OSIsoft Launches Cloud-native Services Platform for Plant and Enterprise Data

By Janice Abel

Keywords

OSIsoft, PaaS, Cloud Services

Summary

For many years now, ARC Advisory Research has shown that OSIsoft is the clear market leader in plant historians and data platform technology for the operational world. It's nice to see that the company is not resting on its laurels and continues to innovate to enable industrial organizations to gain increasing value from their data. With its latest offering, *OSIsoft Cloud Services (OCS)*, the company has launched a cloud-native platform-as-a-service (PaaS) strategy that incorporates a secure industrial data infrastructure for on-premise, edge, and cloud.

OSIsoft Cloud Services (OCS) now provide a cloud-native, real-time data management system to help unify and augment critical operations data from across plants or enterprises. This can help accelerate industrial data science initiatives, data sharing, and other digital transformation projects.

As ARC learned in a recent briefing, the offering consists of a cloud-based data store and complementary technology that eliminates coding and other time-consuming work. According to the company, it enables industrial companies – including those with critical operations - to store and manage all types of plant and enterprise data on-premise, at the network edge, and/or in the cloud, as is most appropriate. This includes contextualizing, cleansing, and managing real-time data for data analysis, and for use in the plant and enterprise and with OSIsoft partner applications.

Key findings about OSIsoft Cloud Services include:

- Can be used for all types of data, including critical industrial data
- Enables the ability to combine data sources for Big Data analysis
- Permits secure data sharing within the company firewall and with OSIsoft partner applications outside the firewall

- Secure and cost-effective for mission-critical, real-time time-series data

The Data Dilemma Problem

Critical operations data includes mission-critical data generated by new IoT sensors, operations, production lines, safety equipment, grids and other systems that are essential to run operations.

Data scientists spend almost 80 percent of their time cleansing, organizing, and integrating data. Often, data becomes inaccessible and locked in silos. Additionally, IT teams spend too much time integrating different data sources and often get bogged down writing custom code to do basic administrative tasks, messaging data, or managing VPNs for third parties.

OSIsoft Cloud Services for Data Sharing

OSIsoft Cloud Services (OCS) are designed to help industrial organizations solve operational problems and reduce costs. The offering provides flexibility, enabling industrial organizations to have their operational data on-premise, in the edge, or in the cloud. The service includes monitoring and managing deployments. The technology eliminates the custom coding and time-consuming grunt work otherwise needed to bring multiple data sources together from the plant, enterprise, or even OSIsoft partner applications.
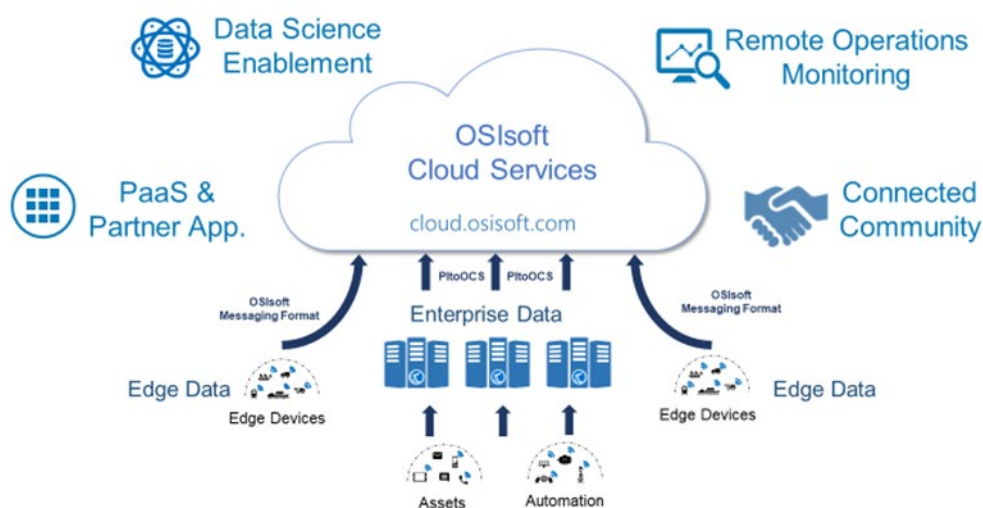
OCS Supports Digital Transformation with On-premise, Edge and Cloud Data

> *"As the scope and scale of data increase, so will the number of people that need to use it on a daily basis. We want to make their experience as seamless as possible so they can solve more problems in less time with fewer barriers standing in the way of success," said Dr. J. Patrick Kennedy, CEO and Founder of OSIsoft. "OCS represents the latest step in a nearly 40 year journey and there's more to come."*

OCS extend the range of possible applications and use cases of OSIsoft's data infrastructure by giving end users and third-party software developers the ability to unify complex operations data from distributed PI System servers and other sources and share it with IT, data scientists, executives, service providers and other employees and partners in a rapid, intuitive manner. According to Laurent Gariques, Senior Strategic Product Manager, OSIsoft, "Within a few hours, thousands of data streams containing years of historical data can be transferred to OCS, allowing end users to experiment rapidly with large data sets to speed decision making."

Combines All Types of Data

Software developers and system integrators can use OCS data to create new
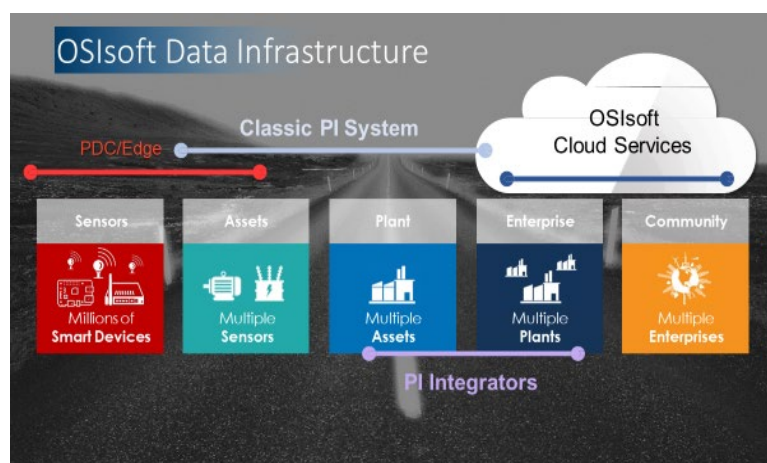
**OSIsoft Cloud Services Combine All Types of Data**

applications and services. Industrial enterprises and their service providers can use OCS to easily link remote asset data. Data silos from multiple plants or throughout the enterprise can be combined to enable operations people, engineers, and data scientists to analyze real-time and historical data across plants and even across the enterprise. OCS can be used to store, analyze, and manage all types of data from multiple locations.

Supports Collaboration Outside the Firewall

The PaaS platform is available outside of an organization's firewall. Data from operational sites is essentially replicated to OCS. OSIsoft then manages the aggregated data. Updates can be configured to occur automatically and, while OSIsoft manages OCS, it does not have access to the underlying data. Data can be analyzed without disturbing operations. It does not go through the control network, enabling the ability to connect and share data securely

with partners outside the firewall. The technology is deployed on Microsoft Azure but can be accessed through any of the major cloud providers, including AWS and Google Cloud.   As ARC learned in recent discussions with third parties, OCS offers the potential to leverage OSIsoft PI data within partner-developed applications to help end users further improve their operations and reduce costs.

OCS, like the OSIsoft PI System, will enable and attract a broad set of third-party support from system integrators and independent software vendors (ISVs) to extend OCS capabilities with innovations in data science, vertical markets, and other new opportunities.
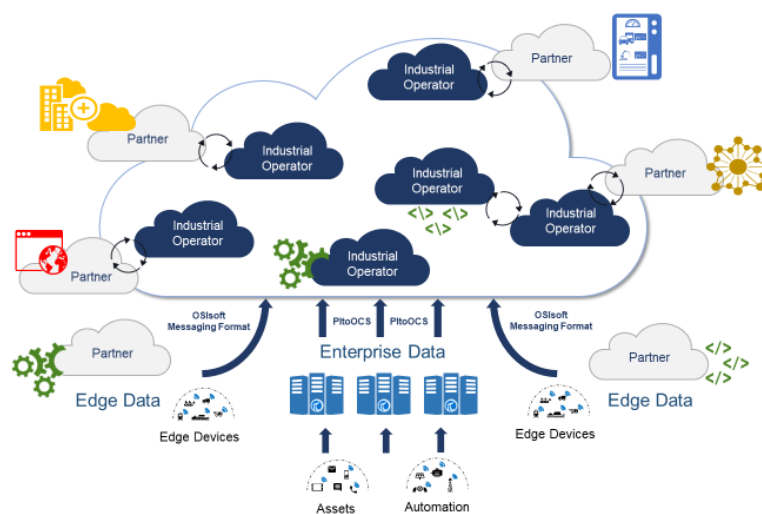
OCS Enables Data Sharing for Partners - Outside the Firewall

Improving Utility Forecasts and Peak Shaving Strategies

Alberto Colombo, Founder and President, DERNetSoft, explained how the company is using OSIsoft Cloud Services to collect, share, and analyze utility and electric power data to improve forecasts and peak shaving strategies. Industrial businesses and institutions use DERNetSoft software and services to manage distributed energy resources (DER) and demand response (DM). OCS provides platform as a service (PaaS) for DERNetSoft's AI and ML software for the growing marketplace of local energy aggregators. Some of the company's customers include Westlake, Kaiser Permanente, and Bloom Energy.

Collecting, Aggregating, and Analyzing E&P Data

At PI World 2019, Devon Energy, discussed its use of Seeq software with OSIsoft PI data collected from multiple energy exploration and production sites and aggregated in OCS for diagnostic, descriptive, and predictive analytics. This demonstrated both OCS integration and high value customer use cases from integrating Seeq with OCS. Seeq is available as a cloud-based SaaS application on the Microsoft Azure cloud platform, so both OCS and Seeq may be run and managed by their vendors on behalf of the customer.

AI-based "Autopilot" Will Help Cement Manufacturer Save Energy

Delivered as a service, Petuum has integrated its Industrial AI-pilot solution with OSIsoft's PI Infrastructure and Cloud Services on the edge, on-premise, and in the cloud to help predict, prescribe, and "autosteer" manufacturing assets and processes to support operational excellence initiatives. According to Petuum, the solution combines time-series data from the PI System and data from other sources with self-learning AI algorithms to provide accurate and timely predictions and prescriptions that continuously learn and adapt. As ARC learned, Cemex which is launching an effort to use the Petuum Industrial AI-pilot integrated with OSIsoft Cloud Services, expects to improve yields and save up to 7 percent in energy costs. This is a game-changing initiative in this highly cost-conscious industry due to the commodity nature of the product.

Accessibility and Scalability for the Enterprise

According to OSIsoft, OCS can be scaled up or down dynamically, without requiring users to worry about varying consumption patterns.

OSIsoft has embedded numerous usability features for connecting devices, managing user access, searching data sets, transferring data from the PI System to OCS, and other functions. OCS can also accept data from devices outside of traditional control networks and other data sources.

The cloud eliminates multiple caching systems to enable scaling. OSIsoft has embedded numerous usability features for connecting devices, managing user access, searching data sets, transferring data from the PI System to OCS, and other functions. OCS can also accept data from devices outside of traditional control networks and other data sources.

OCS natively connects to the PI System and authenticates accounts, providing users secure access to one or many data streams using apps for permissions.

To test the scalability and stability of OCS, OSIsoft created a deployment that contained the equivalent of the data generated by all the smart meters in the US over the last two years, or about two billion data streams (e.g., 100 million meters with 20 data streams or measurements each). OCS successfully ingested up to 1.2 billion data points per hour and was able to manage all two billion streams and their data within 48 hours.

Simplified Pricing Model

The OCS pricing model is based on the average number of data streams (or tags) accessed per month, rather than the complex combination of metrics typically used by other cloud service providers. This gives customers the opportunity to pay only for functionality that they use and experiment more freely with their data without incurring unexpected costs. OSIsoft also provides pricing incentives for small and enterprise clients.

Conclusion

ARC believes that the world is moving to hybrid architectures with specialized technologies for analyzing and storing data from the device/edge, to the plant and to the cloud. Obviously, this will depend upon the specific task, volume of data, cost of bandwidth, and reliability and latency requirements. It appears that OSIsoft Cloud Services can help reduce the time needed for data scientists and IT teams to wrangle data and develop any needed. OSIsoft should be well-positioned to help clients that are undergoing a digital transformation with new capabilities for data analysis and better decision making.

The ability to seamlessly integrate and analyze all types of data and share data with partners and other experts should improve productivity and provide industrial organizations with improved decision support capabilities. OSIsoft's new simplified pricing model for OCS should also make the solutions more attractive for both small and enterprise clients by providing them with a more affordable option for gaining more value from their data.

For further information or to provide feedback on this article, please contact your account manager or the author at jabel@arcweb.com. ARC Views are published and copyrighted by ARC Advisory Group. The information is proprietary to ARC and no part of it may be reproduced without prior permission from ARC.