

## Patented. Secure. Database Replication.

As companies become more agile and adaptive to market conditions, data has become critical to their business operations and decisions by definition. Most data ends up in some kind of data repository or database. These databases need to be protected from cyber threats and replicated for either remote user-access or for disaster recovery. Owl's Secure Database Transfer Service (SDTS) is fully integrated with the OPDS DualDiode product line and provides a way to securely replicate databases across network security boundaries while protecting network segments from cyber attacks.

### The Owl Solution

- The Owl SDTS software application is a patented technology that securely replicates relational databases across network security boundaries. Deployed in conjunction with Owl's DualDiode® Technology, the SDTS application facilitates the replication of RDBMS data across the security boundary of a network. Designed for interoperability with all major relational database management systems, SDTS has been tested with Oracle 11 and Microsoft's SQL Server.
- SDTS uses a proprietary (patent pending) database query algorithm to perform extremely reliable real-time database replication between source and destination. For example, SDTS could replicate data from a high security source database to a "read only" database on a different security domain, thereby protecting the source from cyberattack but allowing users to access a copy of the data. Highly scalable, SDTS can be configured to query and replicate an entire database or a subset of the database. This includes transactional based replication or backing up complete databases as discrete file transfers.



**OPDS-1000**  
Fastest, most scalable DualDiode on the market, supporting up to 1Gbps of throughput



### Patented Backfill

SDTS employs a patent-pending automatic backfill of data in the event of network outage. Under normal operation data is transferred by SDTS across the DualDiode from the source side to the destination on a recurring basis. As a redundancy measure, all updates are also accumulated into a second larger update file which is sent less frequently. This ensures the system can "bridge" any network outages and keep the source and destination databases synchronized.



### What is DualDiode Technology?

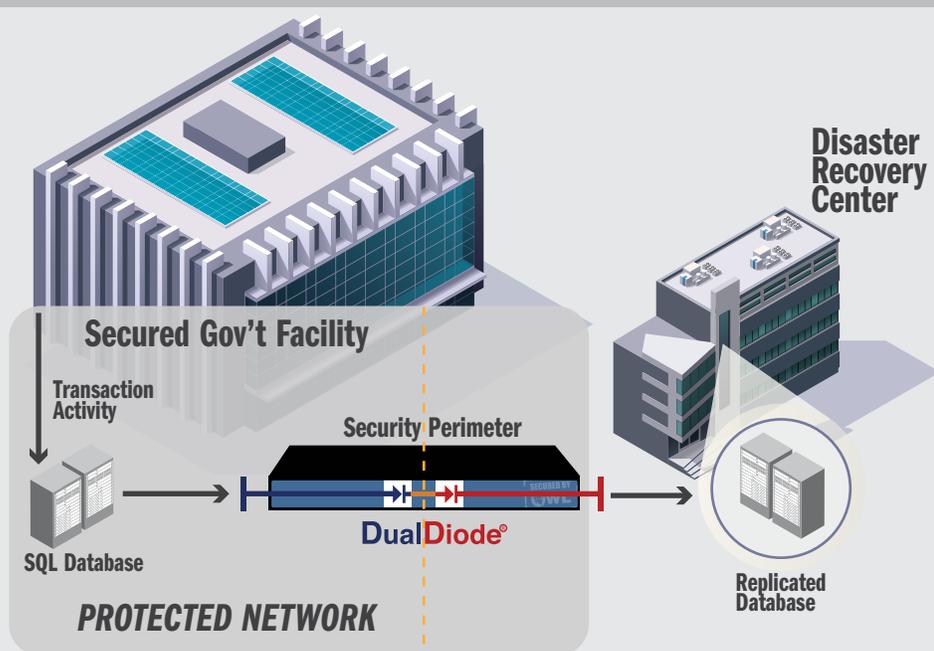
DualDiode® products from Owl are hardware based cybersecurity solutions engineered to segment and protect networks that simply cannot afford to be compromised. This patented hardware design has a send only side and a receive only side that only allows data to physically flow in one direction. Combined with a true protocol break, the DualDiode conceals all IP information, preventing unwanted network probes and network cyber attacks.

### USE CASE:

#### Replication for Disaster Recovery

A secure government facility stores operational activities in an on-site database. They had a requirement to replicate snapshots of their database(s) to a remote data center for disaster recovery purposes. The solution consists of the SDTS application to manage the database interactions and the DualDiode for cybersecurity.

The facility relies on the DualDiode to segment their network from other external networks and prevent any cyber attacks against it. At the same time, the DualDiode allows the database files to be transferred out of the secure facility to the remote data center. While not depicted in this scenario but commonly deployed, the customer could have also chosen to put a DualDiode at the edge of the data center to increase their security profile at the data center.

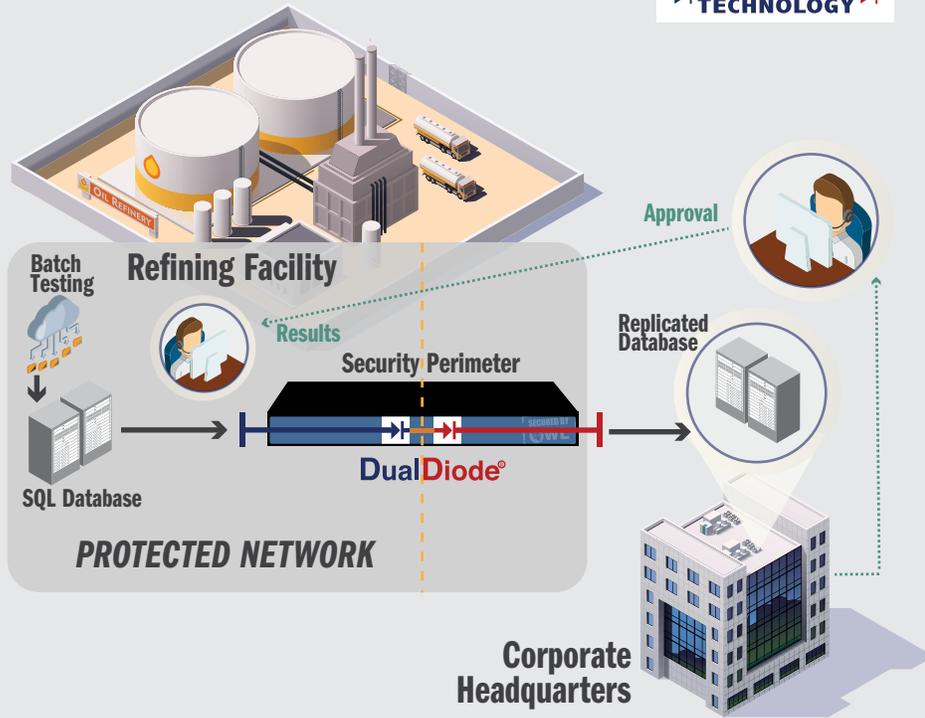


**USE CASE:**  
**Secure Quality Control Approval**

A petroleum production facility uses a LIMS (Laboratory Information Management System) to maintain Quality Control over their production processes. Working at locations that are remote from corporate headquarters, labs process the outputs of each step in the refining process and record those results in a database. Prior to the batch moving on to the next step in the process, approval of the testing results is required.

To achieve this, the data containing the lab results is extracted from the database, transferred across the data diode and replicated in another centralized database. From there supervisors can review the results and call the plant operators with verbal confirmation to move the batch along to the next step.

STDS manages the process of collecting the data from the database, and uploading it to the replicated database on the other end. The DualDiode secures the boundary of the plant, allows data to transfer out of the network without any possibility of network attacks.



**Transactional Replication vs. File Replication** - The two use cases presented above reflect the flexibility of the SDTS application. For the government facility SDTS is moving the database as discrete files and uploading them at the destination to build a complete database. This occurs infrequently (once a day). In the refinery use case, SDTS is moving much smaller amounts of data much more frequently (minutes or seconds). This creates a much more dynamic environment and allows the remote supervisors to stay up to date with plant activities.

**DualDiode Platforms**

**OPDS-100 & OPDS-1000**

Utilize the same form factor and functionality with two different throughput ranges, 10Mbps - 104Mbps and 155Mbps - 1000Mbps respectively.



**OPDS-100D**

Utilizing the DIN rail form factor, the 100D provides the same functionality as the 100 and 1000 with throughput ranging from 10Mbps - 104Mbps.



**OPDS-Enterprise**

This solution uses the DualDiode cards in a dual server configuration. Designated for scenarios where higher processing power for database manipulation is required.



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

**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, financial services, 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.

