PROACTIVE VISIBILITY CONSOLIDATES NETWORK SECURITY

Pervasive Inspection

Security Function Offloading

Perimeter Defense

Features

1. Any-to-Any Delivery
1.1 Each interface can be INPUT or OUTPUT
1.2 1-to-many, many-to-1, many-to-many
1.3 To any selected interface after filtering

2. Advanced Distribution
2.1 Filter Processor
- Composed of a set of rules with AND/OR operation
- Session-based filtering and packet-based filtering
- L2-L4 header filtering rule: MAC address, Ethertype, VLAN ID, IP range, TCP/UDP port...

2.2 DPI-enabled Filter Processor
- L4-L7 Pattern-based filtering
- Pattern format: HEX, ASCII strings and Regular Expression

2.3 Tunnel-awareness filter
- apply all filtering rules on in-tunnel packets where GRE/VxLAN/QinQ/MPLS
- tunnel ID(ERSPAN/X-tunnel) filtering

2.4 Processor Chain
- User-defined graphs of Filter Processors

3. Out-of-band Load balance
3.1 Same Dst IP/Src IP/Dst Port/Src Port sticky to same egress ports
3.2 Same 5-tuple hash sticky to same egress ports
3.3 Delivery HA: Re-distribute to link-up egress ports
3.4 Balance port groups: Max 8 egress ports

4. Packet Engineering
4.1 Tag removal: MPLS/VLAN/QinQ...
4.2 Unpacking Tunnel(Tag removal and re-encapsulation): GRE/GTP/ERSPAN/NvGRE/VxLAN
4.3 User-defined VLAN tagging for input packets or output packets
4.4 Packet Deduplication

5. Monitoring Network Virtualization
5.1 GRISM to GRISM tunnel
5.2 Encapsulation: GRE, VxLAN, ERSPAN, X-tunnel

6. Network Traffic Intelligence Extraction
6.1 Generate Netflow V5/V9
6.2 Generate HTTP log
6.3 Generate DNS log

7. Sensitive Data Protection
7.1 Packet slicing
- preserve N bytes
- remove TCP/UDP payload

7.2 Data mask
- Replace sensitive data segment in TCP/UDP payload
- Data segment can be defined in regular expression

8. In-Line Aggregation and Re-Distribution
8.1 N network links X M monitoring links (N X M)
8.2 In-line session-based load balance with HA strategy
8.3 Intelligent content-based bypass
- IP address List
- User-defined pattern in regular expression

9. PCAP File Prcoessing
9.1 Stream snapshot in PCAP format
9.2 Filter PCAP files with timestamp persistance
9.3 Remote recording agent over L2-L4 switch

10. Telecom Correlation Processing
10.1 Mobile 3G/LTE data netwok
- Filter GTP-C/GTP-U by IMSI/IMEI
- Subscriber-based load balance

10.2 Fixed ISP network
- Filter user-plane packets by RADIUS ID
- subscriber-based load balance

11. Virtual Machine Traffic Monitoring
11.1 VM traffic redirection by GRISM-V (as a VM instance)
11.2 Supporting environment
- KVM
- VMware ESXi/vSphere

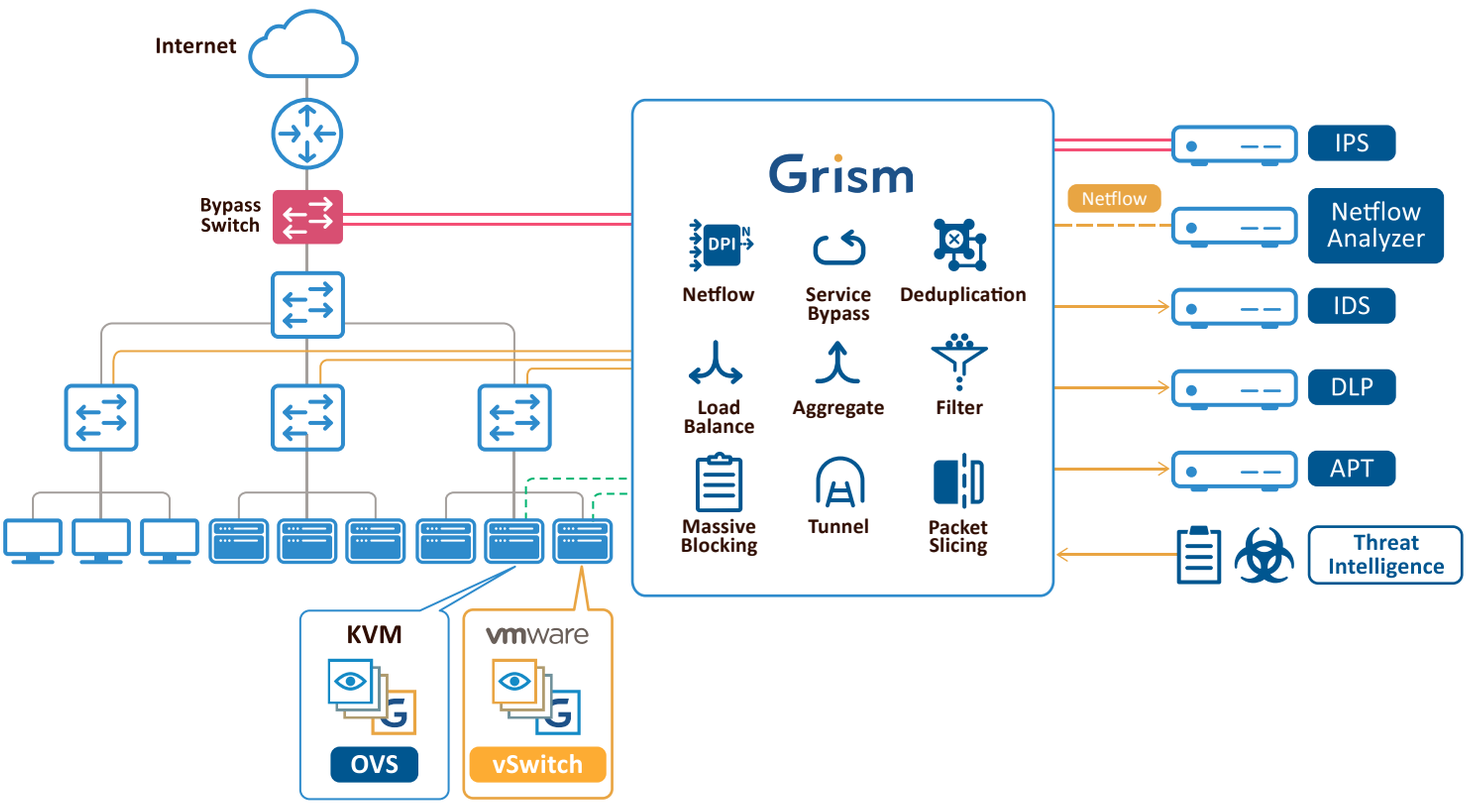
12. System Control and Operation
12.1 Web GUI agent for authenticated users
12.2 Advanced Control
- XML script over HTTP

12.3 Management protocol: Telnet, HTTP, SNMP V2

13. Front-line Security
13.1 Massive Blocking
- IP/Domain/URL
- Max 2,000,000 entries

13.2 3rd party threat intelligence import

Architecture diagram



Hardware Spec

	GRISM G8	GRISM T2G8	GRISM T16	GRISM T32	GRISM T20/F2T12/F4T4
Dimension	17.3" W x 8.6" D x 1.7" H	17.3" W x 13.7" D x 1.7" H	17.3" W x 16.5" D x 1.7" H	17.3" W x 16.5" D x 5.2" H	17.3" W x 21" D x 1.7"H
Network Interface	1G RJ45*8	10G SFP+*2 1G RJ45*8	10G/1G SFP+*16	10G/1GSFP+*32	"10G SFP+*20 40G QSFP*2+10G*12 40G QSFP*4+10G*4"
Management Interface	1G RJ45*8	1G RJ45*1	1G RJ45 *1	1G RJ45 *1	1G RJ45 *1
Management Protocol	HTTP/HTTPS SNMP V2	HTTP/HTTPS SNMP V2	HTTP/HTTPS SNMP V2	HTTP/HTTPS SNMP V2	HTTP/HTTPS SNMP V2
Data Format	1.Ethernet 2.PCAP file	1.Ethernet 2.PCAP file	Ethernet	Ethernet	Ethernet
Storage	SATA2*1	SATA2*2	2GB (virtual disk)	2GB (virtual disk)	2GB (virtual disk)
Forwarding or Replication	8Gbps	56Gbps	160Gbps	640Gbps	400Gbps
1:1NetFlow Processing	Max 3Gbps	Max 10Gbps	Max 30Gbps	Max 60Gbps	Max 50Gbps
Mechanical	1U Appliance	1U Appliance	ATCA 1U, one blade	ATCA 3U, two blade	1U Appliance
Power	AC 110V-220V input	AC 110V-220V input	1.Dual DC -48V input 2.Dual AC 110V-220V input (with external PDU)	Dual AC 110-220V input	Dual AC 110-220V input

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