

## White Paper

## Billions BiGuard Security Gateway

### Introduction

BiGuard series integrate with cutting-edge security technology including VPN and Firewall that enable you to connect your network to the Internet securely without worrying about intruders and Internet attacks. BiGuard security gateway is for SOHO and small office network to connect with headquarter and tele-workers. It meets business demand for application-based network solutions at low-capital investment and is perfectly for the needs of SOHO, small and medium sized business. The dual-wan port design of BiGuard30 supports fail-over and load balance features for business applications. The bandwidth management function guarantees the bandwidth requirements of different business applications. The advanced firewall features will truly secure the data transmission of your business applications.

### Why Billion BiGuard Security Gateway?

- Best suited for small-sized business: Ensure business operates smoothly in a secure environment
- No need of extra device: Powerful functionalities but affordable cost
- VPN support: Full product lines (BiGuard series 2/10/30), up to 30 IPSec tunnels, high throughput
- Robust Firewall: Security enhancement
- QoS control: Traffic Prioritization and Bandwidth Management
- Load Balancing: Availability for Bandwidth Optimization
- Auto Failover: Always keep your business online

## Features and Benefits

### ■ Solid Security Features to Protect Business Operation

#### VPN

VPN is a technology that secures the private data transmission among multiple sites, such as branch office or dial-up. This is a cost effective solution by using any broadband connection to transmit data through the public network. Billion BiGuard Series supports comprehensive and robust IPSec VPN protocols for business to establish private encrypted tunnels over the public Internet to ensure data transmission security.

#### Firewall

Firewall is a technology that provides a strong and reliable protection against hacker attacks and intruders that may damage your network. Billion BiGuard Series provides integrated firewall protection, while simultaneously offering features such as Stateful Packet Inspection (SPI), Denial of Service (DoS) and Filtering. Built-in Stateful Packet Inspection (SPI) determines if a data packet is allowed through the firewall to the private LAN. It protects against hackers attack by Denial of Service to allow private LAN securely connected to the Internet. Furthermore, the firewall provides e-mail alert service to notify you whenever attacks occur.

BiGuard Firewall	Check
SPI	v
DoS Prevention	v
Packet Filter	v
URL Filter	v
e-Mail Alert	v

### ■ Flexible Bandwidth Management to ensure traffic availability

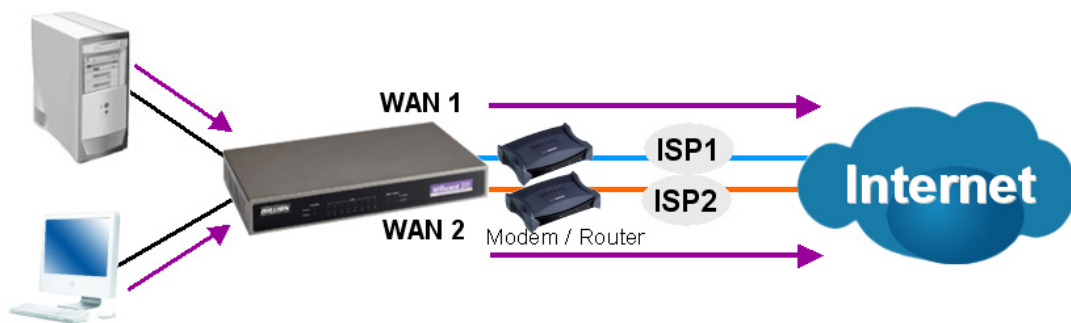
#### Load Balancing

Fast, reliable and available Internet connection is essential for business operation. Load balance integrates multiple broadband connections to efficiently balance the

network traffic. BiGuard series will efficiently balance network traffic across two connections, which is ideal for small-to-medium businesses that require increased bandwidth, network scalability, and resilience for mission-critical network and Internet applications. BiGuard's load balance function can ensure that critical data such as customer information moves through your network, even while the traffic is under a heavy load. Transmission speed can be throttled to make sure users are not saturating bandwidth required for mission-critical data transfers.

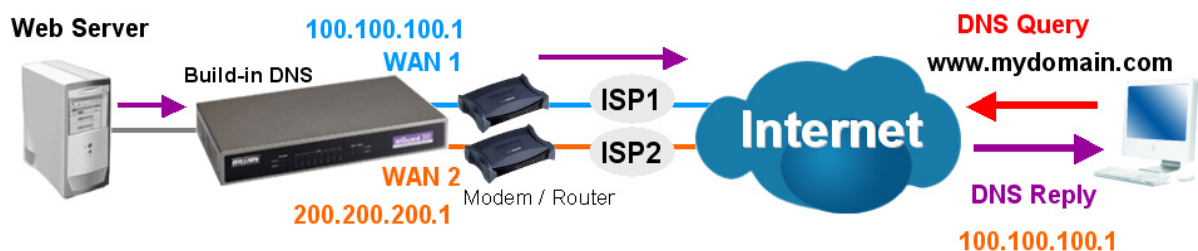
### Outbound Load Balancing

Outbound Load Balancing allows the device to intelligently manage outbound traffic based on the amount of load of each WAN connection. By balancing the load between WAN1 and WAN2, your devices can ensure that outbound traffic is efficiently handled by making sure that both ports are equally sharing the load, preventing situations where one port is completely saturated by outbound traffic.



### Inbound Load Balancing

Inbound Load Balancing allows the devices to intelligently manage inbound traffic based on the amount of load of each WAN connection. By balancing the load between WAN1 and WAN2, your devices can ensure that inbound traffic is efficiently handled with both ports equally sharing the load, preventing situations where service is slow because one port is completely saturated by inbound traffic.



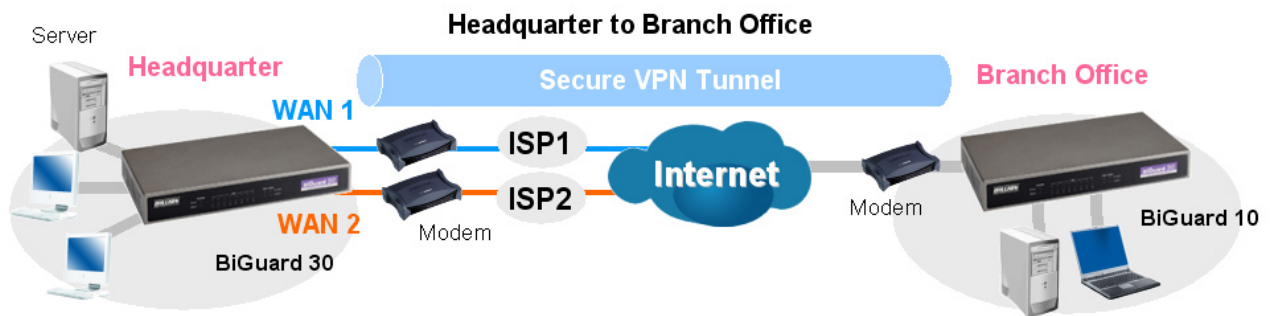


## Application

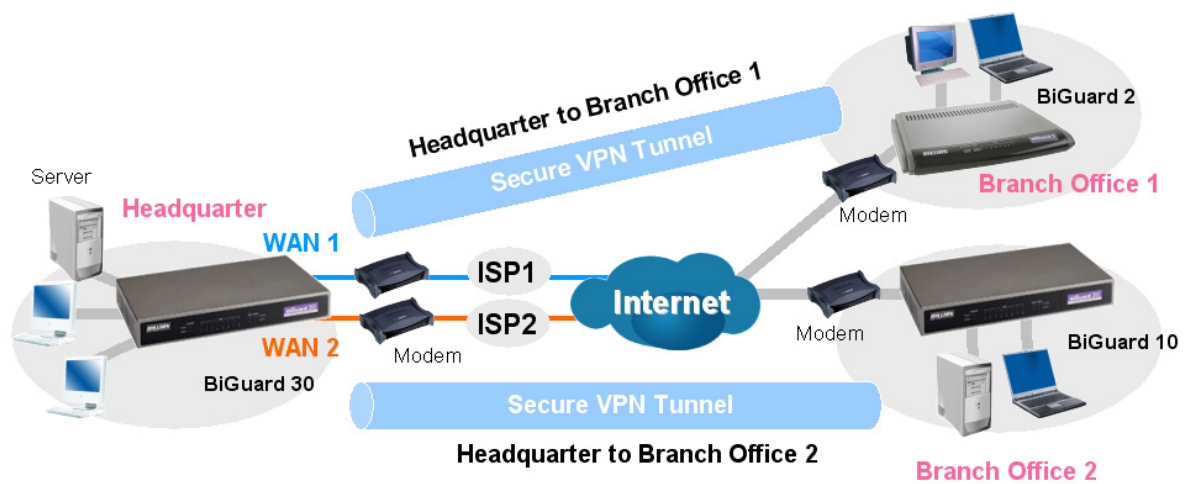
### VPN

Here are three different scenarios for VPN deployment:

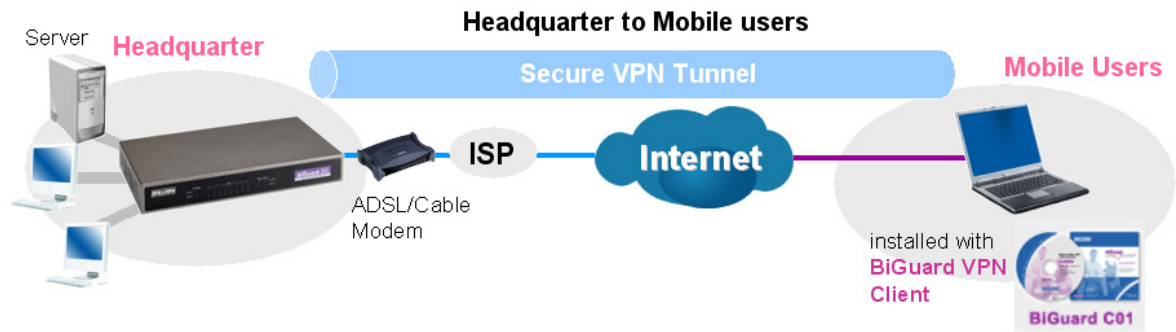
#### A. Gateway to Gateway



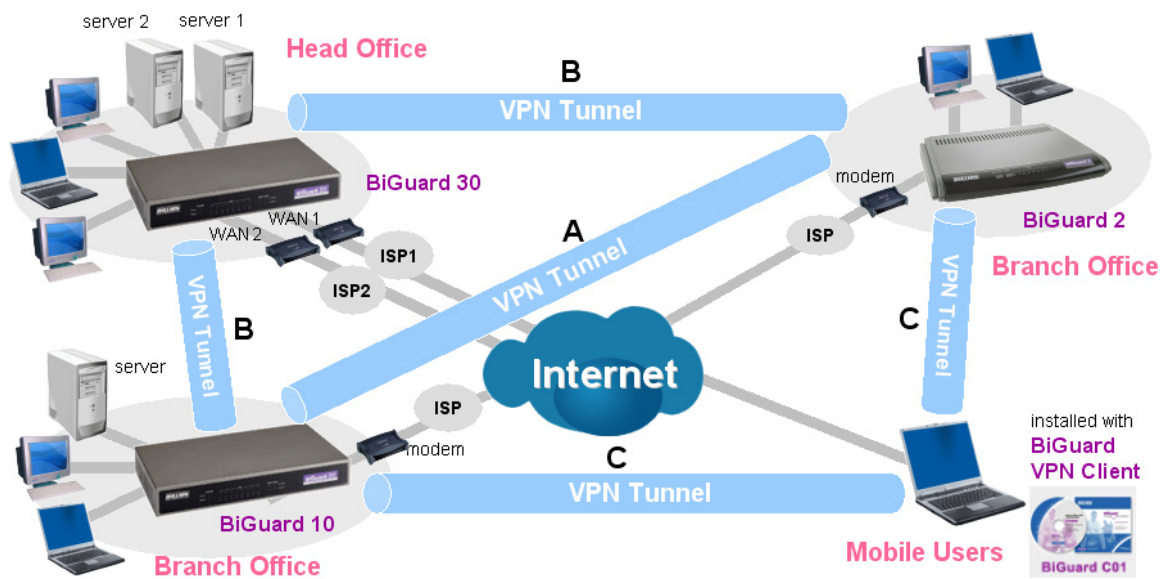
#### B. Gateway to Multiple Gateway



## C. Gateway to Client

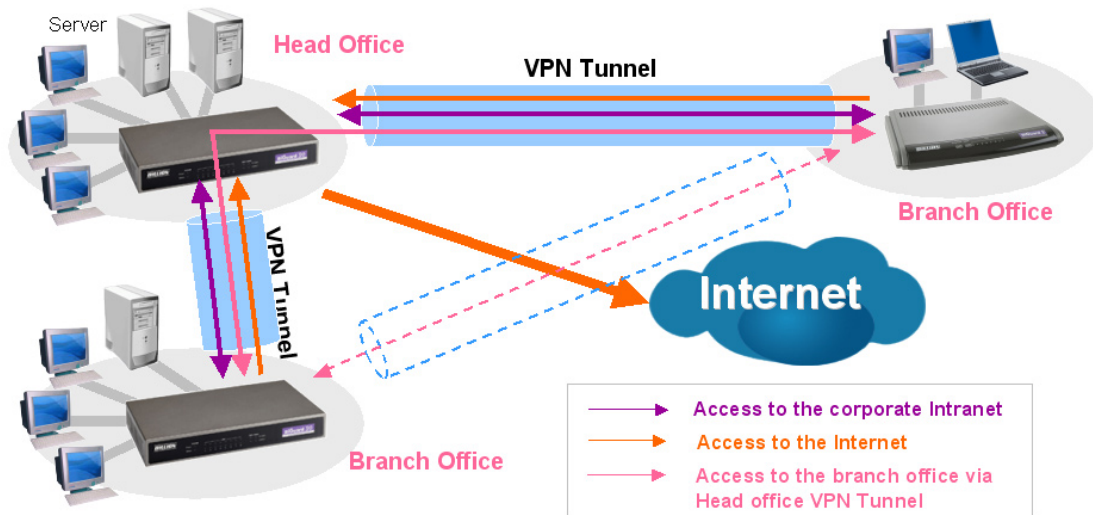


## D. Full VPN Application Diagram



## VPN Concentrator

BiGuard routers can be used as a VPN Concentrator for several remote gateways, providing centralized management for all of their VPN tunnels. All traffic from branch offices will be redirected to the headquarters with the exception of LAN-side traffic.

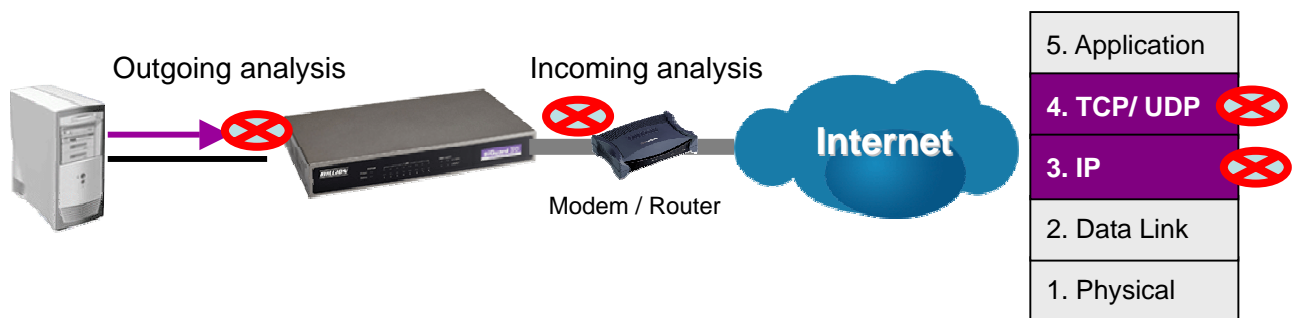


## Firewall

Billion's firewall provides protection from physical layer to application layer.

### Packet filtering

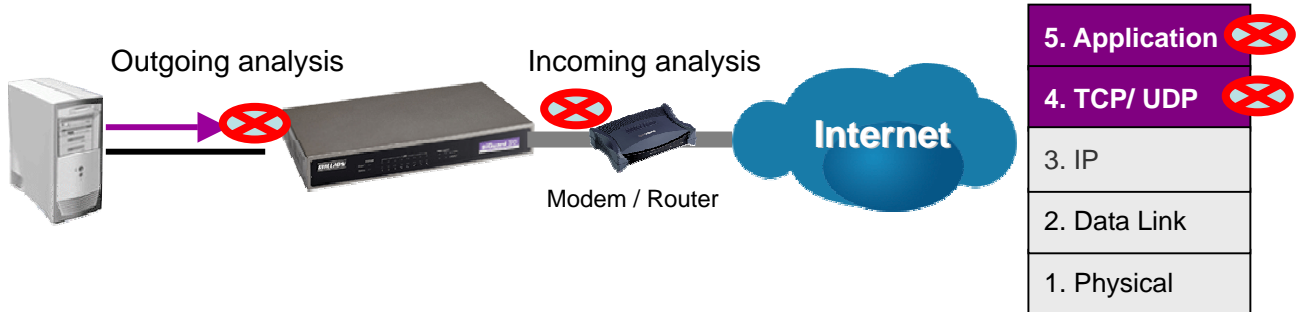
Controlling access to a network by analyzing the incoming and outgoing packets and forward or drop them based on the IP address, protocol, and port range of the source and destination.



### URL filtering

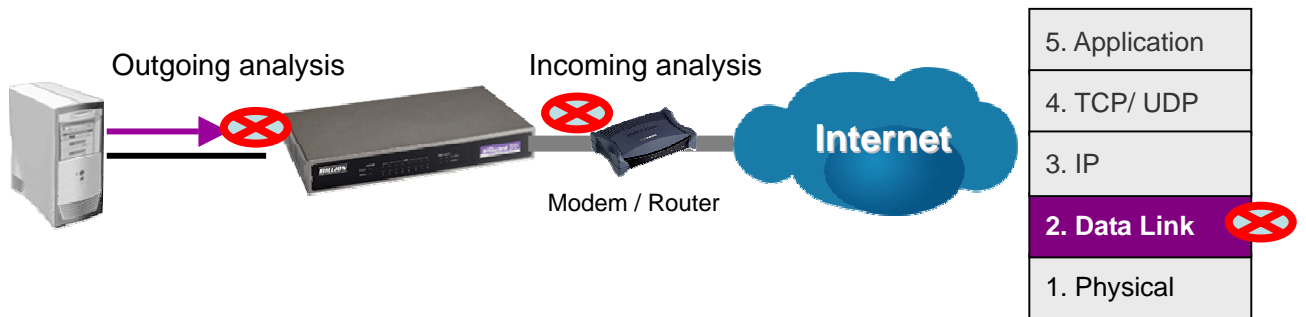
Controlling HTTP access to a network by analyzing the outgoing packets and forward

or drop them based on the domain, host, keyword, or access content of the HTTP Header.



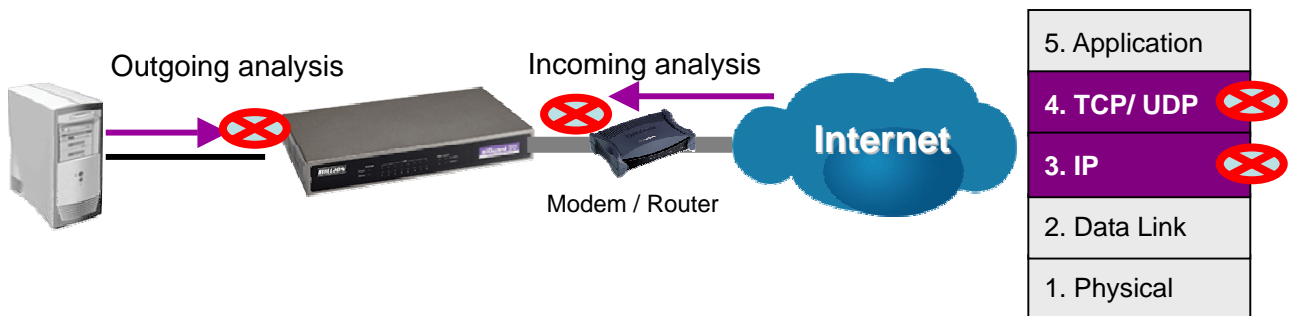
### LAN MAC filtering

Controlling access to a network by analyzing the outgoing packets and forward or drop them based on the MAC address of source.



### Intrusion detection

Analyze and drop Denial of Service (Dos) attack to avoid the consumption of computational resources, such as bandwidth, memory, or CPU time.



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