

Owl PI Transfer Service (OPTS)

One of the tools critical infrastructure providers are using to improve their cybersecurity posture is network segmentation coupled with data diodes. **The data diodes protect the boundaries of network segments from cyber threats while simultaneously allowing data to securely flow out of them.** This is important when end-users outside the plant or facility need access to OSIsoft PI historian data. Owl's solution is a combination of software and patented DualDiode technology which securely transfers data to end users.

The Owl Solution

- OPTS software was developed specifically to securely transfer PI historian data across network boundaries. OPTS interfaces directly with the PI Historian on the source network, replicates the data and utilizes the DualDiode to securely transfer the data to the destination network. On the destination network, OPTS can either build the historian from scratch or append to an existing one.
- OPTS can be configured to either run on off-the-shelf servers or on one of the Owl DualDiode appliances (OPDS-100D, OPDS-MP). Server configurations support larger historians and higher throughput requirements while the appliance devices feature a single, all in one box solution.



High Availability & Collective

OPTS supports HA and Collective configurations on both the source and destination networks. Periodically checking to see if the primary PI server is up, OPTS will work uninterrupted through any swaps between primary or secondary PI server(s) and automatically switch back to the primary once service is restored (see diagram on back).



Multi-Historian Support

A single instance of OPTS is capable of replicating multiple PI Historians in different ways. OPTS can do a simple one-to-one replication where one or more PI Historians are each replicated on the destination network. Or multiple source PI Historians can be consolidated into a single instance of the PI Historian on the destination network. To preserve the original source site of the information a customer selected site specific identifier is appended to each discrete tag name and value.



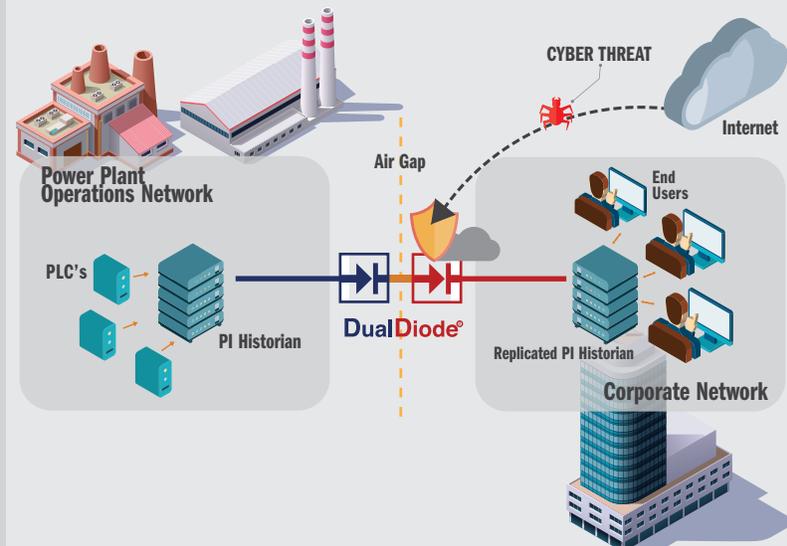
PI Data Transfer Types

Via a single UDP connection, OPTS transfers PI database records, snapshot data, historical archive data and schema definition. This provides real-time transactional data updates, access to historical information to backfill after any service interruption, the ability to build a new PI database from scratch and full support for add/modify/delete for both data and the schema. This robust capability also supports true PI to PI replication.

USE CASE:

Operating in a fossil powered electrical generation facility, OPTS is replicating a PI Historian from the Operations Technology (OT) network to the business (IT) network.

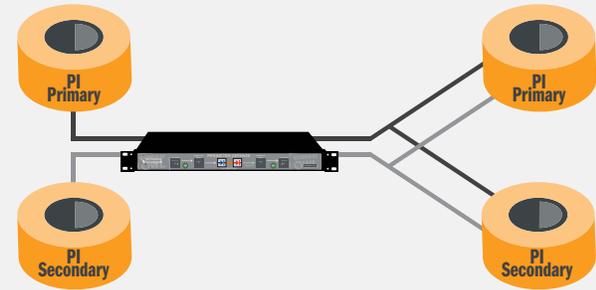
This configuration allows the DualDiode to secure the network, provide end-users on the IT network access to operational information for management and support functions and allows the company to meet NERC CIP compliance requirements.



High Availability Architecture

In a High Availability deployment, OPTS is interfacing to 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, this is the server OPTS will always try 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 until it comes back online.

OPTS supports the various permutations of redundant source and destination servers (Primary source to Primary destination, Primary source to Secondary destination, etc.)



DualDiode Technology®

Owl's DualDiode Technology is built around patented circuitry which only allows data to physically flow in one direction thereby preventing all network based cyber attacks. The design also includes a deep protocol break which terminates all Ethernet traffic, transfers the payload via the ATM protocol and then converts it back to Ethernet. This has the unique benefit of hiding all the IP and MAC address information from the outside world and preventing any probing of the network. This technology comes in different form factors depending operational environment.

DualDiode Platforms

The Owl Enterprise Perimeter Defense Solution (EPDS) is a server based solution that incorporates Owl DualDiode cards into off the shelf servers and provides the highest possible throughput of all the Owl solutions.



*Owl Uses a Pair of Dell PowerEdge R620 servers or equivalent.

The Owl Perimeter Defense Solution (OPDS- MP) - (MP) is a Multi-Purpose all-in-one rack-mountable 1U appliance. Depending on user application bandwidth requirements, speeds range from 26Mbps up to 155Mbps.



The Owl Perimeter Defense Solution (OPDS - 100D) - (100D) is an all-in-one DIN rail version of our DualDiode solutions supporting up to 100Mbps.



Service & Support

Customers under a current services agreement are provided 24x7x365 access to telephone and electronic messaging systems for standard Software and Hardware Technical Services for all Owl products. Technicians are normally available for problem solving between 8:00 AM and 5:00 PM EST Monday - Friday.

About Owl

For over 16 years Owl Computing Technologies has been implementing next generation cybersecurity solutions for critical networks. Owl's DualDiode Technology®, a proprietary data diode, boasts 24 technology patents and has over 2,000 successful deployments globally across intelligence, government, military, utility, energy, and other critical infrastructure networks. Owl's hardware-enforced technology ensures secure networks and enables the reliable and robust transfer of all data types and file sizes.