

Owl Computing Technologies has been solely focused on developing and providing Cybersecurity solutions for over 16 years. We have 24 different technology patents, over 200 documented security features in our products and protect the security and integrity of networks operated globally by the U.S. military, U.S. Intelligence agencies, critical infrastructure providers and financial institutions.

We develop, market, sell and support a line of cybersecurity products focused on two tasks:

1. Mitigate cyberthreats against a protected network
2. Provide a trusted, one-way only transfer of data into or out of the protected network

Cybersecurity Segmentation – Protecting Critical Cyber Assets & Networks

As awareness of cyberthreats and breaches has increased, companies are identifying their most valuable assets and looking to implement a cybersecurity segmentation strategy around them.

Segmentation offers the benefit of increasing security by isolating assets from each other and requiring additional effort to penetrate multiple segments. The downside is that traditional segmentation (air gap) can inhibit the exchange of information between repositories and end-users.

Enter the data diode. Owl has developed a hardware-based DualDiode, the Owl Perimeter Defense Solution (OPDS), that allows the automated, one-way flow of data without exposing a network segment to cyber threats or attacks.

In fact, independent third parties have identified the data diode as the strongest network security solution short of physically disconnecting from the network segment and creating an air gap.

Data Types and Standards

The design of the DualDiode provides a robust, low latency, high throughput solution capable of simultaneously transferring multiple data flows consisting of different protocols (SMTP, TCP/IP, UDP/IP, FTP, etc.), different data types (files, video streaming, email, alarms, alerts) with scaleable bandwidth requirements (10Mbps to 10Gbps) to various end points (databases, SCADA, network monitoring services).



OPDS DualDiode Technology

The deterministic data diode hardware handles the high speed data transfers into or out of the network while software interfaces on either "side" of the diode support standards based security, industrial and IP protocols along with a long list of data types including alerts, files, video streaming, databases, historians, monitoring data, event logs, system errors, and high resolution images.



Owl Perimeter Defense Solution (OPDS) - network cybersecurity in a single appliance

The core technology of the DualDiode moves data at the transport layer making the solution extremely flexible and able to fit into wide range of data flows and use cases. Software modules interface with the network on either side, using standard IP protocols allowing those networks and applications to operate normally while being protected from cyber attack.

Applications

Most technologists, upon hearing that data diodes are one-way, struggle to understand where this technology would be applicable in their network(s). However, Owl has devised a seamless middleware application that terminates the two-way session on the source side, uses a secure one-way methodology to move data across the data diode and network perimeter and then reestablishes two-way communications on the destination network. We have over 2,000 deployments using this technology to support a host of scenarios, data types, protocols and standards.

For the financial services market, the Owl OPDS offers patented technology specifically designed around replicating and securing databases; and data filtering. This can be used for disaster recovery, redundancy, or increased security.

In addition, there are a number of readily applicable areas for use:

1. Any location that an air gap or "walknet" is implemented
2. Situation where a one-way transfer was implemented using a software solution (i.e. firewall)
3. Protection of back office operations (i.e. bill processing) where the operation itself needs to be protected but the output needs to be distributed
4. Securely updating data repositories while protecting them against unauthorized access
5. Secure transfer of software updates/patches into a secured data center or other facility
6. SQL/database replication.

Use Cases

Existing Owl financial services industry customers are using our products in a number of different ways, leveraging the core technology to fit different work flows and security scenarios including:

1. Storage of ATM Photo Images

Imagery taken during ATM transactions is transferred from the remote ATM locations to a central repository for archiving. Using the DualDiode allows the information to flow into the archive but prevents access into the archive by other parties and or the removal of any material. Watermarks are used on the data and content inspection is performed. This is very similar to many of the DoD and Intelligence agency deployments we have where information is gathered in the field and secured at a central location.

2. Remote Monitoring of Data Center

A highly secured data center was "air-gapped" for security reasons. This required on-site or close proximity support personnel. With the use of a data diode, monitoring data (error messages, alarms, syslog msgs, etc.) can be transferred out of the secured enclave without incurring any cybersecurity threats. Support personnel can now monitor the data center remotely and do not have to be on-site 24x7. This is an example of a data diode securing a facility while transferring data externally for remote monitoring purposes.

3. Transfer of Sensitive Accounts to Repository

This institution maintained accounts with high-profile government officials and wanted to ensure those accounts were well protected. A DualDiode was deployed to transfer the account information into a highly secured repository. This is an example of a data diode securely transferring data into a secured facility to prevent access.

4. Transfer of Large Files and High Volume Data Flows

The DualDiode 10Gbps solution is capable of quickly transferring very large files or large data flows at full line rate. Customers can use this capability to either move files like "captured" images of laptops or replicate full network flows for further analysis and threat detection.

Defense in Depth

Owl prides itself in the multiple layers (depth) of security that our products offer. Not only do they defend networks against cyber threats but they also defend themselves. During government accreditation, over 200 different NIST recommended security attributes were documented, including the use of a full ATM protocol break, virus/malware detection, checksum/hashing algorithms, suppression of routable information, role based logins/passwords, deep packet inspection, locked down OS and physical separation of admin functionality.

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