

Owl Enterprise Perimeter Defense Solution

The EPDS maintains process control network isolation while enabling critical information sharing with networks outside the electronic security perimeter. It is a one-way data transfer solution, supporting multiple data types, formats -- and subscriber users -- concurrently across a single secure controlled interface. This controlled interface establishes an absolute protocol break, ensuring one-way only transfer between sending & receiving networks. EPDS integrates complete Send-only and Receive-only server platforms, connected by proprietary Owl DualDiode® Technology.

The Owl Solution

- The Enterprise Perimeter Defense Solution is mounted on independent Send-only and Receive-only servers. Owl can provide the complete EPDS & servers solution, or the client provides servers for the installation of EPDS master software. The Send-only Owl DualDiode® Communication Card and driver are installed in the server connected to the transmitting network; the Receive-only Card, in the server on the destination network. This PCIe-format hardware is connected by fiber optic cable. Operator bandwidth requirements dictate which DualDiode Communication Card set is required. For EPDS, Owl offers link speeds of 155Mbps, 1.25/2.5Gbps, and 10Gbps. Owl software connectors are installed in each server in support of the operator's application set.



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



Security Features

- High capacity absolute one-way-only transfer
- Security-policy hardened OS
- User role-based admin access



Operations Features

- Enterprise-scale support for TCP/IP, UDP & file formatted data
- Database historian secure replication
- SCADA secure transfer
- OPC & Modbus interfaces
- Transfer capacity range



Benefits

- Industrial control system reliability & availability
- Operations networks isolation with secure information sharing
- Critical digital assets protection
- Prevents unauthorized access



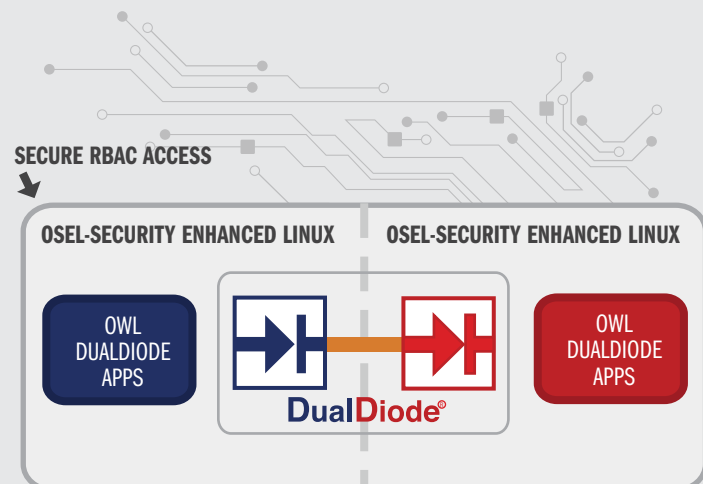
Operator Application Support

EPDS enables the secure transfer of a wide range of user data types and formats. Among those supported natively are:

- File transfer via Owl Remote File Transfer Service (RFTS), FTP and SFTP
- SMTP email support
- TCP/IP packet transfer
- UDP datagram transfer (including streaming video & sensor)
- Syslog and SNMP Trap administrative traffic.

Several database historians (GE Proficy® Historian, Scientech R*Time®, etc.) use Owl native TCP or UDP transfer.

A range of optional software connectors is available for specific database historian replication. Among these are support for Invensys Archestra®, and OSIsoft® PI System®. Software connectors are also available for standards-based OPC interoperability and Modbus environments.



OWL EPDS DEFENSE-IN-DEPTH

EPDS Operating System & System Administration

The security imposed by an Enterprise Perimeter Defense Solution is only as rigorous as the environment in which the solution operates, and the controls placed on those administrators given privileged access to the solution's operation. The EPDS architecture itself enables secure defense-in-depth, and provides the customer a component of an overall IT/OT defense-in-depth strategy.

The Owl EPDS performs its functions in a hardened Linux OS -- Owl Security Enhanced Linux (OSEL). The OSEL profile applies explicit constraints and limits on what tasks the operating system can perform, and on what functions software applications (including Owl proxy applications) can deliver. Activities in violation of these constraints/limits are prohibited. Applications attempting to act outside defined, specific, functions are disabled. Network security is maintained.

Access levels to EPDS administration are explicitly defined, as well. Owl and the customer operator define privileged administrator profiles and their levels (or roles) of permitted functional activity. EPDS enforces user-case defined Owl Role-based Access Controls (RBAC). RBAC employs UNIX best practices, sudo methods, and text-based user interface menus to minimize command-line access. Typically, a descending hierarchy of RBAC access includes an Information Assurance Officer (security-related tasks), SysAdmin (system admin tasks), Audit Manager (log file tasks), and Console Monitor (view-only local console access).

Specifications

Card Software:

Secure Transfer System Send/Receive drivers & Send/Receive install software, depending on operator application needs

Control Systems Interface & Application Options:

General Electric iFix
 General Electric iHistorian
 General Electric OSM
 InStep eDNA
 Matrikon Alert Manager
 OSisoft PI System
 Scientech R*Time
 Siemens SIMATIC WinCC
 Siemens SINAUT

SCADA Connector Options:

DNP3
 ICCP
 Modbus
 OPC

Monitoring Options:

CA SIM
 CA Unicenter
 HP OpenView
 Log Transfer
 Remote Screen View

File Transfer Options:

CIFS (Remote folders)
 FTP
 FTPS (SSL)
 RCP
 SFTP (SSH)
 TFTP
 Owl RFTS

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.

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.

