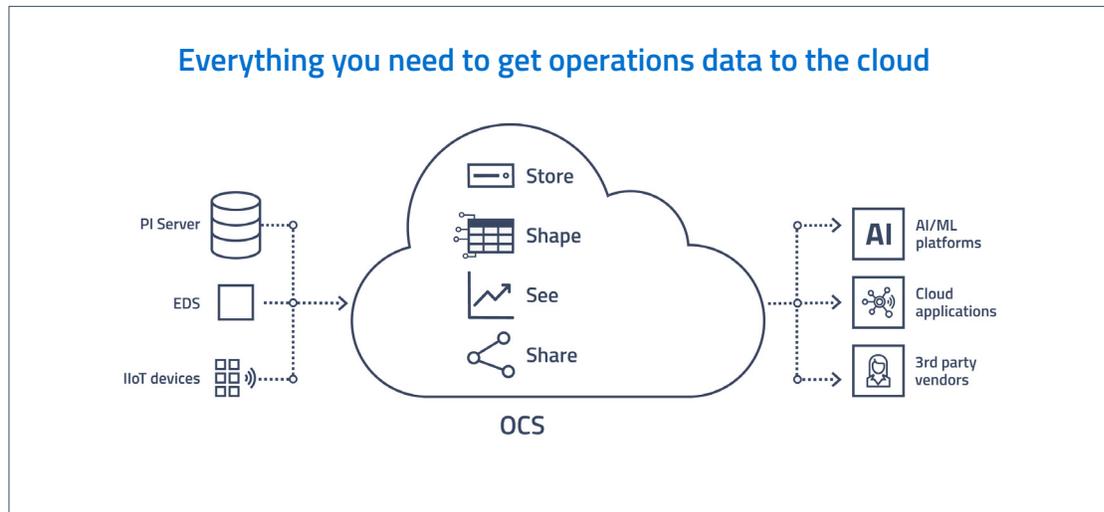# OSIsoft Cloud Services

Cloud data platform for real-time operations

OSIsoft Cloud Services (OCS) is cloud-native platform for real-time operations data. With OCS, you get turnkey connectivity to data created both within your primary control network and at the edge. You can easily add context to your time-series operations data so that users across the organization can understand and quickly take advantage of rich data sets. We fully manage OCS and the functionality you need, so there is nothing for you to assemble, nothing to maintain.

Everything you need to get operations data to the cloud

PI Server, EDS, IIoT devices → OCS (Store, Shape, See, Share) → AI/ML platforms, Cloud applications, 3rd party vendors

OSIsoft Cloud Services (OCS) is a cloud-native, multi-tenant data management solution built for accessing and sharing real-time operations data.

BENEFITS

- Create a single source of operations data for all queries.
- Run ad hoc scenarios with no impact on critical operations.
- Send operations data to the cloud and easily share it with colleagues and partners.

- Leave database maintenance, updates, and security patches to our experts.
- Explore new business models and service offerings with a cloud platform that natively integrates with global PI System™ deployments.

Easy, secure access to operations data

Industrial operators use data to reduce costs, streamline processes, and increase revenue. The rise of cloud technologies offers exciting new opportunities for companies to adopt machine learning and engage a growing ecosystem of vendors and partners. But the operations landscape poses challenges for cloud technologies. Unlike business data, which is accessible from the corporate network, operations data is often in control networks where ensuring security is critical. Many industrial assets are located in remote areas with intermittent connectivity. Data from these assets may arrive delayed by hours, in bursts, or out of order—all of which are difficult for cloud platforms that assume always-on connectivity. And as an engineer or operator, your expertise is engineering and operations, not cobbling together various cloud components to assemble the functionality you need. Traditional cloud vendors simply have not designed their solutions for the realities of operations.

OSIsoft Cloud Services (OCS) is a cloud-native platform built for real-time operations data. OCS provides users inside and outside your organization with flexible, secure, and easy access to relevant operations data. From data collection, to data access, to data delivery through a REST API, OCS provides users with an easy, no-code way to prepare and share access to operations data. OCS supports Azure Active Directory, Microsoft accounts, and Google accounts for user authentication so that you can selectively grant user and role-based permissions

to data streams. OCS also supports distributed and hybrid environments by natively connecting to PI Server, Edge Data Store (EDS), and PI Adapters to give you full visibility into data collected within your primary control network and also at the edge.

OCS makes it easy for operations subject matter experts to share their knowledge with business users who might not be familiar with the details of process readings. Subject matter experts can create self-documenting rules that apply common language to data streams. For example, an operator can use special characters in the data stream name to indicate what type of equipment it comes from. Process engineers can present data to data scientists in row-column format and label column headers with key metadata. Thanks to this collaborative design:

- Operations personnel spend less time preparing and explaining data for business users inside and outside of their company.
- Data scientists and business users get a jumpstart on projects and can query large datasets on-demand without impacting critical operations systems.
- Developers and third-party service providers can securely connect their applications to a single database.
- IT does not need to gather OT requirements nor manage custom code, VPNs, or external accounts.

![OSIsoft logo]

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> ## We noticed significant performance increases because OCS is optimized for this large amount of time-series data where that's not necessarily the case for MongoDB.

John Rogers,
Software Engineer, DERNetSoft

Advantages of a purpose-built platform

Out-of-the-box connectivity

On the operations floor and in highly protected control networks, there is a plethora of protocols and legacy equipment to manage. With two billion data streams—and counting—already captured in PI Servers around the world, why reinvent the wheel? OCS connects natively to PI Servers so you can immediately take advantage of your existing datasets, even from legacy assets. For new edge or IIoT data, OCS also connects natively to the PI System's edge portfolio of products, such as Edge Data Store (EDS), so that you can also collect data from remote environments beyond your primary network. Connectivity is specified through simple configuration prompts, so you're only a few clicks from the cloud.

Powerful, flexible data storage and retrieval

Operations data is usually indexed by time, but it can also contain other dimensions,

that occur in sequence, such as drilling depth or product lot number. The sequential data store in OCS allows data streams to have a configurable primary index, plus additional secondary indices, so that you can store and retrieve data according to the parameters that make sense for your analysis. At the same time, OCS still offers all the capabilities that operations personnel need from their time-series databases, like smooth handling of delayed or out-of-order data, support for predictive data to track against forecasts and models, and fast retrieval of high-resolution data.

Enable OT and IT, without any assembly

Industrial operators have had a more difficult time adopting cloud services relative to their business counterparts because of the disconnect between the people who understand the critical and physical nature of operations (OT) and those with the technical and enterprise application knowledge to implement a cloud solution (IT). Typical cloud solutions require someone to select, assemble, and maintain the various components for ingestion,

aliasing, analytics, storage (hot, warm, and cold), visualization, and integration. OCS is different because it starts by already addressing OT requirements. It also includes pre-built methods for OT experts to transfer knowledge through rule-based metadata tagging. From there, IT can now work directly with curated operations data in a cloud-native environment that integrates with other enterprise applications. Best of all, we maintain the platform so no one on your team has to worry about managing patches or upgrades.

Freedom to share

The same operations data delivers new value with every new application, whether it's a process engineer monitoring production, an equipment vendor who notices signs of degradation and sends out replacement parts, or a third-party data scientist who predicts the impact of weather on operations. OCS offers powerful REST APIs for data sharing. You simply allocate an OCS account and specify sharing permissions so that you can securely engage your growing network of vendors and partners in their application of choice.

Welcome to the new cloud community, where power and flexibility meet the precision and reliability of operations.

Ready to fast-track your journey to the cloud? Go to cloud.osisoft.com.