BROCHURE

Owl PI Transfer Service (OPTS)

Securely Transfer PI System™ Data Across Network Boundaries using Owl Data Diodes and OPTS Software Module

Securely Transfer PI System™ Data Across Network Boundaries

Owl Cyber Defense (Owl) and OSIsoft joined forces in partership in 2009 to secure the replication and transfer of PI System data across networks. The combined technologies of Owl data diodes and OSIsoft's PI System have hundreds of successful implementations around the world, spanning across many industries.

The Owl + OSIsoft Solution

Owl PI Transfer Service (OPTS) software was developed to securely transfer PI System data and other common data transfer use cases across network boundaries. The software interfaces directly with the PI System on the source network of the Owl data diode, replicates the data and utilizes diode technology to securely transfer the data to the destination network. Once data reaches the destination network, OPTS can either build the PI System from scratch or append to an existing one.

Partners in Strong Security

Owl's proven data diode solutions running OPTS software allows users to meet strict security requirements for business practices through hardware-enforced network segmentation and one-way data transfer. As an OSIsoft technology partner, Owl's data diode cybersecurity solutions are available with validated interface software designed specifically to replicate OSIsoft's PI Systems and transfer the information one-way, across network boundaries.

Functions and Data Transfer Capabilities

OPTS can replicate OSIsoft's PI System one-way, across network boundaries. This includes PI System database records, snapshot data, historical archive data, and schema definition. A user can also set up historic backfill and add, modify, or delete points across the data diode to the replicated PI System.

This allows the user to be up and running quickly, since ongoing changes in the plant are automatically replicated to the HQ systems.

OPTS CABABILITIES

- Native PI API integration with OSIsoft™
- PI to PI and PI Data Archive replication options
- Historical backfill and dynamic updates
- High availability configurations (Optional)

SCALABILITY

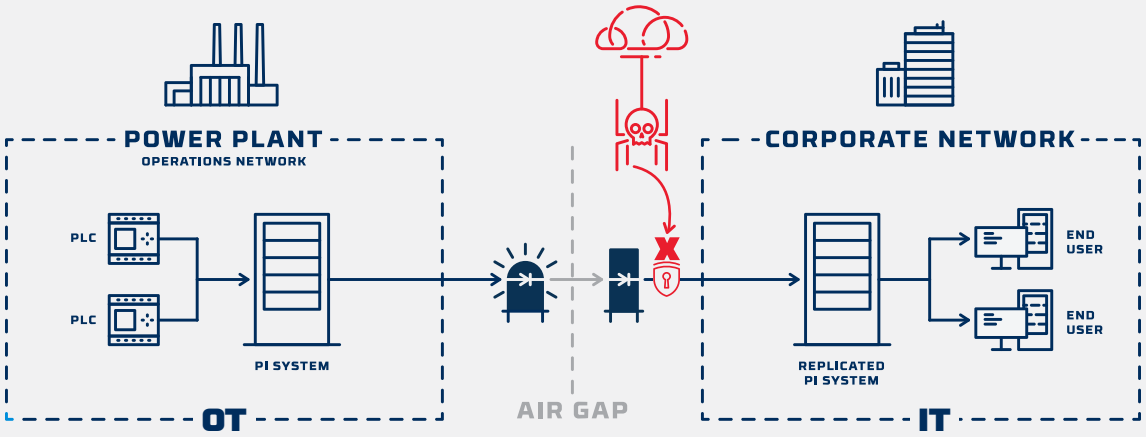
- Users can upgrade their Owl hardware for increased bandwidth and data type requirements. A single Owl platform can simultaneously replicate a PI System and other data types (Syslog, files, SMTP, streaming, etc).
- Ongoing changes in the plant are automatically replicated to the HQ systems.

SECURE

- Even if a plant network is under attack, PI System 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
- Supports authentication via PI Trust

UP + RUNNING QUICKLY

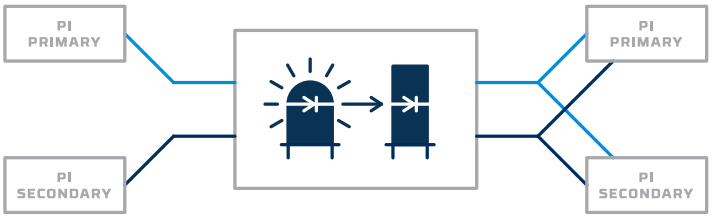
- Minimal to no modifications to existing operations required
  - The PI System destination can be rebuilt from scratch, no need to shut down the database and manually synchronize the source with the replicated PI System.



Supports High Availability and OSIsoft PI Collective

OPTS supports various permutations of redundant source and destination servers (primary source to primary destination, primary source to secondary destination, etc.). Hardware redundancy can be achieved by using Owl's optional High Availability data diode solution. In a High Availability deployment, OPTS interfaces to multiple PI Servers on both the source network and the destination network. In these networks, one of the PI Servers is always designated as the primary. The primary server is the one OPTS will attempt to communicate with first. In addition to the primary, there are one or more secondary servers. If the primary is not available, then OPTS automatically switches to the secondary server and continues replicating. While working with the secondary server, OPTS will also actively try to reconnect to the primary one until it comes back online.

OSISOFT PI COLLECTIVE USE CASE



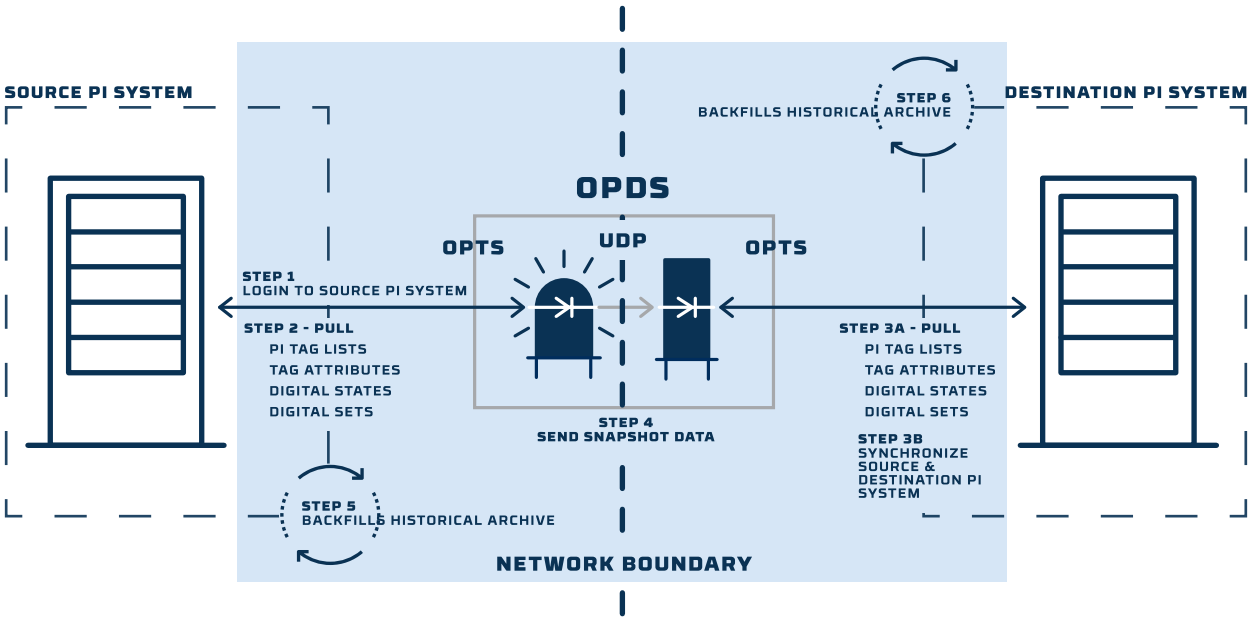
Mitigate Threats and Retain Business Continuity

By segmenting operational technology (OT) from Information Technology (IT), OPTS can mitigate external network threats to operational systems. This keeps the PI System data protected behind the OT network security boundary. The PI System data 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 Owl's data diode and OPTS software provides the data needed to meet standards like NERC-CIP and NRC guidelines while keeping operators secure.

Owl PI Transfer Service (OPTS) & OSIsoft PI System



- **Step 1 -** OPTS logs into the source PI System via PI Trust authentication
- **Step 2 -** OPTS queries source PI System and pulls the PI Tag list, Tag attributes, digital states and digital names
- **Steps 3A -** OPTS pulls the destination PI System database obtaining PI tag list, tag attributes, digital states and digital names
- **Step 3B -** OPTS synchronizes the source and destination PI System by adding/deleting/updating tags
- **Step 4 -** Once the destination PI System is built and synchronized, snapshot data begins to flow
- **Step 5 -** During run time, the OPTS historical backfill feature continuously cycles historical data and passes it the destination PI System
- **Step 6 -** The destination PI System replaces data missing from any unplanned network outage or interruption, ensuring data is never lost

OWL Cyber Defense

Owl Cyber Defense Solutions, LLC leads the world in data diode and cross domain network cybersecurity. With a constant focus on customers in the military, government, critical infrastructure, and commercial communities, Owl develops market-first, one-way data transfer products to meet a variety of operational needs, from entry level to enterprise.

For more information on Owl, or to schedule a demo, visit www.owlcyberdefense.com

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