

Fibersystem Data Diode Middleware (DDMW)

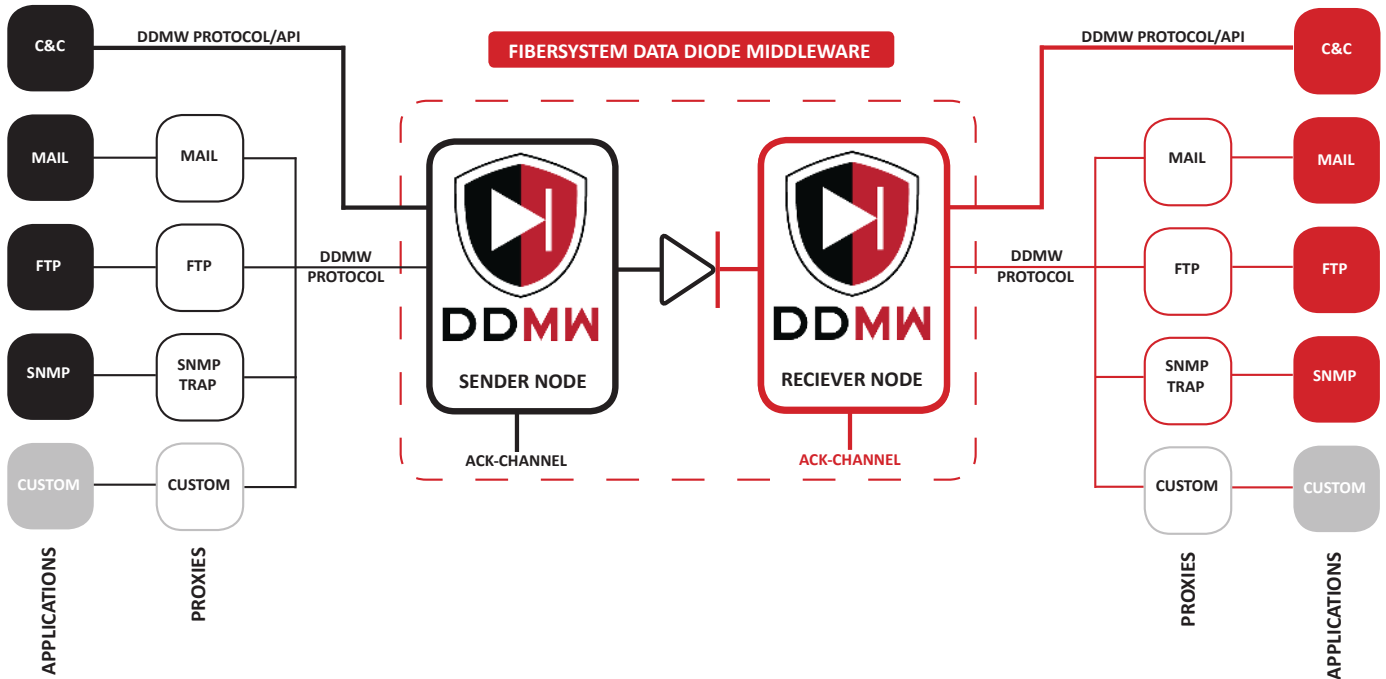
The primary problem with uni-directional ethernet data links is that no acknowledge information from a receiving system can be transferred back to the sender, so the sender has no way of knowing if the data it sent has been received. The workaround for this issue is to send and receive data in a controlled manner to avoid data loss.

The Data Diode Middleware (DDMW) is a software solution for transferring data over data diodes in such a controlled manner. It consist of a sender node and a receiver node which communicate through a uni-directional ethernet Data Diode. (See page 3)

DDMW supports two kinds of transfer types; messages and streams. Messages are any type of data with a finite and predefined length, like files and command instructions. Streams are data which either do not have an end or which does not have a predetermined length, such as an audio or video stream.

DDMW Features

- Transfers are interleaved
- Adjustable sender packet count, size and pace to allow environment specific optimizations
- Optional side-channel ACK's/NACK's
- Configurable redundancy
- Heartbeat packets can be used to make sure link is up (and alert if heartbeats are missed)
- Management interfaces to the sender and receiver nodes allow integration with monitoring systems.
- Each transfer is hashed and verified on the receiver node
- "Immediate mode" allows transfer of large messages to begin immediately rather than wait for the entire message to arrive at the sender node



DDMW Basic Functionality

- Queue Mgmt
- Logging
- Mail
- FTP
- SNMP
- Syslog
- UDP pass trough
- SDK, source code examples included for proxy developers

Application Examples

- C&C (command & control)
- Mail
- FTP
- SNMP
- Syslog
- Custom developed or your own proxies

ACK-channel

While acknowledgements can not be sent over the Data Diode, the DDMW sender has an interface for accepting ACK's for messages it has sent. An organization can optionally use a side-channel of their own choosing to send ACK's or NACK's back from the receiver to the sender. This can be a fully automatic system or a manual system like an operator calling another operator and verbally communicating ACK or NACK together with a unique transfer identifier.

Technical overview

The sender node uses a simple protocol for accepting data it should send to the receiver, and the receiver node uses backend plugins which are used to process data which has been received over the Data Diode link.

For easy application integration DDMW comes with several proxy services for a few protocols commonly used over Data Diodes.

The sender and receiver nodes are delivered either as software installation packages for common operating systems, or as embedded devices (complete hardware and software solution).

DDMW SW and HW requirements

- DDMW Sender/receiver node OS
- Ubuntu 18.04 LTS
- RedHat 6&7
- CentOS

DDMW HW (recommended)

- Midrange XEON
- 16GB RAM
- INTEL NIC
- SSD disk or better PCI-E SSD

Ordering information

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Product number	Description
60-00-7367	Data Diode Middleware (DDMW)
60-00-7510	Data Diode Middleware Support and Maintenance 12 months
60-00-7511	Data Diode Middleware Support and Maintenance 24 months
60-00-7512	Data Diode Middleware Support and Maintenance 36 months
60-00-7513	Data Diode 100Mbit (60-00-7304) and DDMW 3 months license
60-00-7514	Data Diode 100Mbit (60-00-7304) + DDMW + Support and Maintenance 3+12 months
60-00-7515	Data Diode 100Mbit (60-00-7304) + DDMW + Support and Maintenance 3+24 months
60-00-7516	Data Diode 100Mbit (60-00-7304) + DDMW + Support and Maintenance 3+36 months
60-00-7517	Data Diode 1Gbit (60-00-7303) and DDMW 3 months license
60-00-7518	Data Diode 1Gbit (60-00-7303) + DDMW + Support and Maintenance 3+12 months
60-00-7519	Data Diode 1Gbit (60-00-7303) + DDMW + Support and Maintenance 3+24 months
60-00-7520	Data Diode 1Gbit (60-00-7303) + DDMW + Support and Maintenance 3+36 months

For information about Fibersystem Data Diodes, see www.fibersystem.com/data-diodes