Data Diode vs-diode

High-Speed One-Way Data Transfer in SECRET Classified Networks

Do you want to transfer data to networks classified as SECRET – so-called red networks – from black networks classified at a lower level? Typical examples for such data would be e-mails, database or video information, or updates for anti-virus or other software. genua has developed the vs-diode data diode for just this task – data transfer across black-red interfaces – with approval up to the SECRET classification level.

One-Way Data Transfer to Red Networks
The vs-diode only allows data transfer in one direction – from black to red. Flow in the opposite direction is consequently blocked, ensuring that classified data cannot cross the interface to the black network. An important feature of the vs-diode is its high performance and reliability in one-way data transfer, achieving up to 1 GBit/s throughput. The strength of this solution comes from the new technology used in the vs-diode, setting it apart from other solutions on the market.

The vs-diode Components
- two high security firewalls (application level gateways), which regulate the data contents at the application level
- in between: a filter which provides the diode function

Performance:
Quick and Reliable Data Transfer
One firewall system is connected to the black network and receives the data being transferred from the sender. If required, the data can be scanned for viruses and other malicious software on reception to additionally protect the red network. The data is then forwarded via the intermediate filter system to the second firewall, which is connected to the red network. The filter system allows communication in the one direction but blocks all data transfer in the other – with a single exception: a final status message, indicating that all data has been properly received, is sent from the second to the first firewall. This minimal feedback is required by the FTP, SMTP and TCP protocols in order to ensure rapid and secure data transfer.

Your Benefits:
- One-way data transfer: from black to red networks
- Supported protocols: FTP, SMTP, SNMP Traps, TCP, Elastic Stack and UDP
- Performance: reliable data transfer up to 1 Gbit/s
- Security by design: guarantees the highest level of security
- Approval: up to the German SECRET classification level
- Handling: simple operation and configuration
- Customer service: direct from the manufacturer
**Security by Design for Maximum Security**

How does this minimal feedback channel affect the security level? Other diode solutions intentionally avoid using a feedback channel in order to physically exclude any return flow of data. The vs-diode uses modern technology to solve this challenge: The key diode function – which only has a few hundred lines of program code – runs on a microkernel operating system that has been reduced to an absolute minimum. The complexity of the diode processes thus has been reduced to a minimum, making them simple to analyze. The entire code can be examined and formally verified to ensure there are no errors in this key component.

**Approval up to the SECRET Level**

The compact design principle of the vs-diode is its central feature and has also convinced the German Federal Office for Information Security (Bundesamt für Sicherheit in der Informationstechnik, BSI), which has granted approval up to the SECRET classification level. This means that the high level of security provided by our solution has been independently verified by a government organization.

**Configuring Important Applications for High Security**

Use the vs-diode to securely configure reliable, high-speed data transfers from black to red networks. Examples are:
- connecting e-mail systems
- mirroring databases for GIS and FüInfoSys
- streaming video and radar data
- transfer of data for anti-virus and software updates

**User-Friendly Operation and Customer Service**

The vs-diode is easy to operate due to its minimalist construction. Even a configuration error cannot allow a security vulnerability to open up – the static diode function cannot be overcome. Nevertheless we will be happy to assist you with installation and support – a service straight from genua, the manufacturer.

**About genua**

genua is a German company specializing in IT security. It has been securing networks and developing sophisticated security solutions since the company was founded in 1992. Our business activities range from securing sensitive interfaces in public authorities and industry to networking highly critical infrastructure, reliably encrypting data communication over the Internet, remote maintenance solutions and providing remote access for mobile users and home offices. Our solutions are developed and produced in Germany. Many companies and public authorities rely on solutions from genua to protect their IT. genua is a member of the Bundesdruckerei Group.

Further information:
www.genua.eu/vs-diode