



**Two-Tier Firewall GeNUGate**  
**Robust Security for Networks**

**GeNUA**

Security first.

# GeNUGate: Two-Tier Firewalls for Ultra-Secure Interfaces

The level of your IT security is largely defined by what happens at the interface between the Internet and your local network. All incoming and outgoing data must pass through this critical point and if you are able to thoroughly monitor data traffic here, you can directly block unwanted connections and dangerous content and achieve truly effective protection for your network. The GeNUGate firewall provides a high security solution specially tailored for this purpose. Its special feature is that it contains two different firewall systems – an application level gateway and a packet filter – combined into one compact solution. This two-tier structure distinguishes the GeNUGate from other firewalls and guarantees maximum security at this crucial interface between your network and the Internet.



## A Maximum Security Solution

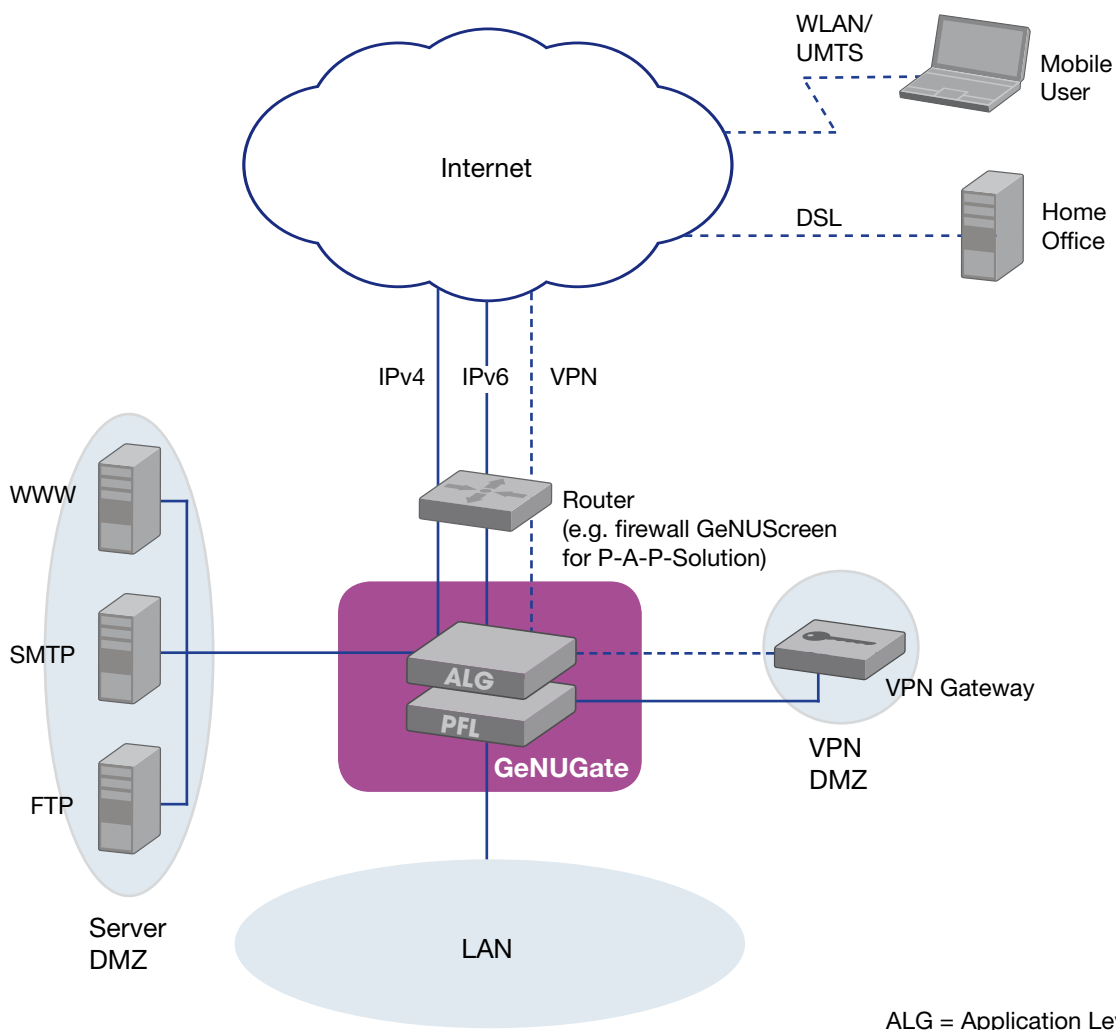
GeNUGate is a complete solution: hardware, operating system, and firewall software. All components are carefully selected and specifically designed for maximum security. The OpenBSD operating system ensures high security standards and the two firewall systems – the application level gateway and the packet filter – run on physically separate computers.

## Application Level Gateway Checks Content

At the heart of the GeNUGate solution is the application level gateway. This advanced security system checks the content of your data flow. The first step in this process is to stop the incoming data packets – the application level gateway never allows a direct connection between the Internet and your local network. It then puts the packets together like a jigsaw because content checks can only be carried out on complete data records. The gateway can now filter the data and block out unwanted material: active content, viruses or spam, depending on how you have configured your system. Only then is the data forwarded via a newly established connection. This type of content check can only be carried out by application level gateways: packet filters, on the other hand, whose security mechanisms form the sole basis of many other firewalls, can only check formal criteria.

## Teamwork with Packet Filter

GeNUGate also has a stateful packet filter, operating on the inside in the direction of the local area network (LAN). The filter checks the packets according to their header data: IP address, protocol type, and port number. This means that all data has to negotiate two complementary firewalls, each with its own protection system operating on a particular level. The two systems effectively work as a team, each supporting the other. This two-tier design also simplifies the configuration of so-called demilitarized zones (DMZs). These zones are erected between the two firewalls and provide a secure environment for servers and gateways that have to be accessed from both the Internet and from a LAN. The LAN remains separated from the DMZ by the second firewall and is therefore well protected from direct access from the Internet. This two-stage structure in the form of a powerful application level gateway and an additional packet filter is the guiding principal behind the GeNUGate and your assurance of top-level security.



ALG = Application Level Gateway  
 PFL = Stateful Packet Filter  
 - - - - encrypted data

## Customized Security Zones for all Requirements

### Straightforward and Secure Migration to IPv6

The GeNUGate is fully IPv6 compatible and is designed to enable the comfortable and secure dual-stack operation. The application level gateway that separates the connections at the boundary between the LAN and the Internet is able to convert from IPv4 to IPv6 and vice-versa. This guarantees reliable communication paths, even when not all clients and servers are able to handle both protocols. At the same time, the GeNUGate minimizes many of the risks associated with the extended standard. IPv6 offers many additional possibilities, particularly in the header area – that also represent potential weaknesses. However, the GeNUGate makes this type of attack impossible as the application level gateway generates a new body and header for each packet after checking its contents.

### GeNUGate: the Ideal Basis for a P-A-P-Solution

The German Federal Office for Information Security (BSI) recommends protecting the critical connection between the Internet and a local network with a firewall combination consisting of two packet filters and an application level gateway, or P-A-P for short. The packet filters are placed on either side of the powerful application level gateway and provide optimum protection against both direct attacks and high data loads. It is a simple matter to provide this high level of protection with the GeNUGate. For example, a P-A-P solution can be created with an Internet router configured for rule-based filtering and acting as an additional packet filter in conjunction with the two-tier GeNUGate system.

## Seal of Approval: Certified by the BSI to CC EAL 4+

The GeNUGate system has been certified at the strict EAL 4 security level by the German Federal Office for Information Security (BSI), in accordance with the international Common Criteria (CC) standard. This required the submission of detailed design documentation for all security mechanisms, including the complete source code, and involves extensive testing. This process allows independent experts to check that all security functions have been correctly implemented, down to every individual line of code. The result of this process was certification of the GeNUGate at the EAL 4+ level, with an additional “Highly Resistant” rating.



## The Only Highly Resistant Firewall in the World

What exactly is the significance of EAL 4+ certification with the additional “Highly Resistant” classification? EAL 4 is the first level to include a source code audit, and at the same time is the highest level that can reasonably be applied to an entire system as complex as a firewall. The additional “+” however indicates, that the EAL 4 level has been surpassed for certain criteria. The GeNUGate achieved this in its handling of patches. However, this is a criterion other manufacturers also could fulfill in order to improve their certification level. Far more important for your IT security is the fact that GeNUGate meets even higher standards when it comes

to self-protection: the firewall uses two different security mechanisms to provide dual systematic protection for all potential points of attack such as interfaces. As a result, the system is highly resistant to direct and intelligently carried out attacks, thus meeting the criteria of component AVA\_VAN.5, which fulfills the requirements of level

EAL 7. Based on this exceptional security performance, the BSI classified the GeNUGate as

“Highly Resistant” – the only firewall in the world to achieve this rating. This is our customers’ guarantee that they have purchased a high-security solution and this stringent quality assurance test is therefore repeated for every new major release.

## High Availability Clusters and Central Administration

We supply GeNUGate in the hardware models GeNUGate 200, 400, 600, and 800 and are able to exactly meet a wide range of different performance requirements. We can handle any bandwidth and availability requirements in excess of these capacities by using clusters: all GeNUGate models can be bundled together to form clusters with any capacity the customer specifies. The firewall is administrated using a separate web GUI and if you have deployed several GeNUGates or other GeNUA solutions, all systems can be administrated from the GeNUCenter Central Management Station. This allows you to keep track of the status of all your security systems at all times and conveniently transfer changes and updates. It also means that an extremely high level of security can be achieved throughout your entire network with little effort.

## Customer Service Direct from the Manufacturer

Our customer support is directly aimed at meeting your wishes. Many customers ask us to handle the whole process of administering their firewall solution. This means they can focus on their core business and leave their IT security in the hands of experts. We also offer hotline support 24 hours a day, seven days a week and a regular update service. When it comes to hardware support, however, there is no choice to be made. Every GeNUGate comes with a Germany-wide next business day replacement service: if one of your appliances breaks down, you will receive an identical exchange unit on the next working day. We also ship exchange units to international locations but due to shipping restraints cannot guarantee next working day delivery. This support service is provided free for the first three years after purchase of the product. A yearly fee will be charged thereafter.

## GeNUGate Can Do even More

A wide range of products can be added to the GeNUGate firewall system to create comprehensive security solutions. For example, the GeNUScan interface package allows the integration of a virus scanner for WWW, FTP, SMTP, POP3, and NNTP, and for situations with especially high-performance requirements, the external GeNUGate Scanserver can perform this role. GeNUA also offers standby systems, URL blockers, and reverse proxies for authentication and SSL encryption. We also offer an extensive range of training and consulting services and express support in emergencies. Just ask – we're bound to have the solution for your problem!

## High-Security Gateways: RSGate and Diodes

We provide our high-security gateway solutions for even more restrictive interface control: the RSGate implements document content checks and has already proved its worth in practice, for example, in military applications at so-called red-black interfaces. And the GeNUGate Data Diode is the ideal solution for high performance single direction data transfer. No matter what task you set us, it is safe to say that we will have the right solution for you.

### GeNUA's Firewall Solutions



#### Firewall & VPN-Appliance

##### GeNUScreen

- Saves sensible internal and external interfaces



#### Two-Tier Firewall

##### GeNUGate

- Saves high-sensible external interfaces



#### High-Security Gateways

##### RSGate

- Saves high-sensible Red-Black interfaces

##### GeNUGate Data Diode

- Saves high-performance unidirectional interfaces



## Our Customers Include:

- Ansbach Regional Authority
- Berlin-Bonn Information Network (IVBB)
- Borgers Group
- EUROGATE
- German Federal Agency for Technical Relief (THW)
- German Federal Government Press and Information Office
- German Federal Ministry of Labor and Social Affairs
- German Federal Public Prosecutor, Federal Supreme Court
- German Federal Statistical Office
- German Parliament (Bundestag)
- Homeland Security
- Hubert Burda Media
- KASTO GmbH Maschinenbau
- Klüber Lubrication
- MAN Group
- Mülheim an der Ruhr Municipal Authority
- RTL II television channel
- Schober Information Group
- State Criminal Investigation Department of Thuringia
- Stuttgarter Lebensversicherung
- Swarco Traffic Systems
- telegate AG
- WMF AG
- Würth Group

## How the GeNUGate Benefits You:

- **The two-tier system ensures top security**
- **Control of data content by the application level gateway**
- **Convenient setup of a demilitarized zone (DMZ) based on the two-tier system**
- **Straightforward and secure migration to IPv6**
- **High availability and increased bandwidth through cluster**
- **Simple integration offered as a complete solution**
- **Central administration through the GeNUCenter**
- **CC certificate as proof of quality**
- **The only Highly Resistant Firewall in the world**
- **Customer service direct from the manufacturer**

Further information:

[www.genua.eu/genugate](http://www.genua.eu/genugate)



## About GeNUA

GeNUA, Gesellschaft für Netzwerk- und Unix-Administration, is a German IT security specialist. We have been involved in securing networks and developing sophisticated security solutions since our company was founded in 1992. Our product range encompasses firewall systems certified by the German Federal Office for Information Security (BSI), high security gateways for red-black network transitions, intelligent VPN and remote maintenance systems, mobile security solutions and data optimization for satellite communication as well as a comprehensive range of services. Many companies and security-conscious public authorities rely on solutions from GeNUA to protect their IT systems.