Securely Transfer AVEVA PI Asset Framework (AF) Data Across Network Boundaries

Asset Framework Protocol Adapter

What is Asset Framework?

Asset Framework is a tool that enables organizations to model either physical or logical objects in the way that best suits how they would like to view those assets and the data associated with them. Organizations can identify the components/elements that make up a process, specify relationships between those objects, and organize them in a way that most aligns with their business.

Securely Transfer Asset Framework Data Across Network Boundaries
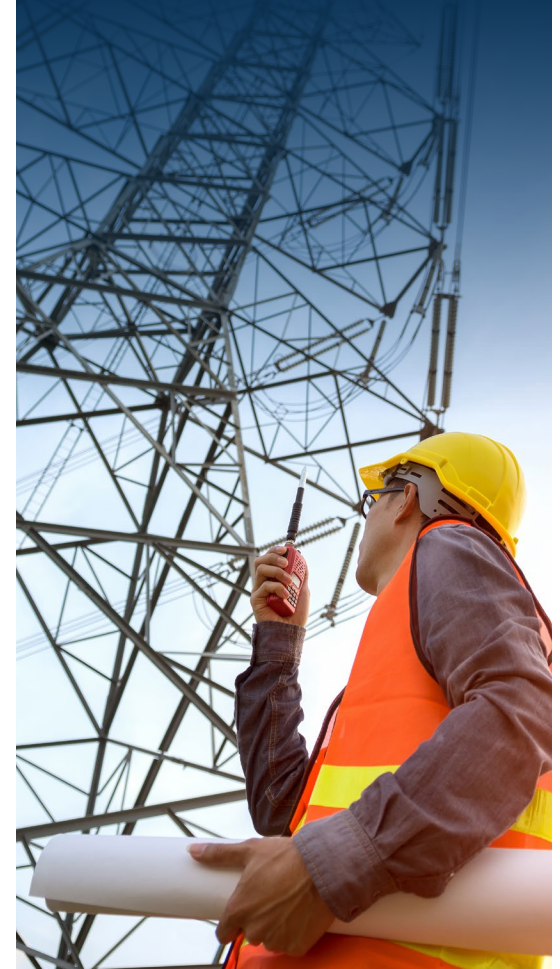
In order to monitor Asset Framework data, the data needs to be transferred out of a secure network to be analyzed, creating a new threat vector to the secure network. Asset Framework data can be securely transferred one-way out of a secure network through a hardware-enforced cross domain solution that prevents threats from entering back into the secure network. Software-based solutions are vulnerable to attacks and cannot provide the level of security required by critical infrastructure networks. Hardware-enforced security provides the assurance that the secure network is locked down and cannot be manipulated in the same way a firewall can.
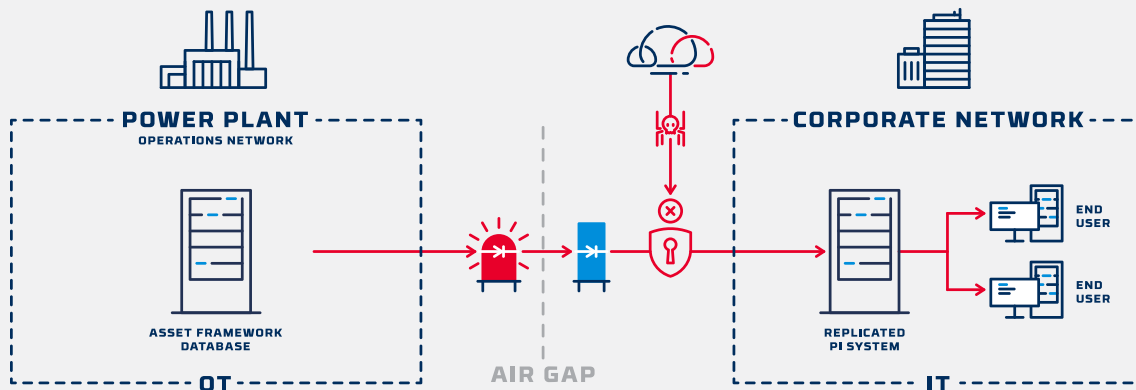
Asset Framework Protocol Adapter

Owl's Asset Framework Protocol Adapter is supported on and included with IXD, Industrial Cross Domain Solution. The protocol adapter interfaces directly with the PI System on the source network of IXD, replicates the Asset Framework data, and utilizes the one-way technology to securely transfer the data across the network boundary for analysis. Once the data reaches the destination network, the Asset Framework protocol adapter will update the Asset Framework database with the most current values. The Asset Framework protocol adapter supports data types such as elements, attributes, and references to PI tags. It additionally supports the ability to allow or deny assets to be replicated, as well as the ability to configure polling and asset deletion.

ASSET FRAMEWORK PROTOCOL ADAPTER CABABILITIES

- PI Web API integration with AVEVA

- Reliably replicates the AVEVA PI Asset Framework database unidirectionally

- Supported data types: replicates elements, attributes, and references to PI tags

- A single platform can simultaneously replicate several data types such as elements, attributes, and references to PI tags.

- Even if a plant network is under attack, Asset Framework data can still be securely and safely transferred due to Owl's unique payload-only transfer technique. Owl uses a protocol break to make sure no routable information is transferred.

- Operations continue without lost time

- Minimal to no modifications to existing operations required

Asset Framework Database Replication

POWER PLANT
OPERATIONS NETWORK

ASSET FRAMEWORK
DATABASE

OT

AIR GAP

CORPORATE NETWORK

REPLICATED
PI SYSTEM

END USER

END USER

IT

IXD Solution

IXD, Owl's Industrial Cross Domain Solution, enables secure one-way and bidirectional data transfers, supports multiple protocols and data types simultaneously, as well as content inspection and filtering, all on a single, 1U appliance. Two IXD's can be deployed for a high availability architecture. IXD provides customers with a scalable security platform, flexible enough to address future needs, with unmatched industrial protocol support, including the Asset Framework protocol adapter.


Mitigate Threats and Retain Business Continuity

By segmenting operational technology (OT) from Information Technology (IT), the Asset Framework protocol adapter can mitigate external network threats to operational systems. This keeps the Asset Framework database protected behind the OT network security boundary. The Asset Framework database in the OT remains protected even if it is shared outside the secure perimeter. Users have access to external data and remote monitoring without remote access, keeping OT secure.

Simplified Compliance

Compliance starts with the ability to provide accurate reporting. The combination of IXD and the Asset Framework protocol adapter provides the data needed to meet standards like NERC-CIP and NRC guidelines while keeping operators secure.

Our team is always available to meet your cybersecurity needs

Power Provider Use Case
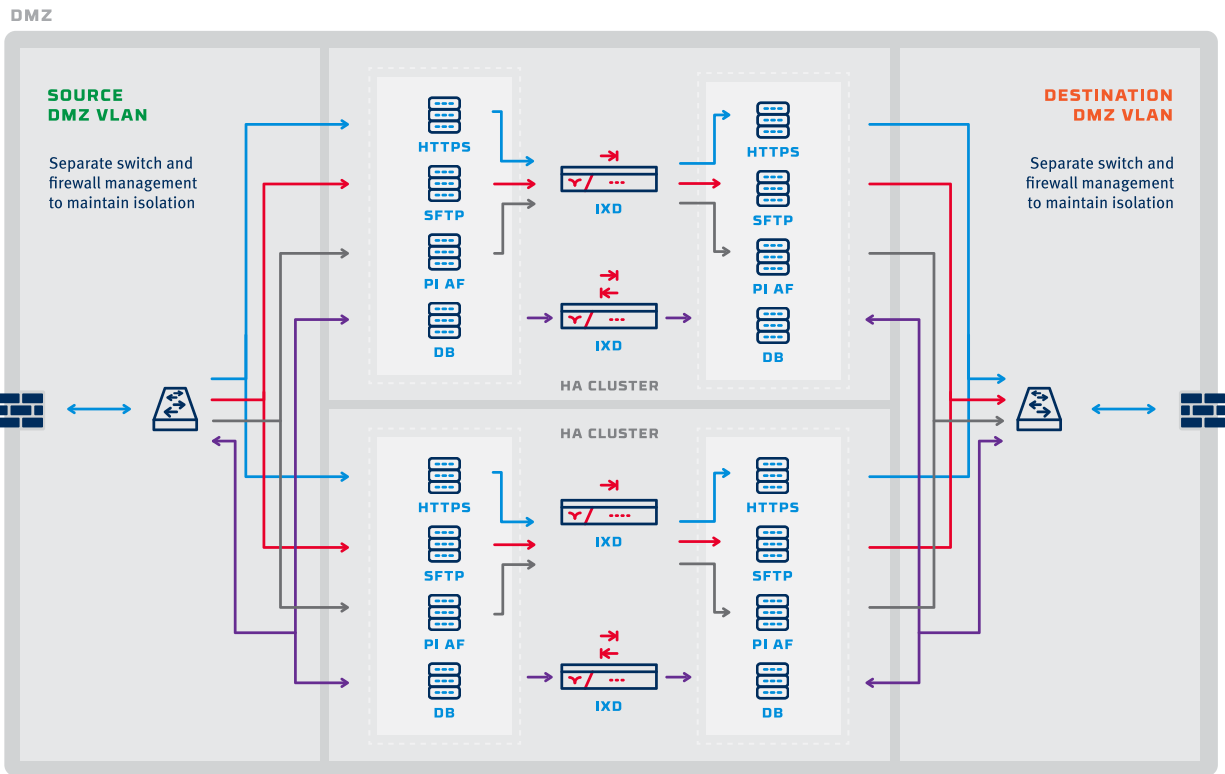
An energy provider wanted to securely transfer files (SFTP) and replicate Aveva PI System and Asset Framework data, one-way, from eight production high availability (HA) clusters to two geographically separated data centers. In addition, they needed to secure several bidirectional database and HTTPS communications that could not be converted to one-way. IXD enabled the energy provider to securely transfer multiple protocols and data types on a single, 1U appliance in a high availability architecture. Data content is thoroughly vetted via the XML Linear Assured Pipeline, a series of non-bypassable filters that are repeated in both the sending and receiving directions. Data is normalized into XML and filtered against schemas and other criteria, guarding against threats within the data, both malicious and accidental. IXD was selected for its unmatched capabilities in handling multiple data types and data flows, simultaneous one-way and bidirectional transfers, and content inspection, with fewer devices and a simpler architecture, at a lower overall cost than other alternatives. This solution provided the customer with a scalable security platform, flexible enough to address future needs with unmatched industrial protocol support.