line interface (CLI). Additionally, power users can use a combination of the JSON, RESTful, and Python APIs to programmatically interact with the server. Yellow Hammer can be deployed on an ARM based platform such as a Raspberry Pi III to a full-blown multi-node cluster. The software product has been tested on Windows, Linux, and MacOS X.

**SYSTEM REQUIREMENTS**

**Server**

**OS:** Windows  
Ubuntu 14+  
CentOS 6+

**CPU:** Quad-core at 3.0 GHz or higher

**Memory:** 4 GB+

**Client**

**Browser(s):** Google Chrome Version 60.x+  
MS Edge 25.x

**SIGMASTREAM**

© SigmaStream, LLC 2019

This document is current as of the initial date of publication and may be changed by SigmaStream at any time. Features may vary depending on the version of the product deployed. It is the user's responsibility to evaluate and verify the operation of the product or program.

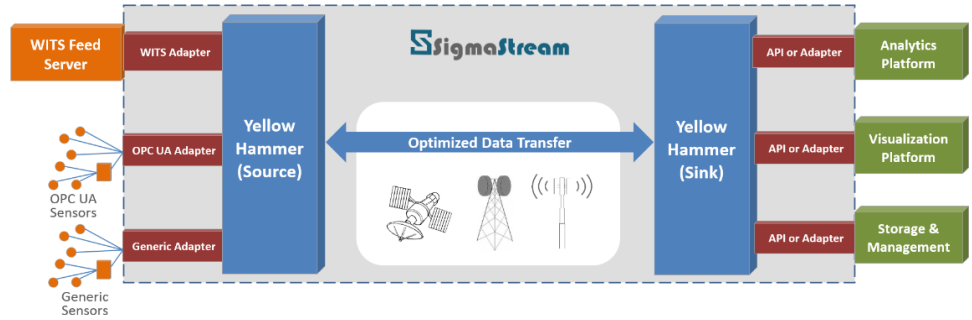
THE INFORMATION IN THIS DOCUMENT IS PROVIDED "AS IS" WITHOUT ANY WARRANTY, EXPRESS OR IMPLIED, INCLUDING WITHOUT ANY WARRANTIES OF MERCHANTABILITY, FITNESS FOR A PURPOSE AND ANY WARRANTY OR CONDITION OF NON-INFRINGEMENT. SigmaStream products are warranted according to the terms and conditions of the agreements under which they are provided.

Release Date: March 2019

**CONTACT**

info@sigmastream.com  
Houston, TX

713.234.6345



**Features**

The key features of YellowHammer are listed below :

- Protocols & Data Formats**

YellowHammer supports widely used data protocols including ETP, Modbus, OPC U/A, WITS, WITSML, and MQTT. In addition to the protocols listed YellowHammer can consume and produce many data formats such as JSON, CSV, and Wireshark PCAP. The software connects to RDBMSs and the popular NoSQL databases such as MongoDB, Cassandra, HBase, and Kudu and to a host of custom endpoints.
- Unified View of Data Streams**

Time synchronization and mapping of Units of Measurement results in producing unified data streams for downstream applications. YellowHammer processes the differences in timestamps of data streams from multiple sensors and devices to deliver one steady data stream. Mapping of UoM for data channels offers flexibility to view data with the preferred UoM, irrespective of UoM of original data.
- Export and Replay**

Streaming data captured by the Yellowhammer is persisted. YellowHammer comes with an array of options to export and replay the historical data. For instance, one can replay data for a specific set of channels collected from a specific device between a start and end time. Or, one can replay data from the persisted store and a CSV file and merge the output, on-the-fly, at the natural frequency or at a sped up rate.
- Custom Subscriptions**

The ability to choose channels from multiple devices producing data at different frequencies is a convenient and powerful mechanism to ensure just the right data at the right frequency. YellowHammer can regularize the data in terms of frequency for its consumers using waterwheel subscription mode.
- Data Backfilling**

One of the key features of YellowHammer is the ability to provide data to consumer applications in real-time. However, network outages during data transportation may result in gaps in the time-series data at the destination. To address the problem, Backfilling process is designed to identify gaps and fill them up, automatically.
- Data Management**

YellowHammer provides an abstraction layer above the persistence mechanism by offering a full featured set of data management tools. The YellowHammer administrator is shielded from the complexities of the underlying technology.
- Contextual Data**

Built-in business rules engine ensures a "single version of the truth" of contextual data from multiple sources.
- Optimized Architecture**

Segregation of functional units into separate components to facilitate distributed deployment for enhanced performance. For instance, WebClient which is a UI component for YellowHammer server is packaged and deployed separately. It allows the use of a single WebClient for the administration of multiple YellowHammer servers.
- Quick Setup & Configuration**

CLI tool and WebClient have many options provided to create / export/ import / copy configurations for business asset hierarchy including devices. Selective extraction and import of data are supported, too. Thus, helping users to establish a working setup quickly and start data streaming.
- Device-centric operations**

YellowHammer's device-centric mode facilitates continuous data collection and replication with minimum configuration and need for metadata. Any changes done in the higher levels of business assets hierarchy, for data consolidation do not affect the streaming. Changes are treated as events and are broadcasted using pub-sub model.