



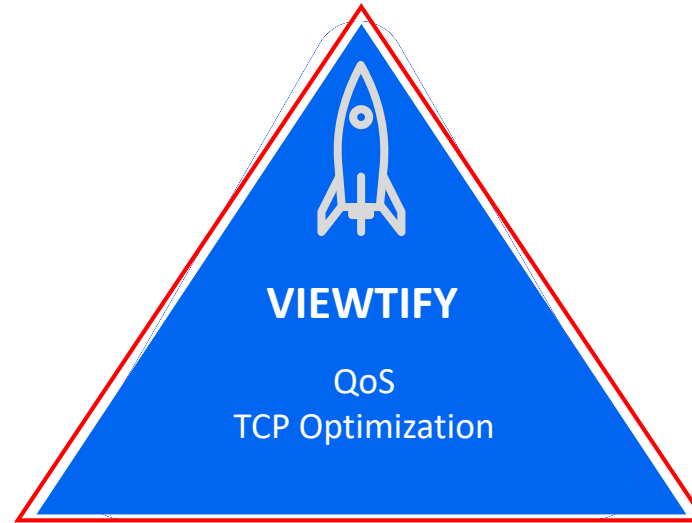
Viewtify QoS & OPT

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# Viewtinet Ecosystem for IP Traffic

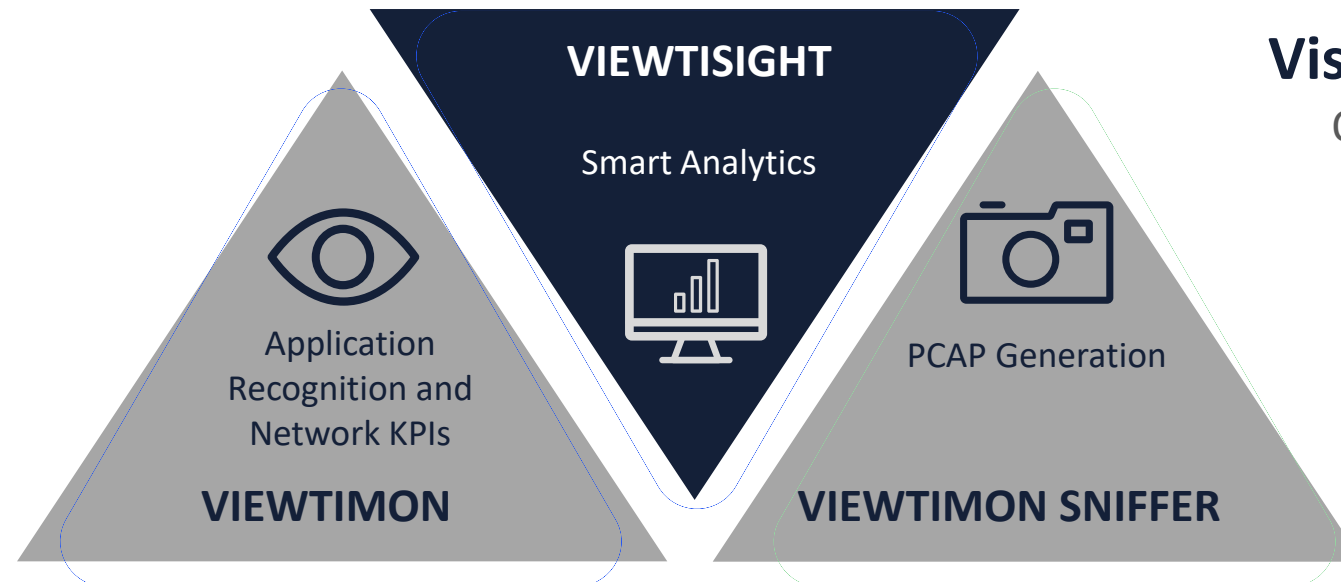
## Control

Inline deployment



## Visibility & Analytics

Out of band deployment



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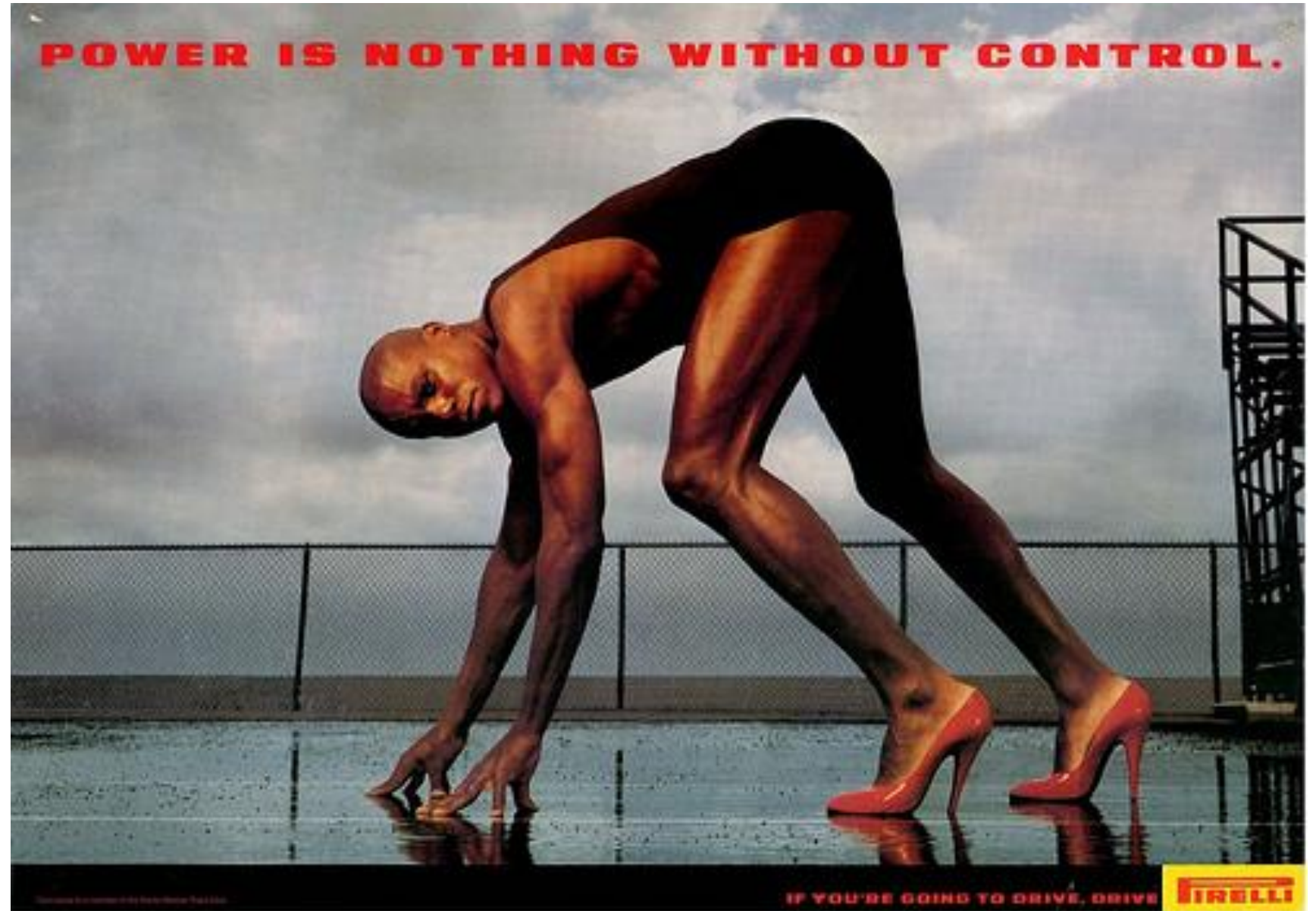
# Viewtify



It is important to understand...

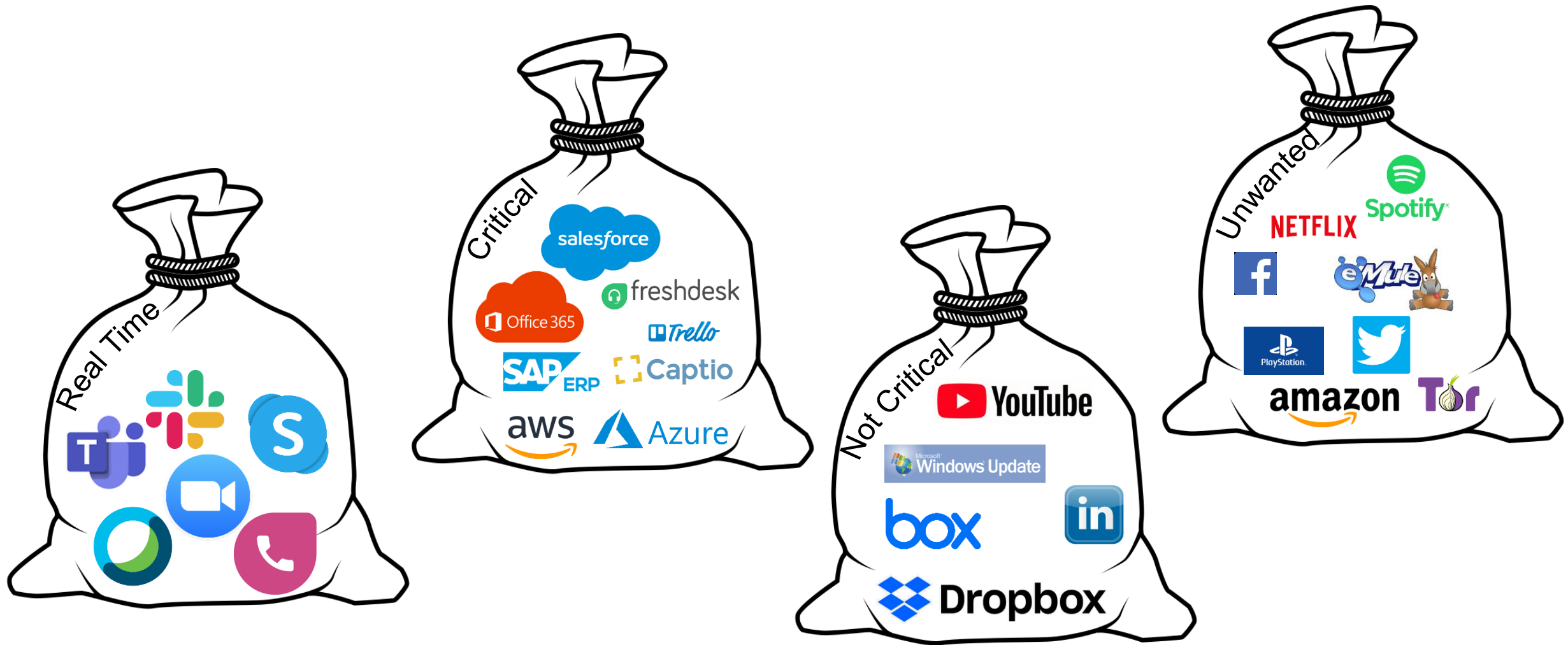


... but also to act



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# Not all the applications are the same...



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# Not all the departments have the same needs

## Marketing



## Accounting




## Sales







# Performance Challenges

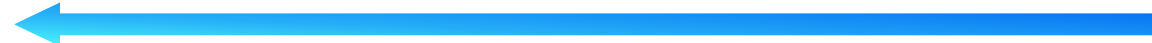


## North – South

- Bidirectional rules (inbound and outbound)
  - Multiple QoS policies
  - Avoid Firewall overloading
  - High-Rate application recognition
- 



## East – West

- Improve internal business critical applications
  - Avoid network bottlenecks
  - Manage the traffic of all branches
- 

# How a Smart Network should work


With Viewtify QoS we can assign different policies and priorities to different applications, subnets, etc.



Critical real-time applications 

Critical applications 

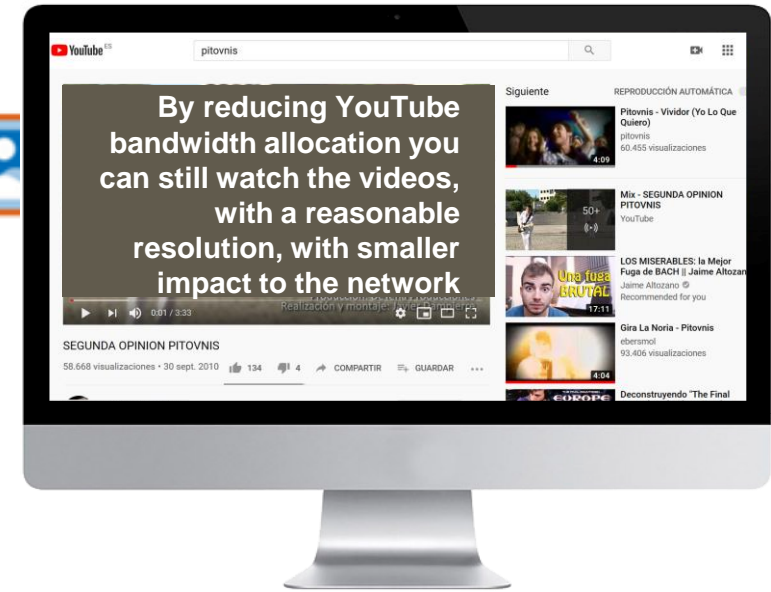
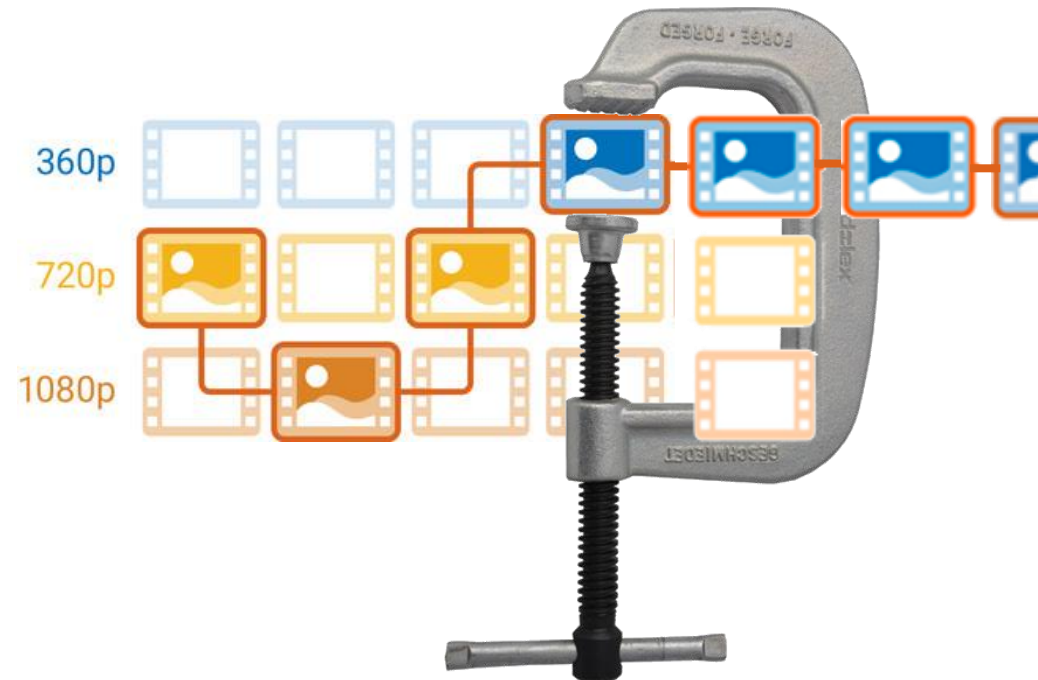
Not-critical applications 

Less important applications 

# Adaptive Bit Ratio: savings with traffic shaping



Quality	Quality Resolution	Video Bitrate
LOW	480 X 270	400kbps
Medium	640 X 360	800 - 1200kbps
High	960 X 540/854 X 480	1200 - 1500kbps
HD	1280 x 720	1500 - 4000kbps
HD1080	1920 x 1080	4000 - 8000kbps
4K	3840 X 2160	8000- 14000kbps



NETFLIX  
vimeo





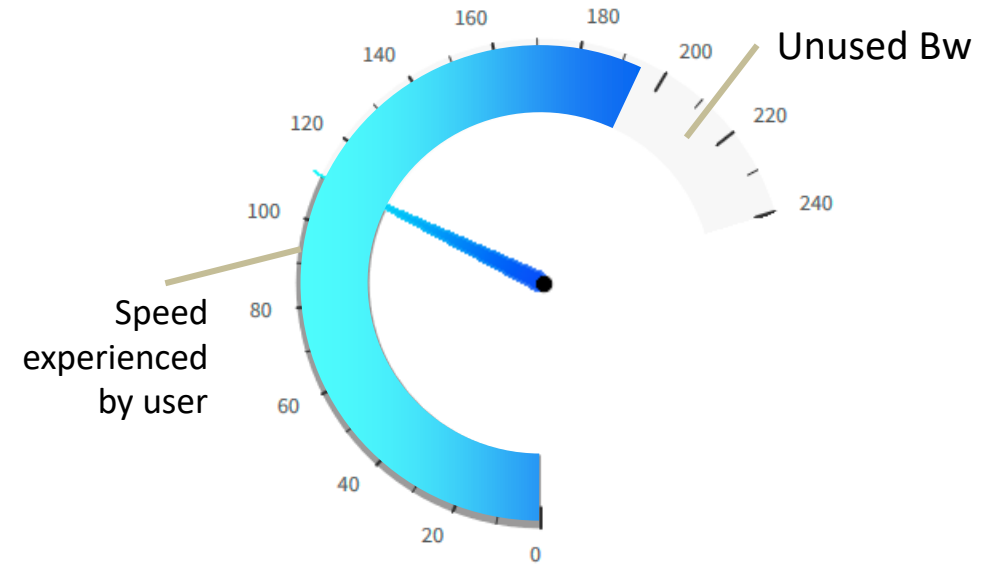
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# TCP Optimization

In networks with packet loss and latency, transport protocols leave capacity unused



With TCP Optimization we can help and improve the user experience



# TCP Optimization: Faster TCP Stack



More Efficient use of Bandwidth



Impact reduction of long round trip times



Faster recovery from packet loss

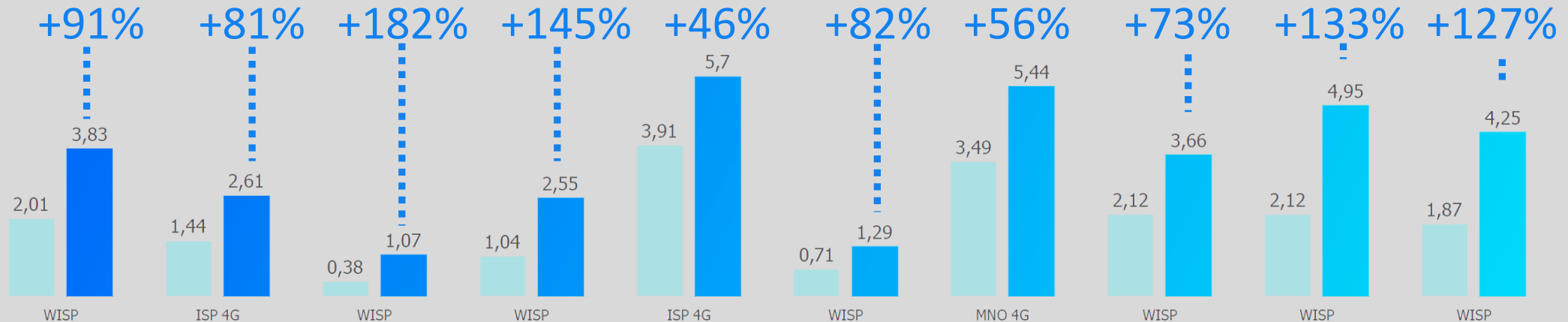
Reduction of dropped connections



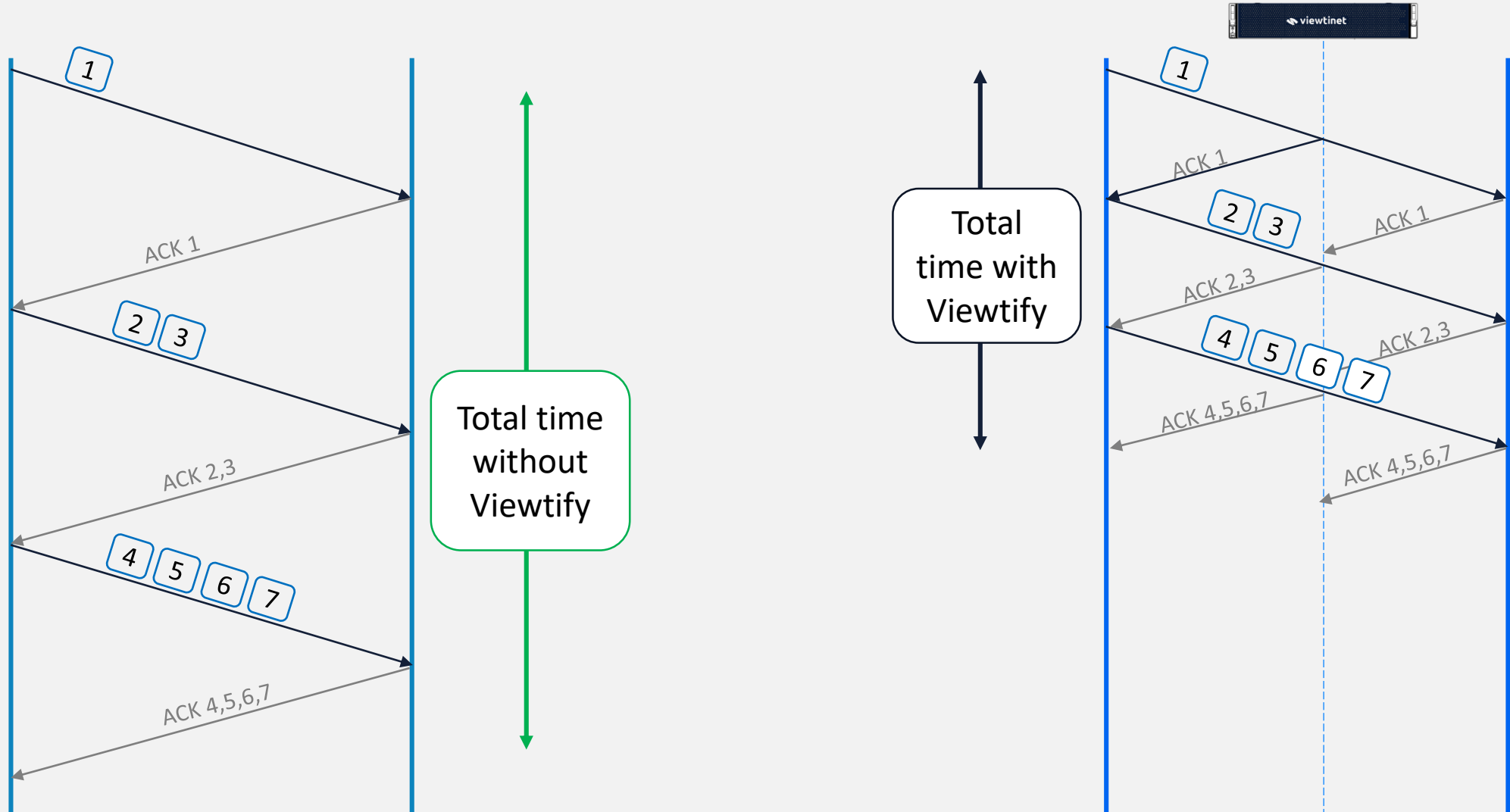
Distinguishes radio glitches from congestion & handles both



Reduces the impact of packet losses early in a transfer on overall transfer speed



# TCP Optimization: Transparent Proxy



# TCP Optimization

## Top-of-the-Class acceleration

TCP traffic speed increase from 20% to over 100%

## Bandwidth savings

Web and Image compression

## Maximizes Quality of Experience of users

Operators and Service providers get the best of their expensive infrastructure in terms of customer satisfaction, reducing Churn



## Transparent

Connections can continue after TCPO ceases to accelerate them

## Easy deployment

Extremely simple installation and configuration

## Cost-effective

Virtualized option also supported

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# QoS vs OPT

**QoS**

**Prioritize** certain applications against others

**Limit** or drop unwanted applications

Works with TCP & UDP

**OPT**

**Optimize** the overall quality of experience

**Improve** the line speed of all the TCP flux

Works only with TCP

# Dashboards integrated in Viewtisight



# Architecture

Scalable, physical and virtual



# Passive bypass



## Failsafe Protection

When power fails, the optical-relays ensure that the network flow continues uninterrupted.



## Heartbeat Protection

In the event of an appliance malfunction it bypasses the traffic intended for the Viewtify to the network ports, allowing it to continue to flow.



## High Density and flexibility (4 modules)

Network Links	Type	Segments per module
10 / 100 / 1000M	Copper	2
1, 10, 40, 100G	Single Mode LX, LR, LR4	2
1, 10G	Multimode SX, SR	2
40, 100G	Multimode SR4	1
10 Gb	Copper	1







Combine copper / fiber modules!



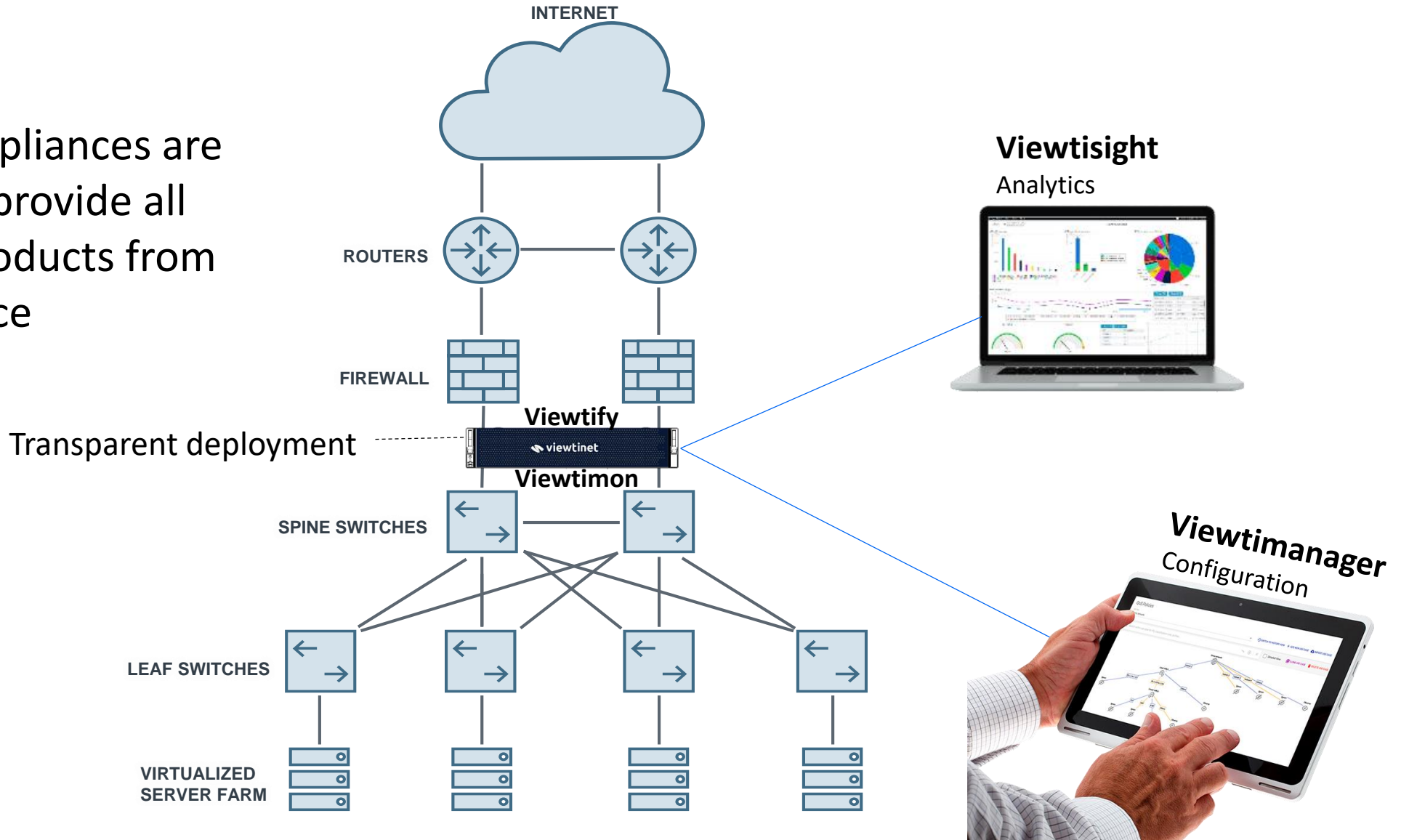


# Appliances and SW licenses

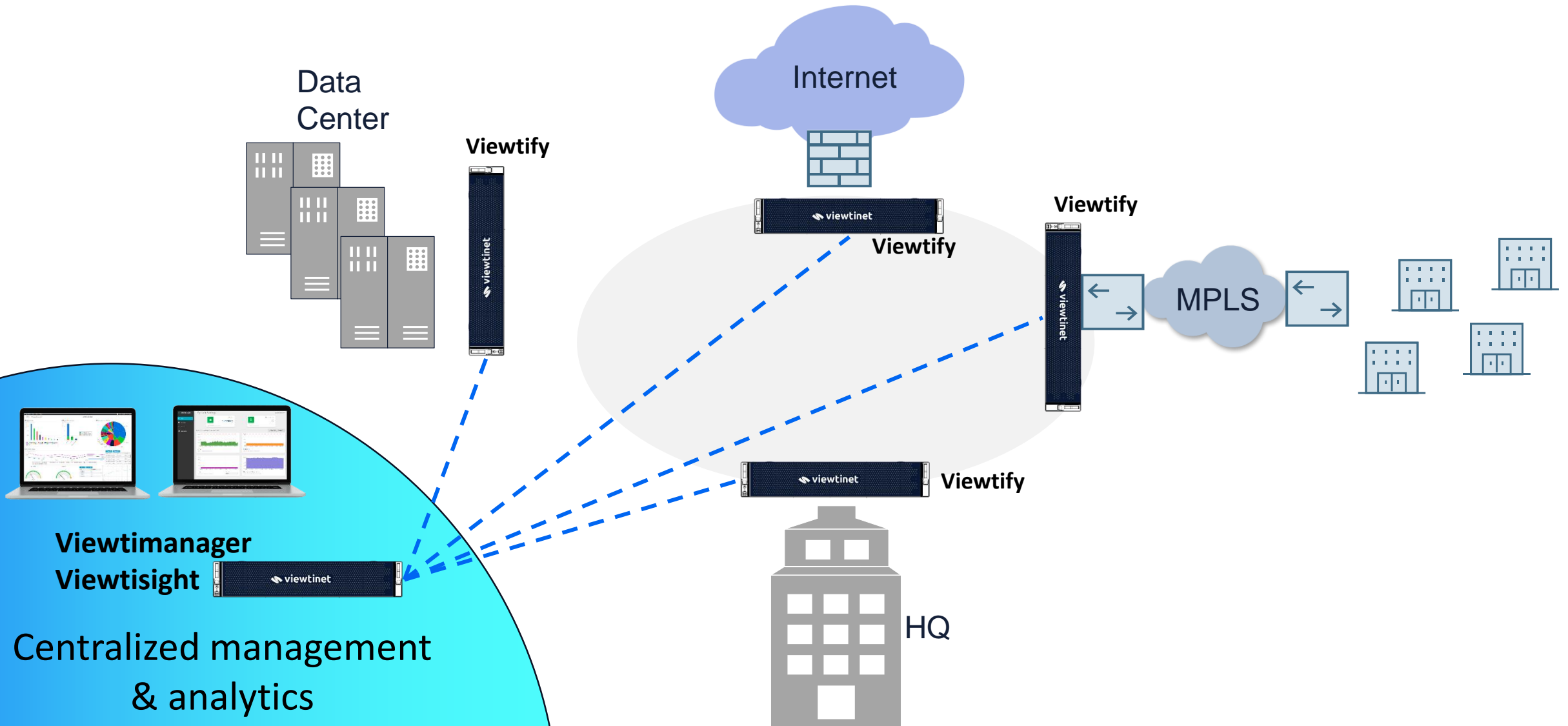
	VN-100	VN-1000	VN-2000	VN-10000
HW DEVICES				
INTERFACES	4 x GE	Up to 12 x 1GE / 10GE	Up to 24 x 1GE / 10GE	Up to 24 x 1GE / 10GE & 2 x 25G/100G
THROUGHPUT	200 Mbps	5 Gbps	20 Gbps	100 Gbps
SW LICENSES	Viewtisight Management: Centralized Analytics and management			
	Viewtify QoS (Licensed by Bw)			
	Viewtimon Probe: DPI, Qoe KPI, PCAPS (Licensed by Bw)			
	Viewtify TCPO: Acceleration (Licensed by Bw)			

# Architecture – All in one

Viewtinet appliances are designed to provide all the set of products from a single device



# Architecture



# Configuration

Solutions per vertical

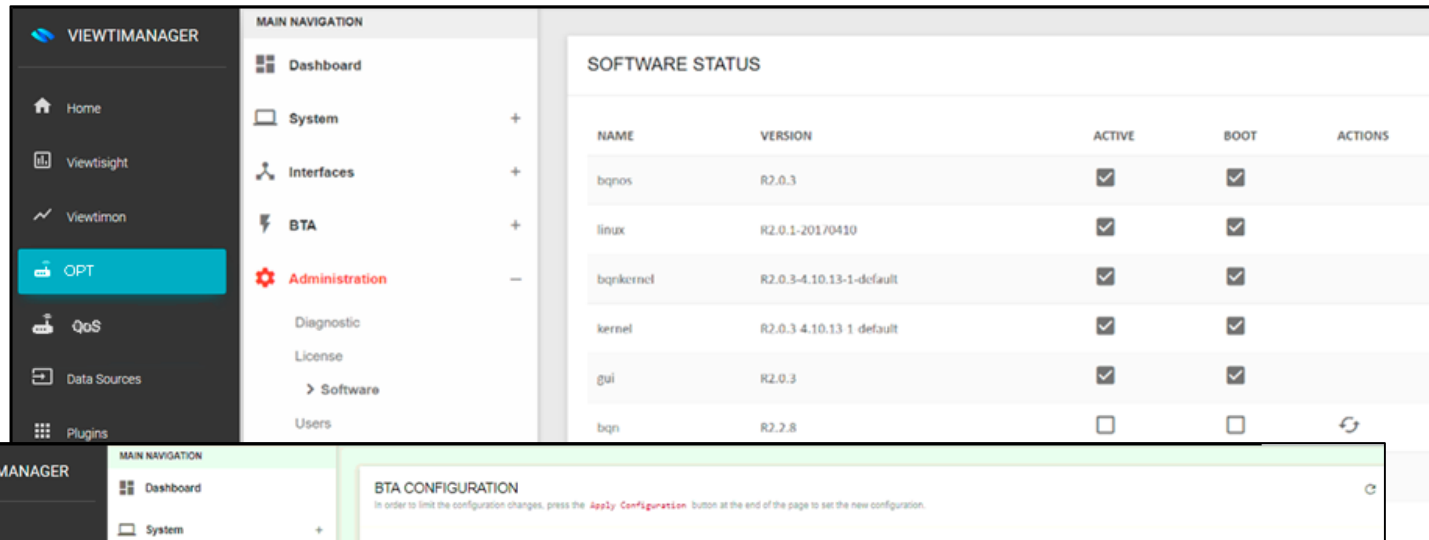


The screenshot shows a 'QoS Profiles' configuration interface. The table below lists various profiles and their configurations.

Name	Type	Download Priority	Upload
Ignore	No QoS		
Observe	Normal QoS		
Limit 4 Mbps	Max Rate	4000 Kbps	4000 Kbps
Limit 8 Mbps	Max Rate	8000 Kbps	8000 Kbps
Ensure 1 Mbps	Min Rate	1000 Kbps	1000 Kbps
Ensure 4 Mbps	Min Rate	4000 Kbps	4000 Kbps
High priority	Priority Queue	High	
Medium priority	Priority Queue	medium	

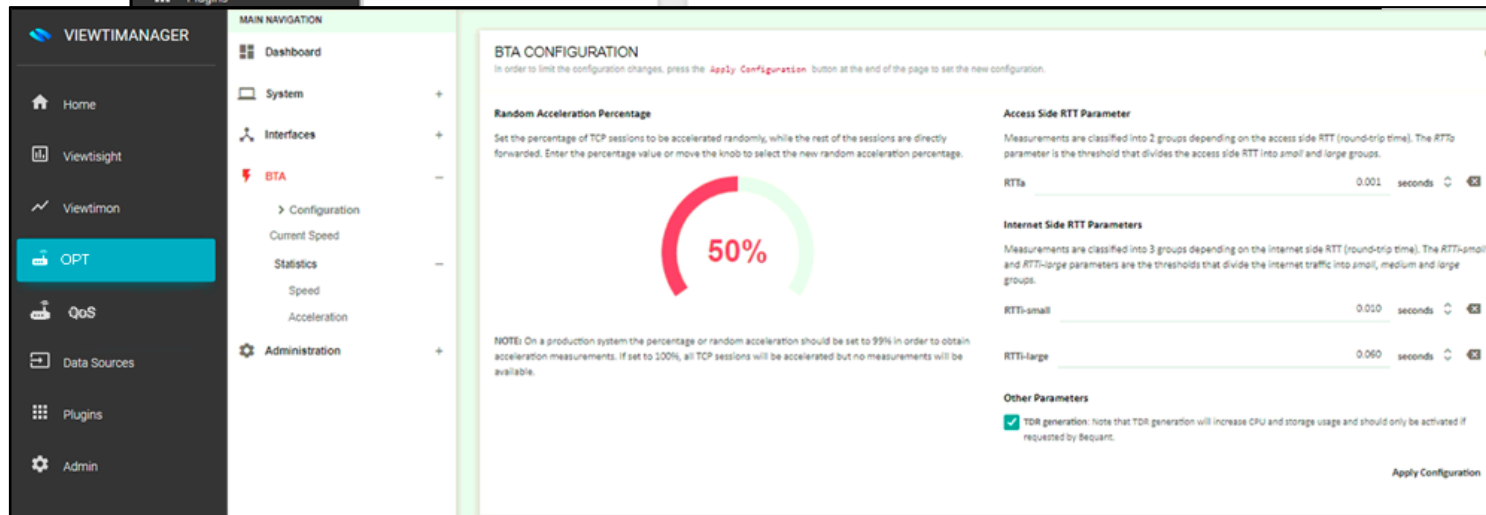
# Configuration - Viewtify TCPO

Very simple and visual configuration from Viewtmanager.



The screenshot shows the 'SOFTWARE STATUS' page in Viewtmanager. It features a table with columns for NAME, VERSION, ACTIVE, BOOT, and ACTIONS. The table lists various system components and their status.

NAME	VERSION	ACTIVE	BOOT	ACTIONS
bqnos	R2.0.3	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	
linux	R2.0.1-20170410	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	
bqkernel	R2.0.3-4.10.13-1-default	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	
kernel	R2.0.3 4.10.13 1 default	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	
gui	R2.0.3	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	
bqn	R2.2.8	<input type="checkbox"/>	<input type="checkbox"/>	



The screenshot shows the 'BTA CONFIGURATION' page in Viewtmanager. It includes a sidebar with navigation options and a main content area with configuration settings. A prominent circular gauge shows '50%'.

**BTA CONFIGURATION**

In order to limit the configuration changes, press the **Apply Configuration** button at the end of the page to set the new configuration.

**Random Acceleration Percentage**

Set the percentage of TCP sessions to be accelerated randomly, while the rest of the sessions are directly forwarded. Enter the percentage value or move the knob to select the new random acceleration percentage.

**50%**

**Access Side RTT Parameter**

Measurements are classified into 2 groups depending on the access side RTT (round-trip time). The RTT<sub>0</sub> parameter is the threshold that divides the access side RTT into small and large groups.

RTT<sub>0</sub>  seconds

**Internet Side RTT Parameters**

Measurements are classified into 3 groups depending on the internet side RTT (round-trip time). The RTT<sub>0</sub>-small and RTT<sub>0</sub>-large parameters are the thresholds that divide the internet traffic into small, medium and large groups.

RTT<sub>0</sub>-small  seconds

RTT<sub>0</sub>-large  seconds

**Other Parameters**

TDR generation: Note that TDR generation will increase CPU and storage usage and should only be activated if requested by Beqant.

**Apply Configuration**



# Configuration - Viewtify QoS

VIEWTIMANAGER

QoS

Version: viewtinet-probe-5.0.0-e766ed48.x86\_64 (release notes)

Logged in as Administrator

STOP RESTART START

CONFIGURATION ISSUES

CLASSIFICATION RULES

PROFILES

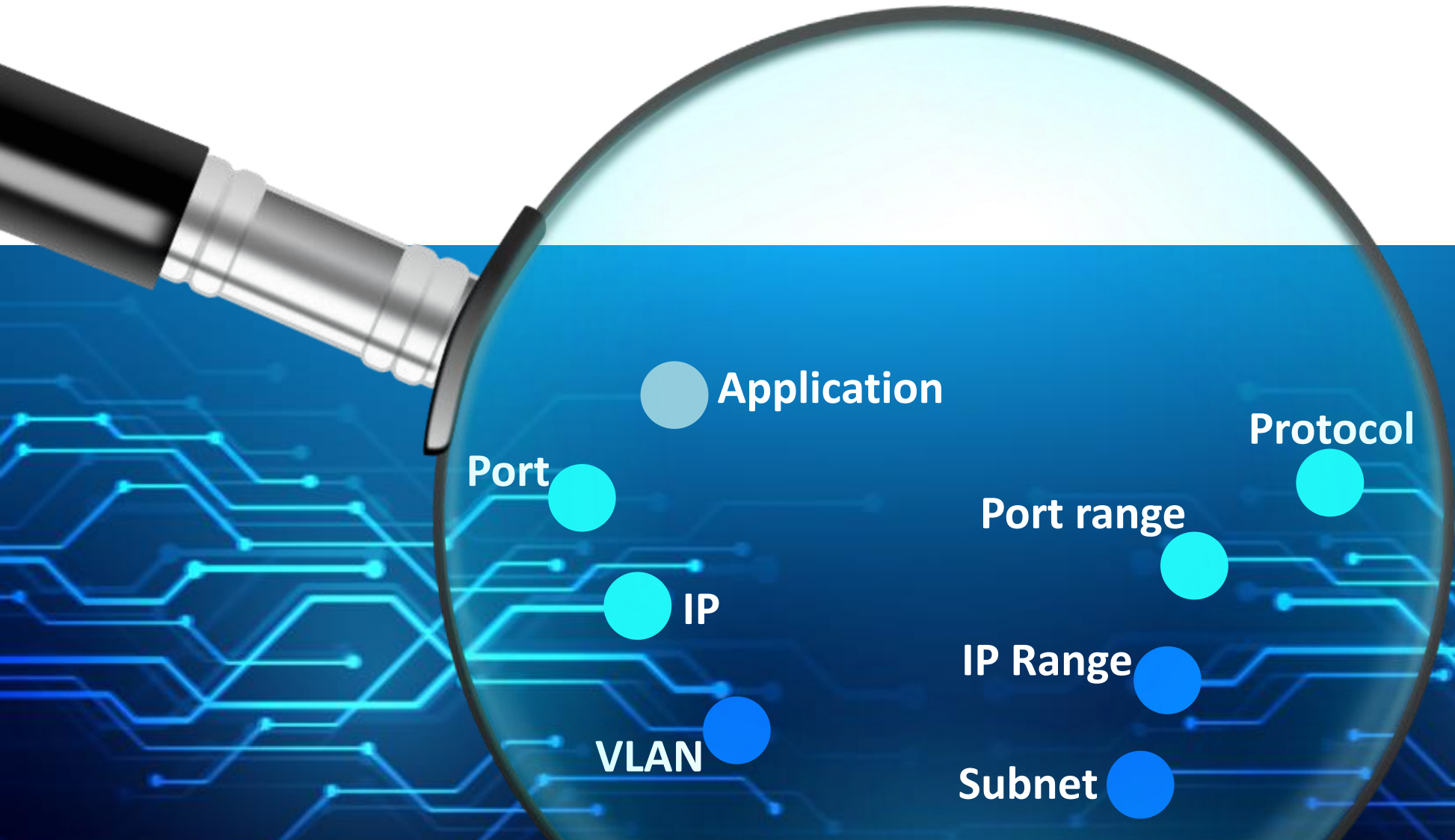
POLICIES

What?

How?

Match each of the classification rules to the desired profile

# Viewtify QoS - Classification Rules



# Viewtify QoS - Classification Rules

VIEWTIMANAGER

QoS

Version: viewtinet-probe-5.0.0-e766ed48.x86\_64 (release notes)

Logged in as Administrator

STOP RESTART START

CONFIGURATION ISSUES

### QoS Classification rules

Filter by type

Name	Type	Value	Search	Delete
Any port	Port	0		
Any protocol	Protocol	ANY		
Any IP	Subnet	0.0.0.0/0		
Google DNS (8.8.4.4)	IP	8.8.4.4		
Google DNS (8.8.8.8)	IP	8.8.8.8		
IP 1.1	IP	192.168.1.1		
IPs 1.1 to 1.127	IP range	192.168.1.1 - 192.168.1.127		
IPs 1.128 to 1.254	Subnet	192.168.1.128 - 192.168.1.254		
DNS port	Port	53		
HTTP	Port range	80		

- IP
- IP range
- Subnet
- Port
- Port range
- Protocol
- Application
- VLAN



---

# Viewtify QoS Profiles

## Min Rate

Allocate a minimum quantity of bandwidth to critical applications

Set a maximum throughput to non-critical or heavy applications

## Max Rate

## Priority Queue

Set different priorities according to the sensitivity of the flows

Drop the packets of undesired flows

## Drop

## Normal QoS

Leave the inherited QoS

No QoS set. In case of saturation more likely to be dropped

## No QoS

# Viewtify QoS - Profiles



VIEWTIMANAGER

Home  
Viewtisight  
Viewtimon  
**QoS**  
Data Sources  
Plugins  
Admin

QoS

Version: viewtinet-probe-5.0.0-e766ed48.x86\_64 (release notes)

STOP RESTART START

CONFIGURATION ISSUES

QoS Profiles

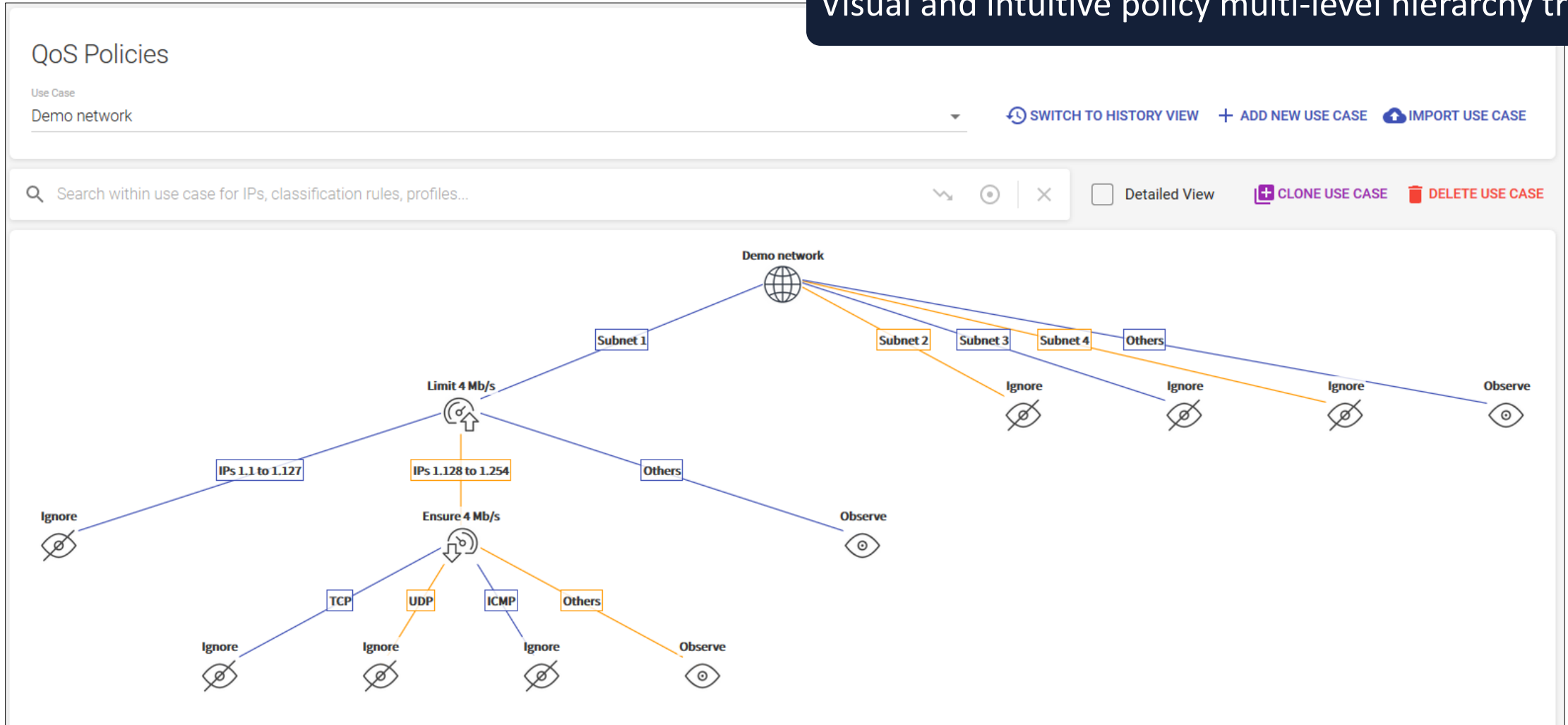
Filter by type

Name	Type	Download/Priority	Upload	Search	Delete
Ignore	No QoS				
Observe	Normal QoS				
Limit 4 Mb/s	Max Rate	4000 Kbps	4000 Kbps		
Limit 8 Mb/s	Max Rate	8000 Kbps	8000 Kbps		
Ensure 1 Mb/s	Min Rate	1000 Kbps	1000 Kbps		
Ensure 4 Mb/s	Min Rate	4000 Kbps	4000 Kbps		
High priority	Max Rate	high			
Medium Priority	Min Rate	medium			

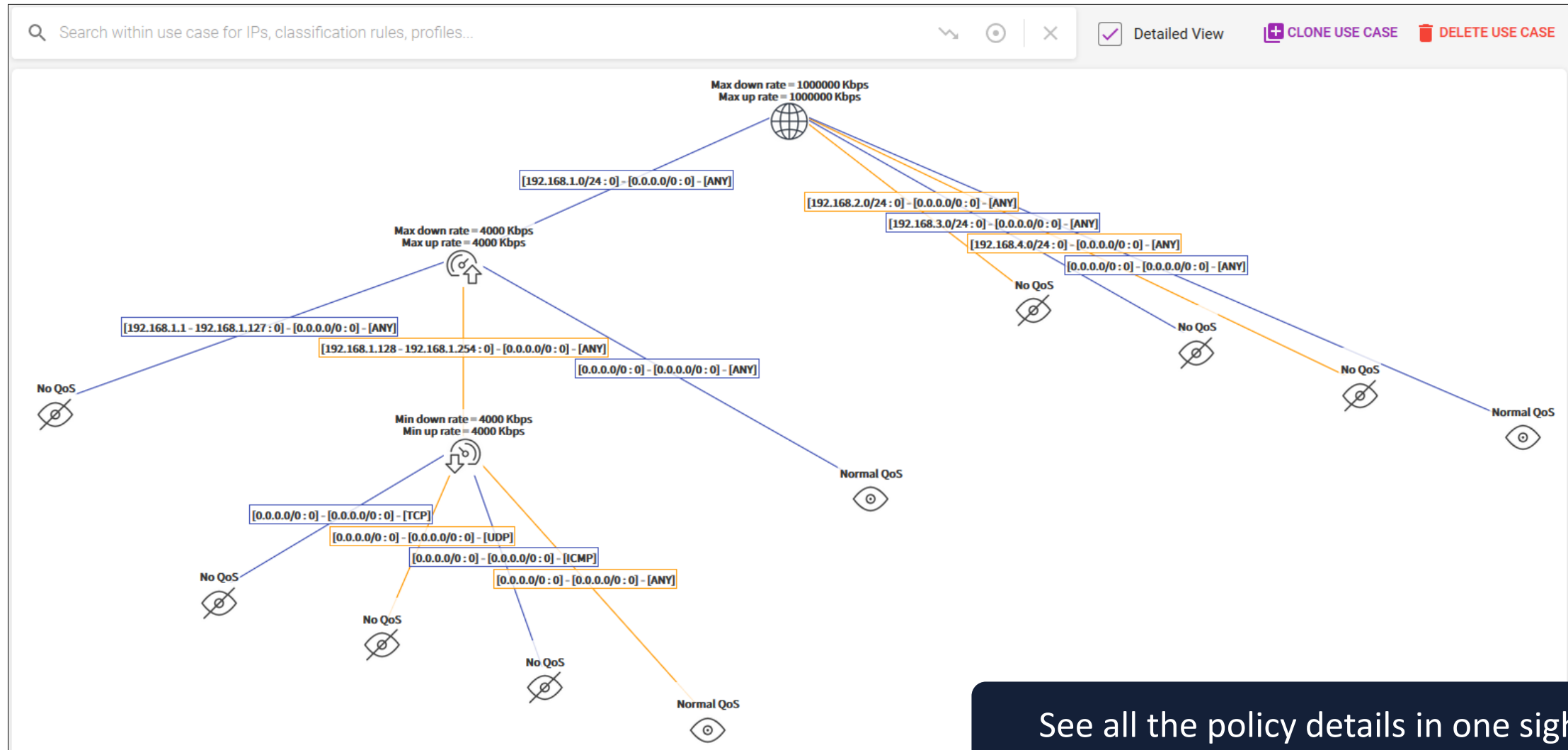
- Max Rate
- Min Rate
- Priority Queue
- Drop
- Normal QoS
- No QoS

# Viewtify QoS - Policies

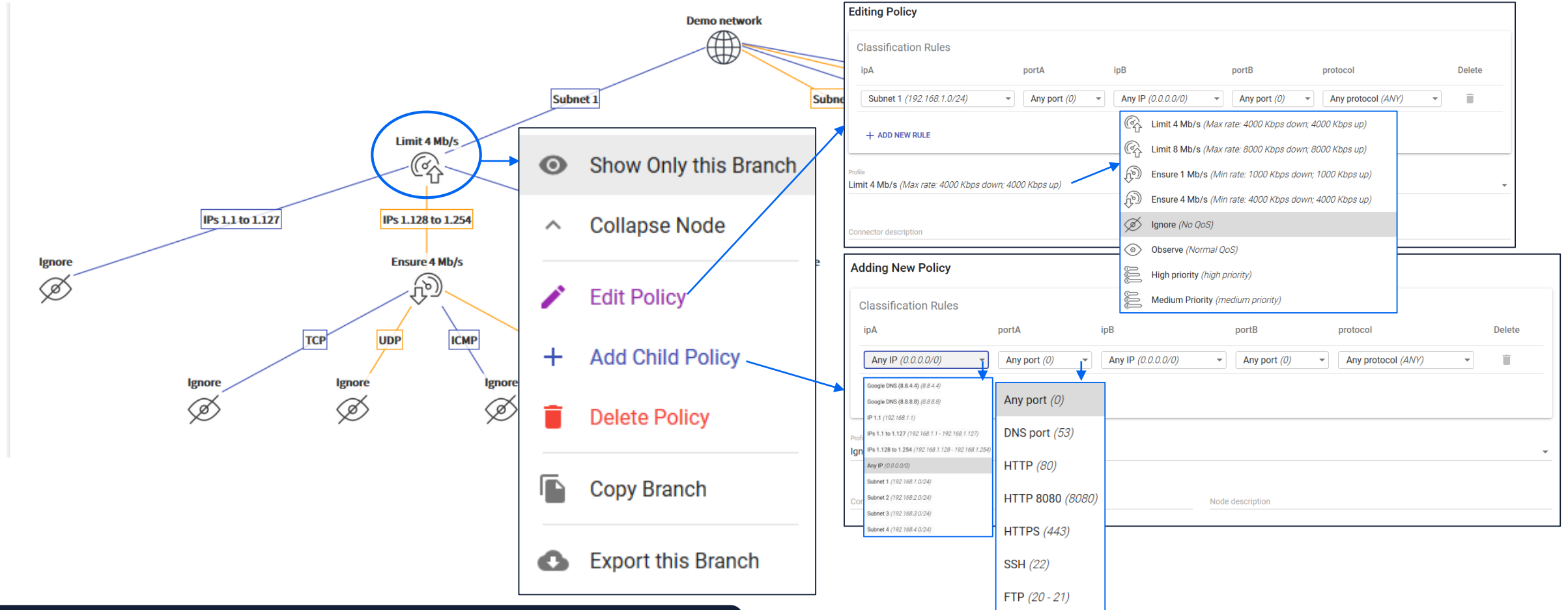
Visual and intuitive policy multi-level hierarchy tree



# Viewtify QoS – Policies (detailed view)



# Viewtify QoS – Policies (adding a policy)



The image illustrates the process of adding a policy in Viewtify QoS. It features a network tree on the left, a context menu in the center, and two configuration windows on the right.

**Network Tree:** A tree structure starting with a 'Demo network' root. It branches into 'Subnet 1' and 'Subnet 2'. Under 'Subnet 1', there are nodes for 'IPs 1.1 to 1.127' (with an 'Ignore' icon) and 'IPs 1.128 to 1.254' (with a 'Limit 4 Mb/s' icon). Under 'IPs 1.128 to 1.254', there is an 'Ensure 4 Mb/s' node, which further branches into 'TCP', 'UDP', and 'ICMP', each with an 'Ignore' icon.

**Context Menu:** A menu is open over the 'Limit 4 Mb/s' node, showing options: 'Show Only this Branch', 'Collapse Node', 'Edit Policy', 'Add Child Policy', 'Delete Policy', 'Copy Branch', and 'Export this Branch'.

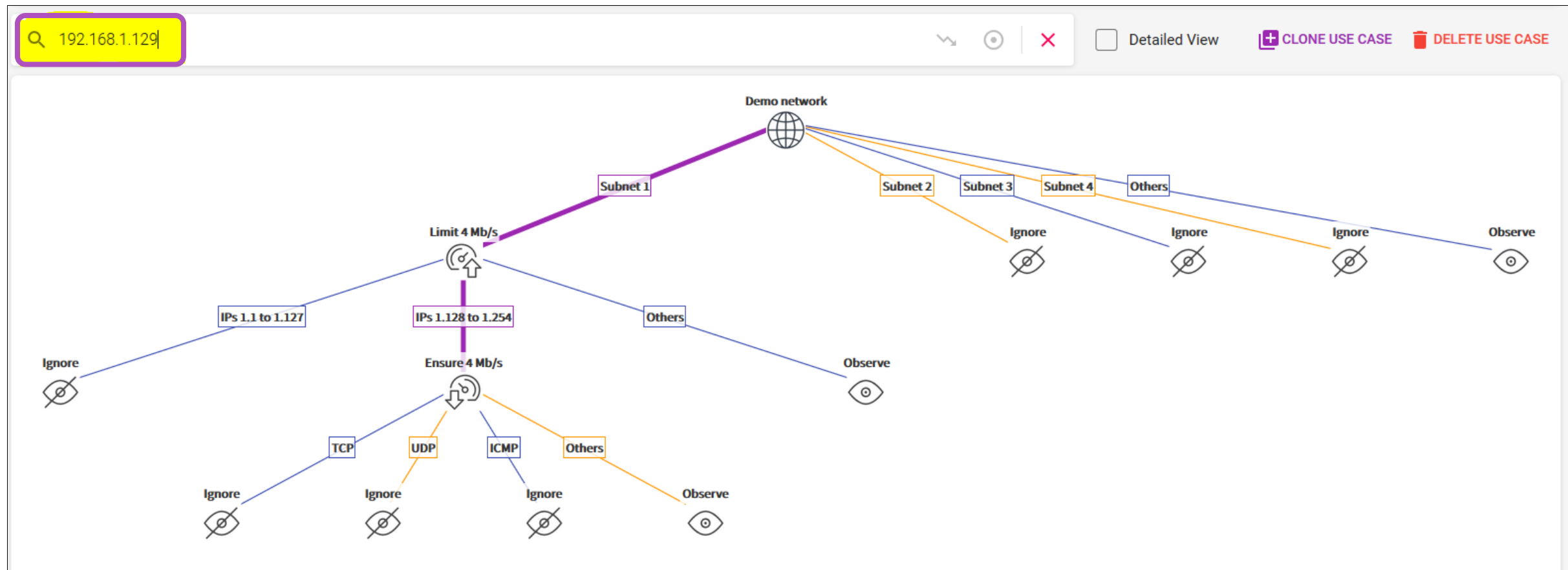
**Editing Policy Window:** Shows 'Classification Rules' with columns for ipA, portA, ipB, portB, and protocol. A rule is selected with a dropdown menu showing options: 'Limit 4 Mb/s (Max rate: 4000 Kbps down; 4000 Kbps up)', 'Limit 8 Mb/s (Max rate: 8000 Kbps down; 8000 Kbps up)', 'Ensure 1 Mb/s (Min rate: 1000 Kbps down; 1000 Kbps up)', 'Ensure 4 Mb/s (Min rate: 4000 Kbps down; 4000 Kbps up)', 'Ignore (No QoS)', 'Observe (Normal QoS)', 'High priority (high priority)', and 'Medium Priority (medium priority)'.

**Adding New Policy Window:** Shows 'Classification Rules' with a dropdown menu open for 'ipA'. The menu lists various IP ranges and protocols: 'Any IP (0.0.0.0/0)', 'Google DNS (8.8.4.4) (8.8.4.4)', 'Google DNS (8.8.8.8) (8.8.8.8)', 'IP 1.1 (192.168.1.1)', 'IPs 1.1 to 1.127 (192.168.1.1 - 192.168.1.127)', 'IPs 1.128 to 1.254 (192.168.1.128 - 192.168.1.254)', 'Any IP (0.0.0.0/0)', 'Subnet 1 (192.168.1.0/24)', 'Subnet 2 (192.168.2.0/24)', 'Subnet 3 (192.168.3.0/24)', and 'Subnet 4 (192.168.4.0/24)'. A second dropdown menu for 'portA' is also open, showing options: 'Any port (0)', 'DNS port (53)', 'HTTP (80)', 'HTTP 8080 (8080)', 'HTTPS (443)', 'SSH (22)', and 'FTP (20 - 21)'.

Add policies with few clicks. Fast learning curve.

# Viewtify QoS – Policies (search tool)

Search for any rule or profile and see the path



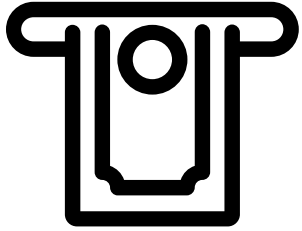


# Use Cases

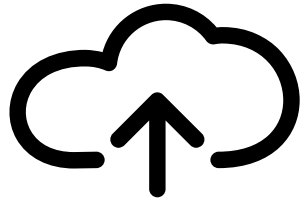
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Solutions per vertical

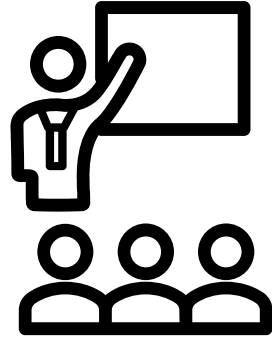
Finance



Data Centers



Education



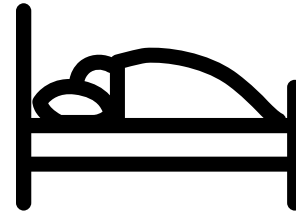
Solutions for every vertical



Government



Hospitality



Transportation

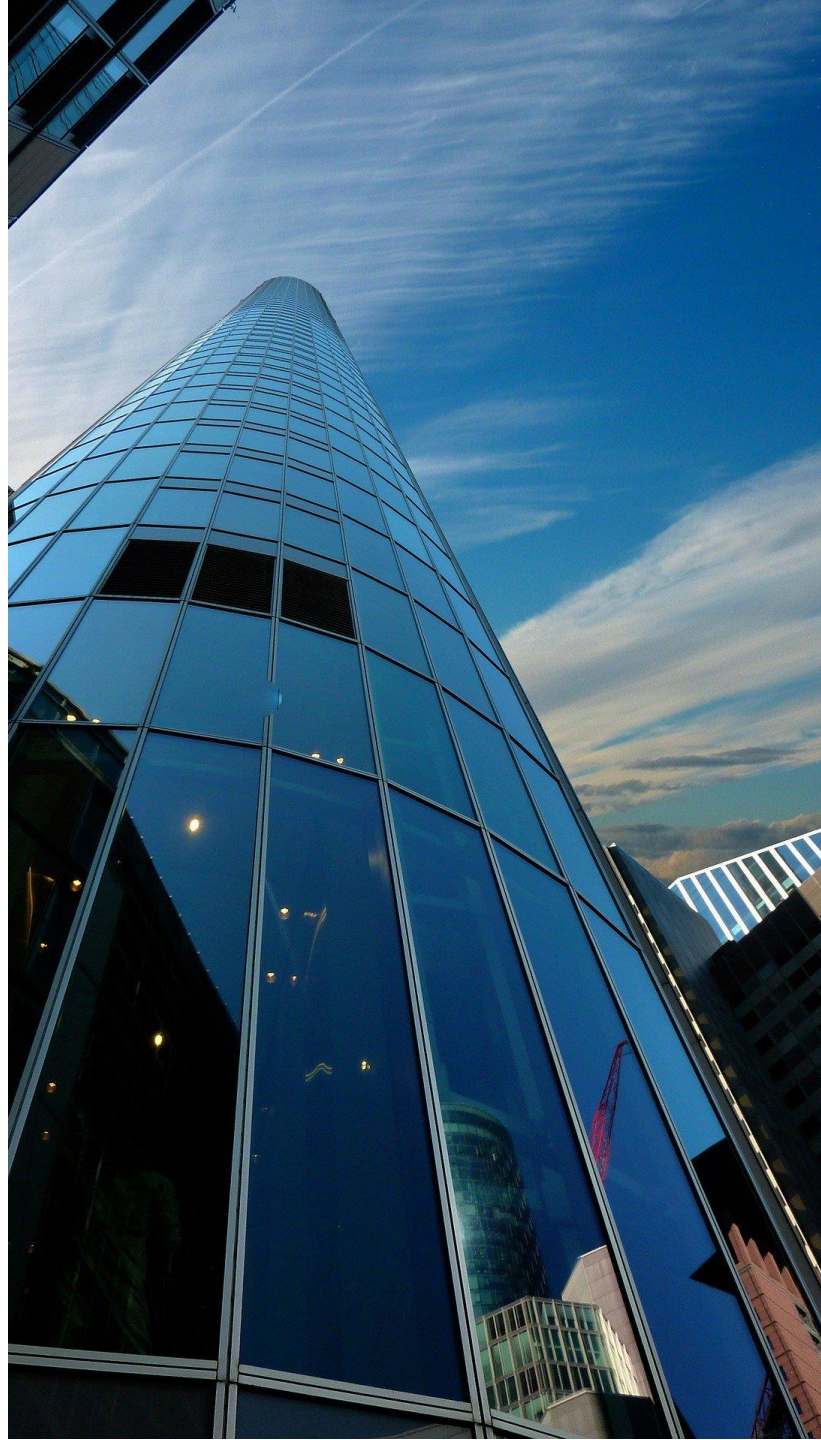






## Challenges

- Critical network elements and applications
- Multiple branches and regional offices with different needs
- Internet banking
- International links
- Employees wasting resources



## The Viewtinet Edge

- 360° visibility at application layer with QoE and KPIs
- Prioritize business critical applications
- Control of unwanted traffic
- Accelerate WAN & international links
- Manage & optimize critical links

## Challenges

- Exponential growth of volume and customer base
- High-demanding SLA
- Minimize time to market for new services
- Avoid high cost of WAN & Internet links
- Poor QoE with high-latency customers



## The Viewtinet Edge

- 360° visibility at application layer with QoE and KPIs for SLA management
- Enforce traffic policy to avoid congestion
- Multi-tenant for self reporting
- High-performance platforms
- TCP acceleration

## Challenges

- Thousands of users
- Lack of control between types of users (pupils and corporate)
- Frequent P2P downloading
- Poor Wi-Fi QoE



## The Viewtinet Edge

- 360° visibility at application layer with QoE and KPIs
- Prioritize academic and admin applications
- Control of unwanted traffic
- Improved Wi-Fi QoE with TCP optimization

## Challenges

- Critical ad-hoc applications
- Multiple branches and regional government offices
- High-demanding data centers
- Legal problems due to the



## The Viewtinet Edge

- 360° visibility at application layer with QoE and KPIs
- Prioritize mission critical applications and optimize data center performance
- Control of unwanted traffic
- Definition of multiple rules per office

## Challenges

- Lack of network visibility
- Bottlenecks
- Lack of control between different users (guests, employees)
- Wi-Fi service and BYOD
- Employees wasting resources



## The Viewtinet Edge

- 360° visibility at application layer with QoE and KPIs
- Control of unwanted traffic
- Wi-Fi policy controls. Tiered service and fair usage.
- Improve QoE with TCP optimization



## Challenges

- Poor network visibility
- Bottlenecks
- Multiple branches and regional offices with different needs
- International links
- Employees wasting resources
- Wi-Fi service



## The Viewtinet Edge

- 360° visibility at application layer with QoE and KPIs
- Prioritize business critical applications
- Control of unwanted traffic
- Accelerate WAN & international links.
- Wi-Fi policy controls

thank you

