DATA SHEET

MDRS
Multi-Level Data Retrieval Solution

MDRS BENEFITS

- Increased productivity for multiple analysts
- Reduction in desktop equipment for multiple analysts
- Economies of scale by supporting multiple analyst enterprise level services
- Improved security in inter-network connections
- Comprehensive auditing of classified data access and use

KEY SECURITY POLICIES

- Data diode technology prevents data leakage and unauthorized access
- NFS commands are restricted to copy, read (no delete, change, write)
- Secure OS confines applications to approved operations
- One-way only data transfer maintains secure and isolated domains

Cross Domain Data Retrieval

In secure, classified environments, analysts often need to access files stored in other domains as part of their analysis. Standard practice is to complete and submit a data requisition and wait for the files to be brought to their security level. To avoid this significant delay, a cross domain solution (CDS) capable of bidirectional data flow is needed that can allow data to be directly viewed from other security levels without having to move the data to their security level.

The Owl Solution

The Owl **Multi-level Data Retrieval Service (MDRS)** is a comprehensive hardware & software solution that provides a seamless NFS proxy service across a dual-path transfer platform. The Owl MDRS enables analysts to quickly and seamlessly access files in other security domains without having to wait for data requisitions to be completed. Analysts are able to “browse down” to lower security levels or in some cases, “browse up”, to access files housed at higher security levels, in the cloud or in other domains, or retrieve portions of very large files.

Using patented Owl technology, MDRS modifies the traditional two-way communication path used by NFS and enables two discrete, single direction paths (request & response) in a single Owl Cross Domain Solution (OCDS/ECDS) implementation. Each path passes through a distinct and isolated data diode, which protects the integrity of each network while allowing files to be transferred. MDRS maintains secure and isolated domains while requesting and accessing files through a transparent and secure implementation of the Network File Sharing (NFS) protocol. Cross domain security is maintained with a hardened RHEL operating system and strictly defined role-based access controls (RBAC).

MDRS Applications - H2L & L2H

User implementations of MDRS enable a variety of secure query-response applications, with both query and response paths supporting independent transfer capacities and security policies. MDRS will support either high-to-low (H2L) or low-to-high (L2H) data retrieval.

In a H2L "browse-down" scenario, users can address how to best manipulate elements of very large files without having to bring the entire file into the user enclave. A query/request is placed via MDRS on the file storage site, for example, in a secure data farm. The element to be examined is delivered to the higher security enclave via the MDRS secure response path. If SAMBA is installed, the SAMBA UNIX-Windows interoperability suite delivers content to other staff in the higher security space. MDRS delivers secure access and use remains limited to CDS user roles.

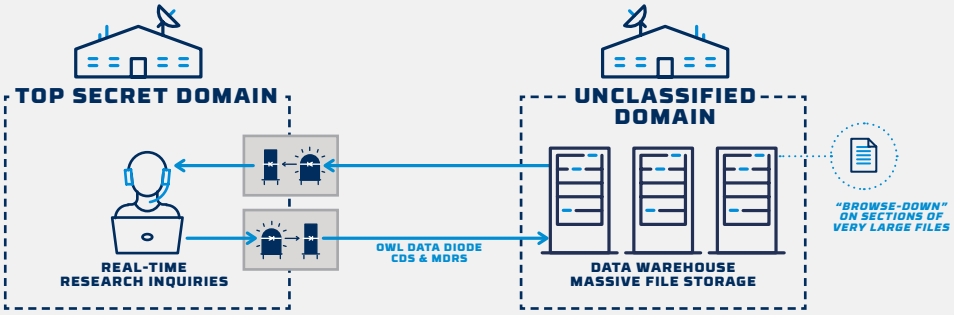
In a L2H scenario, large amounts of unclassified non-standard imagery are stored in a higher security environment. The challenge is how to access this material from lower security networks. The MDRS mechanism allows users to "browse-up" to this valuable resource, while maintaining its storage status in the higher security space.

MDRS operation is transparent to the end-user. Customers need not modify any legacy software for performing normal NFS mount operations or accessing files from established mount points.

USE CASE

MDRS IN ACTION

In a H2L "browse-down" scenario, users in a Top Secret secure enclave need access to elements of very large files in an unclassified domain. The Owl MDRS enables these users to access pieces of these files from the Top Secret domain without having to transfer the entire file into the user enclave.



Hardware Architecture

Owl's data diode technology is built around patented data diode circuitry which only allows data to physically flow in one direction thereby preventing all network based cyberattacks. The design also includes a protocol break. This has the unique benefit of hiding all the IP and MAC address information from external networks and preventing any probing of the network. The Owl MDRS comes in two different form factors depending on the needs of the operational environment:

ENTERPRISE CROSS DOMAIN SOLUTION (ECDS)

Two Sets of Two Communication Cards (Send/Receive), with Each Card Installed on their Own Enterprise Server (Four Total Servers)

***Owl uses a pair of Dell PowerEdge servers or equivalent**

OWL CROSS DOMAIN SOLUTION - 1000 (OCDS-1000)

Small Form Factor, with Two Complete Data Diodes (Send/Receive) Deployed in Two 1U Enclosures

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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