

Small White paper

Fort Fox Data Diode:

A Preferred Solution For High-Security
Real-time Electronic Data Transfer
Between Networks



Executive Summary & Introduction

Every network needs to be updated at some point with electronic data from an external source, like another network. This is a relatively straightforward task. However, in the case of high security environments, physical connections to other networks are not allowed for security reasons. The transfer of electronic data therefore has to take place manually, using a USB stick, CD or similar device. It involves copying data from one network or system onto the portable data storage medium, transferring the medium to the receiving network and subsequently importing the data. Unfortunately, this form of data transfer is never real-time and more important introduces security risks through the loss of the portable storage medium or its incorrect disposal. This is indeed a critical issue when considering high-security, confidential data.

This is where the Fort Fox Data Diode really comes into its own, as this white paper will further explain. This hardware-based data security solution from Fox-IT is ideal for transferring data optically between two networks, where the receiving network has a high security level and cannot, or should not, be connected to another network.

Central to the Fort Fox Data Diode solution is the Fort Fox Hardware Data Diode, which operates in a unidirectional mode and deploys a light source and corresponding photocell to conduct the actual data transfer.

A Fort Fox Data Diode configuration can also have two optional server computers connected to the transmitting and receiving networks to provide additional user and network-administration functionality. This enables users of the receiving network to receive e-mail from outside their network, print locally or access frequently used websites. This is done without exposing their high-security network to outside threats.



Security and data integrity are also further enhanced through the use of encryption, and error detection and correction.

Developed primarily for security-conscious government authorities, such as defense organizations, intelligence agencies and the police, the Fort Fox Data Diode is also well suited for deployment by commercial organizations seeking a secure, one-way data link between two physically separated networks. Typically, these organizations could be financial institutions or highly competitive R&D environments.

Secure data-transfer applications range from transmitting tax returns to a tax authority's back-office network; transferring intercepted telecom data to a police or intelligence network for analysts to examine; to transferring data between NATO's secret network and a member government's own high-security network.

The Fort Fox Data Diode's proven technology, currently deployed in several countries and within multiple agencies, ensures a hundred-percent-secure, one-way network connection between two networks of varying security levels, without compromising the security of the receiving network. Equally important, the transfer—automated or manual—of data is easy and user-friendly to perform, offering network owners and administrators savings in time, effort and cost.



What Is The Fort Fox Data Diode?

The Fort Fox Data Diode is an elegant solution for the high-security transfer of data between networks.

Central to the Fort Fox Data Diode solution is the Fort Fox Hardware Data Diode, a unique hardware-based,

communication device, which makes use of a gigabit optical data link to transfer data in a single direction (hence the term 'diode'), between a low-security network and a network with a high-security level. Needless to say, this solution can also be used where both networks have the same level of security.

The Fort Fox Hardware Data Diode can be deployed on its own, or in combination with two optional Intel-based servers, where one is connected to the low-security (black) network, and the other to the high-security (red) network (see Figure 1).



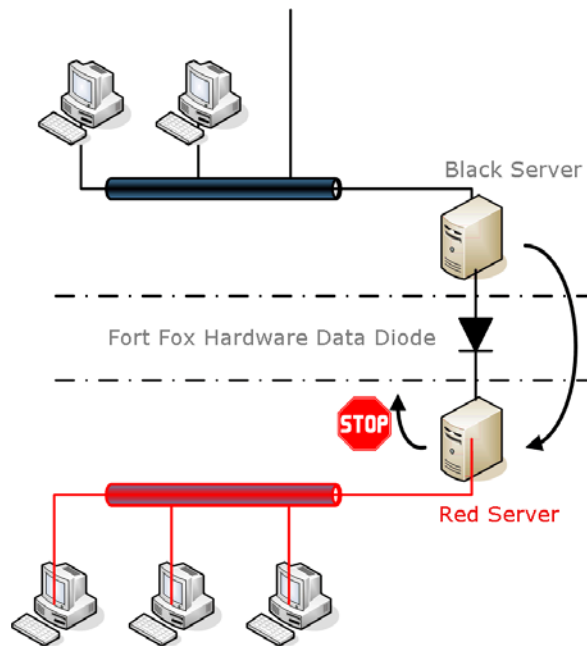


Figure 1: A typical Fort Fox Data Diode configuration

The Fort Fox Data Diode also can also provide added protection through encryption (optional), as well as data integrity by means of error detection and correction. Each server comes with an easy-to-use web interface, which allows authorized users to specify and initiate a data transfer.

A Fort Fox Data Diode transfer is not limited to data files. It can also contain a backup mirror image of frequently used websites and servers, a print job or even incoming email. This provides red network-users with added functionality and flexibility. For example, they can receive (although not send) e-mail from outside their network¹. Frequently used websites and FTP servers can also be mirrored and accessed locally. Furthermore, print jobs from the black network can be received on the red network and printed locally.

¹ Fox-IT is currently developing a new solution that also allows a user to send signed e-mail messages from the red network as well. Please contact Fox-IT for more information and the release date.



Most of all, network administrators are saved the effort, time and cost of transferring data manually on data-storage media.

Contact Information

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