

# Plantweb Optics Data Lake

## Connect, Store, and Contextualize Operational Data

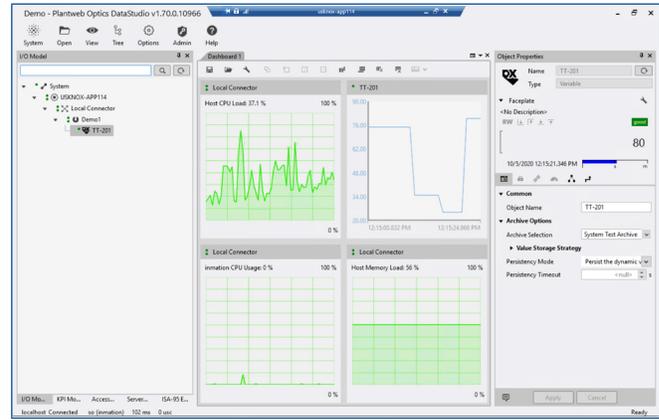
Facilities are rapidly adopting new technologies and embracing digitalization to enhance operations. In fact, Cisco estimates that by the end of 2020, 50 billion devices will be connected to the internet. Analytics solutions are deployed to optimize energy usage, increase asset performance, and reduce maintenance costs. The result of these new technologies, devices, and solutions is an explosion of operational data. Traditional strategies for managing operational data are not equipped to provide the connectivity, scalability, and contextualization required to realize the desired business outcomes.

A different approach must be used to manage this exponential data growth. The Plantweb Optics Data Lake provides a new solution, built on a modern database, that will support the data management requirements for Industry 4.0. From one centralized location, all operational data at your facility can be connected, stored, and contextualized. This reduces the current pains of existing data silos while also creating opportunities to generate new insights to improve production, reliability, safety, and energy usage.

### Connect Operational Data

The first step in creating a centralized location for operational data is providing the connectivity to the most prevalent interfaces. The Plantweb Optics Data Lake provides an enterprise-level aggregation solution for all your operational data and supports all the major interfaces including:

- OPC DA
- OPC HDA
- OPC A&E
- XML-DA
- OPC UA
- OLE DB
- Relational Databases (ODBC)
- Direct PLC connections



In addition to the available connectors, new connectors can be developed with the Web API. Because this solution is powered by NoSQL storage, all types of operational data can be stored including measurements, states, aggregates, alarms & events and more.

Another critical path to success is being able to securely move your operational data wherever you need. The Plantweb Optics Data Lake supports various methods of egress including OPC UA Server and the Web API so you can send data to applications in the cloud or on-premises.

### Store Operational Data

Increasing data generation by solutions like wireless transmitters is creating opportunities to analyze processes, energy, and equipment in ways you never could before. One critical component to analysis is the ability to access historical data. The Plantweb Optics Data Lake allows you to historize data beyond process variables and provides the horizontal scalability to support the continued growth of analysis as more data points are added to the system.

Understanding the need to store more data, the Plantweb Optics Data Lake scales based on logical CPU's, foregoing the discussions of tags, connections, and users. This solution is built to continue to expand as you need.

Depending on the application and use case, it is critically important to be able control the rate of data coming into the system. The data resolution can be configured to be as granular as picoseconds ( $10^{-12}$ ) for applications that require the finest resolution or can be set to longer periods if less frequent updates are required. The Plantweb Optics Data Lake provides complete control over your data throttle, delivering the information you need while also ensuring you do not overload underlying sources with requests.

## Contextualize Operational Data

With your operational data centralized, the next opportunity is to contextualize this data to provide a single view into the status of production, reliability, safety, and energy. The Plantweb Optics Data Lake provides the flexibility needed to combine data from multiple sources into objects or locations. For example, 3 different data sources may all have important data related to a critical compressor. Relevant data from all 3 sources can be connected to a single object to provide an overall compressor status.

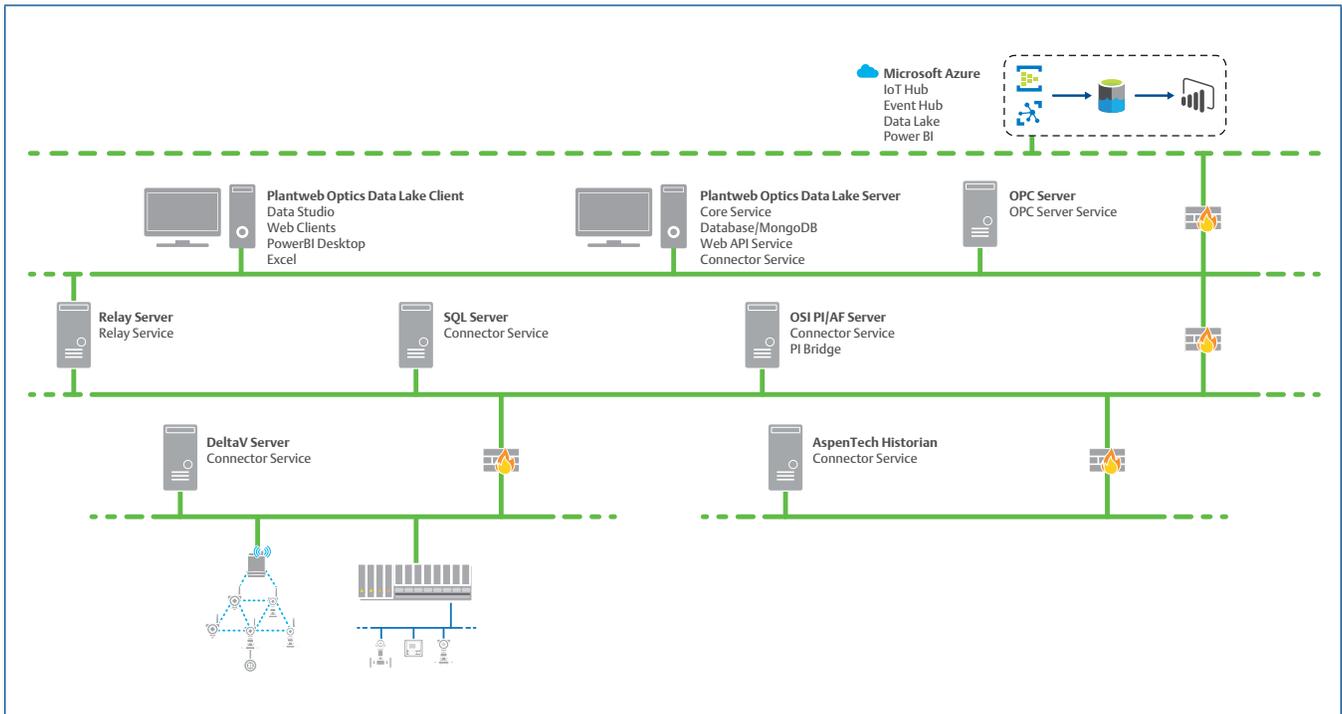
The Plantweb Optics Data Lake also provides the users multiple ways to support visualization and reporting of data. There is a built-in user interface (UI) for visualization and report generation. In addition, common UI's and reporting tools such as PowerBI and Tableau are also supported. This flexibility ensures that users will be supported in however they need to consume data.



## Summary

The Plantweb Optics Data Lake is the modern solution to provide enterprise-level data aggregation. It can connect to all major interfaces and get your data where you need it to drive business decisions. This data management solution also provides a scalable solution to grow and can store data in a centralized location. With the ability to contextualize data from multiple sources, the Plantweb Optics Data Lake provides the single pane of glass to start driving business results at your facility.

# Plantweb Optics Data Lake Architecture



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