XPoint Network

AppScaler 101

About AppScaler

What AppScaler Do

- Applications High Availability
- Accelerate Application Delivery
- Layer 3 -7 Security Protection
- High Quality User Experience

AppScaler Difference

- All-in-One Application Delivery
- Simplicity
- Application Visibility
- 64 Virtual Instances on one unit
- Dual IPv4 and IPv6 Stack
- Single Sign On
- Full APIs
- High Performance Platform

Benefits

- Unmatched ***Scalability***
- Optimized Application ***Availability***
- Robust Application ***Security***
- ***Cost Effective*** Application Delivery

About AppScaler

XPoint Network (Hong Kong) was established in 2015 to provide a flexible and cost-effective turn-key application delivery solution.

The team at XPoint Network is equipped with a highly developed skillset developed over decades of experience in rigorous, unforgiving ISP environments, and this business experience makes us uniquely positioned to offer application delivery solutions promising stability, scalability and top notch performance.

Customers


中国工商银行
INDUSTRIAL AND COMMERCIAL BANK OF CHINA


ANIA
AZANIA BANK LTD
The One Stop Financial Centre


AMERICAN
UNIVERSITY
OF NIGERIA


ELIZADE
UNIVERSITY


中国电信
CHINA TELECOM


HUAWEI


ZANTEL


Smart
let's talk


ans
Ariana Network Services
Sky is the limit


ioglobal


SOL
Cable Visión

AppScaler 101

- Server Load Balancing (SLB)
- Global Server Load Balancing (GSLB)
- Application Security
- Application Optimization
- Multi-Tenancy
- Product Offerings

AppScaler 101

Server Load Balancing

SLB – Load Balancing

Health Monitor Check

Check RS Health Status

Ping Host
TCP Echo
Telnet
RDP
HTTP(s) 1.0/1.1/2.0
DNS
FTP
SMTP
POP3
IMAP
NNTP
LDAP

Content Switching

Layer 7 Payload

URL
URL Tokens
HTTP Method
HTTP Request
HTTP Header
Source IP
HTTP Content

Persistence

Store Session Info.

HTTP Cookie
Application Cookie
Cookie Hash
URL Hash
Query Hash
Custom HTTP Header
Source IP Hash
SSL Session ID
UDP SIP
RDP Service
RDP Session
RDP Source

Load Balancing

Layer 4 – 7 TCP/UDP

Round Robin
Ratio Round Robin
Least Connection
Ratio Least Connection
Predictive
Ratio Response Time
Source IP Hash

Deployment Mode

Deployment Options

One armed
Multiple armed
NAT
Direct Return
Reverse Proxy
VLAN/XVLAN/Port Bond
IPv4/IPv6 Dual Stack

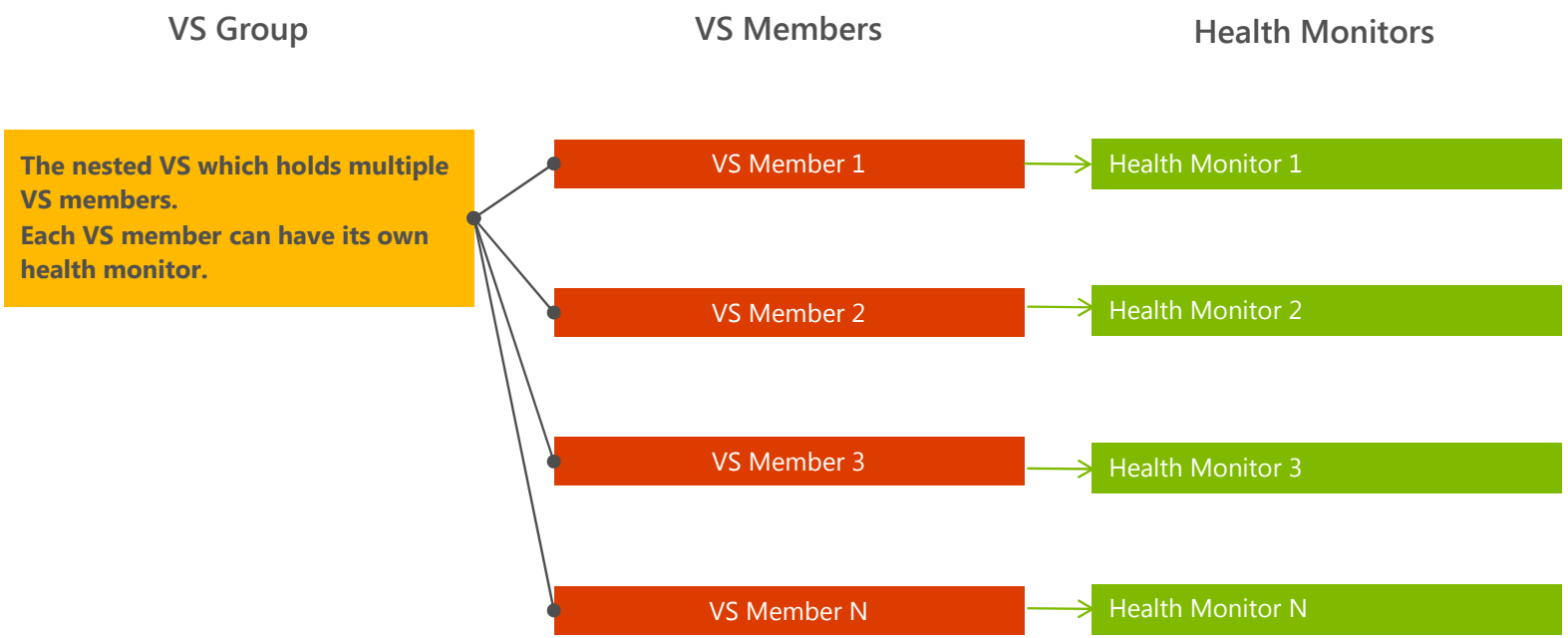
SLB – Health Monitor Check (Overview)

Each virtual service has a monitor bound to it. And AppScaler probes the real server health status via monitor.

- **If real server responds to the probe, the monitor marks it UP**
- **If real server fails to respond to the monitor within the pre-defined time period for the number of pre-defined times, the monitor marks it DOWN. And AppScaler will remove the real server from the server pool hence it will not receive the user requests.**

SLB – Multiple Health Monitors

VS Group/VS Members designed to configure multiple health monitor for one VS.



SLB – Content Switching (Overview)

Distribute client requests to servers based on layer 7 payload including:

- **URL/URL Tokens**
- **HTTP Method/Request/Header/Content**
- **Source IP**

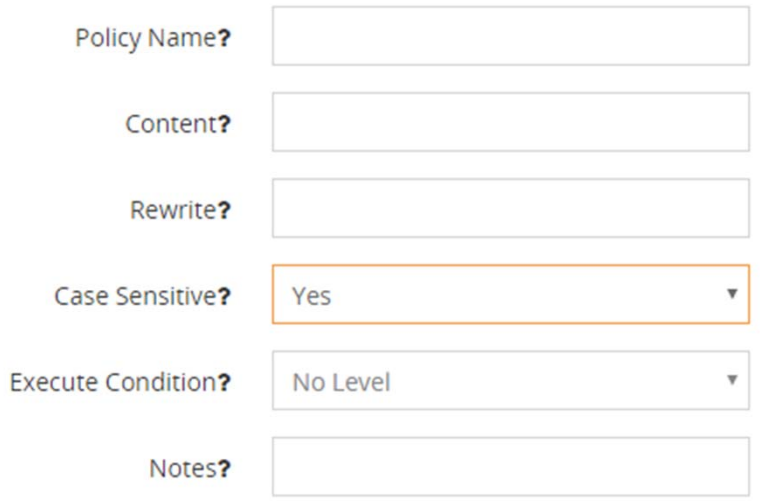
Some User Cases:

- **Same VIP for different domains**
- **Mobile/Desktop requests distributed to different servers**
- **Direct request based on browser language**
- **Route the traffic based on customer's source IP to different servers**
- **Route the traffic to specific servers based on URL pattern matching**

SLB – Content Switching (Response Rule)

Response Rewriting

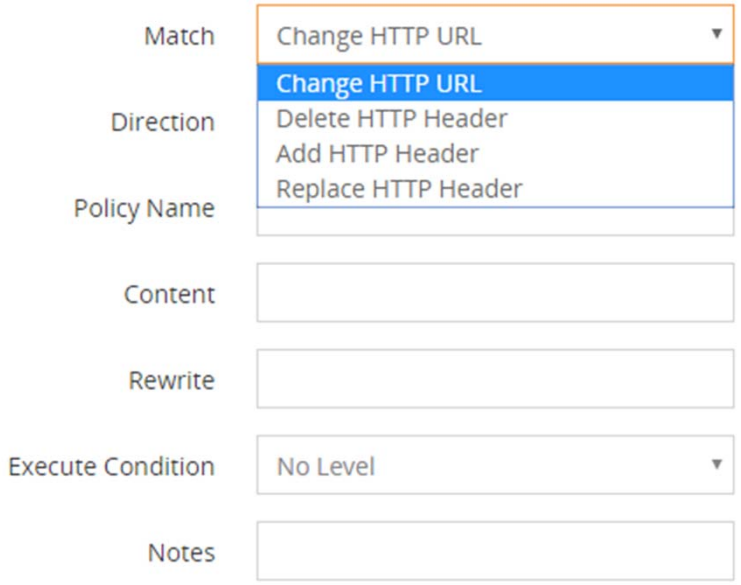
- **HTTP Response content can be replaced with the pattern you specify.**



SLB – Content Switching (Header Rule)

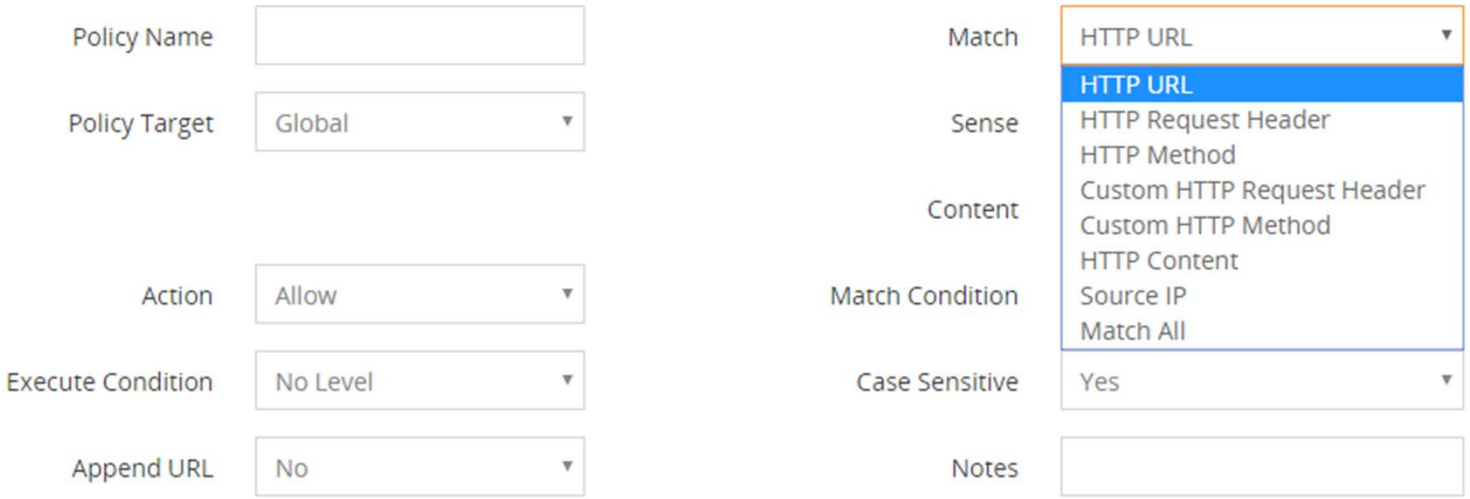
Header Rewriting, both inbound and outbound http header can be modified including:

- **Change HTTP URL**
- **Delete HTTP Header**
- **Add HTTP Header**
- **Replace HTTP Header**



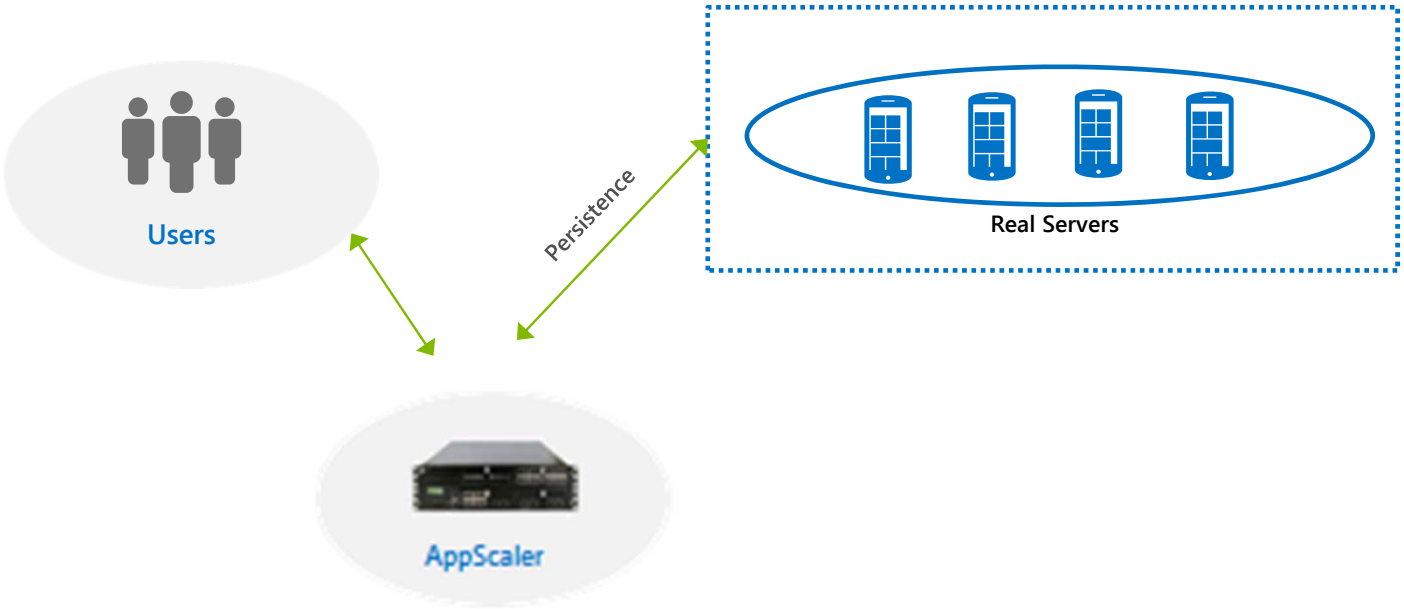
SLB – Content Switching (Content Rule)

Content rule can either be global or real server specific based on various attributes including: HTTP URL,HTTP Request Header, HTTP Method, Custom HTTP Request Header, Custom HTTP Method, HTTP Content, Source IP



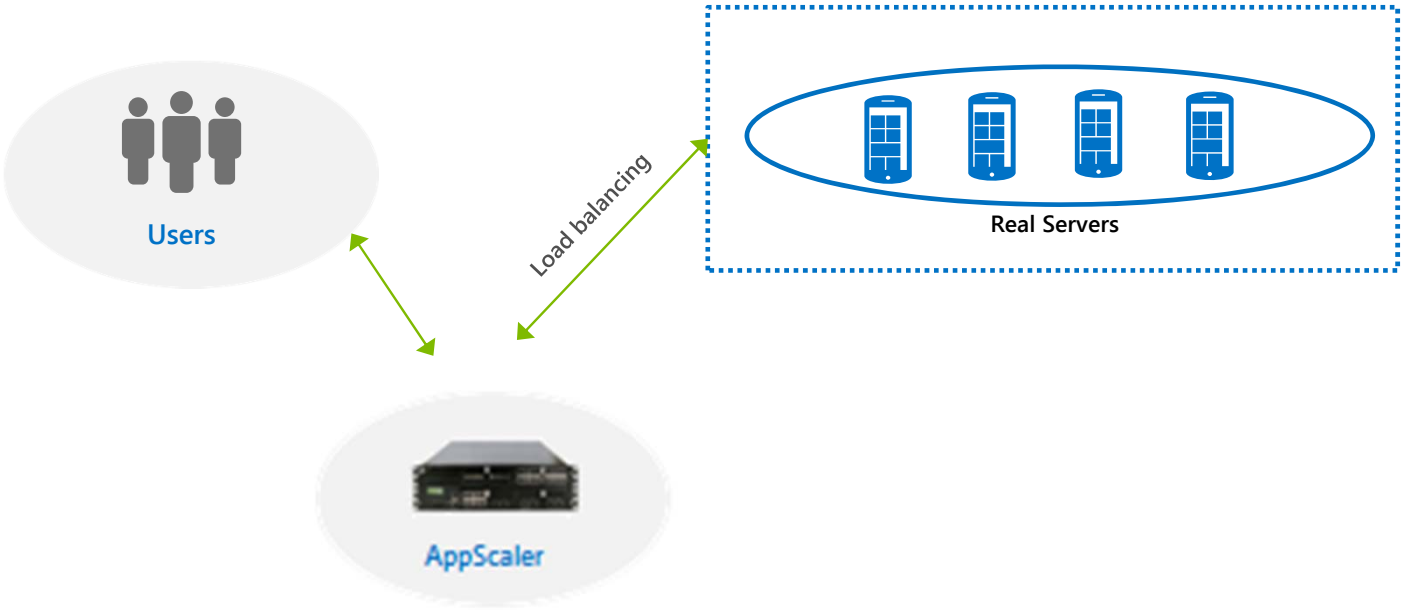
SLB – Persistence

Clients are sent to the same real server until the persistent connection expires.



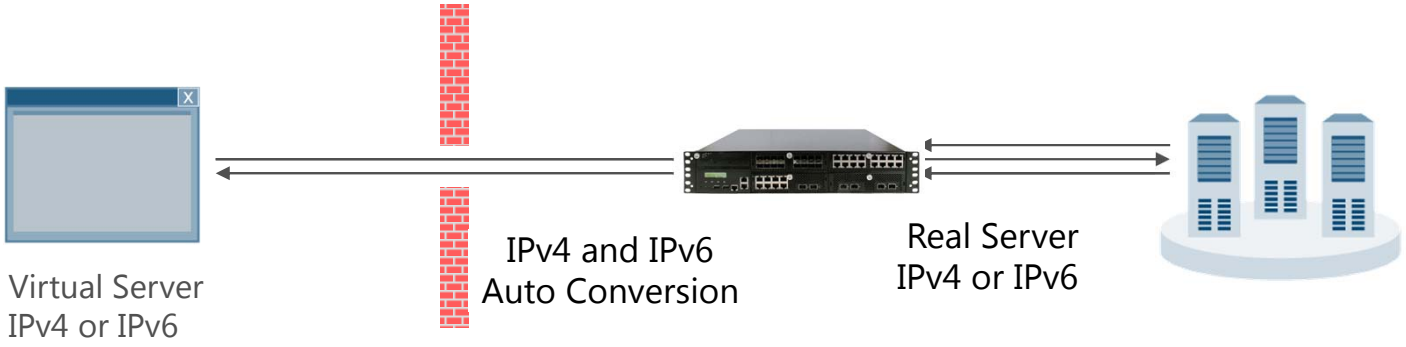
SLB – Load Balancing

AppScaler supports various load balancing methods, either static or dynamic.



SLB – Dual IPv4 and IPv6 Stack

- **Full support on Dual IPv4 and IPv6 Stack**
- **Automatic IPv4/IPv6 conversion makes IPv6 migration much easier**
- **Client(IPv4)->VS(IPv4)->RS(IPv4)**
- **Client(IPv6)->VS(IPv6)->RS(IPv6)**
- **Client(IPv4)->VS(IPv4)->RS(IPv6)**
- **Client(IPv6)->VS(IPv6)->RS(IPv4)**
- **Response rewrite to fix external links in IPv4 website**



AppScaler 101

Global Server Load Balancing

GSLB - Overview

Global Server Load Balancing (GSLB) makes your network reliable and available by scaling applications across multiple data centers for disaster recovery or to improve application response times.

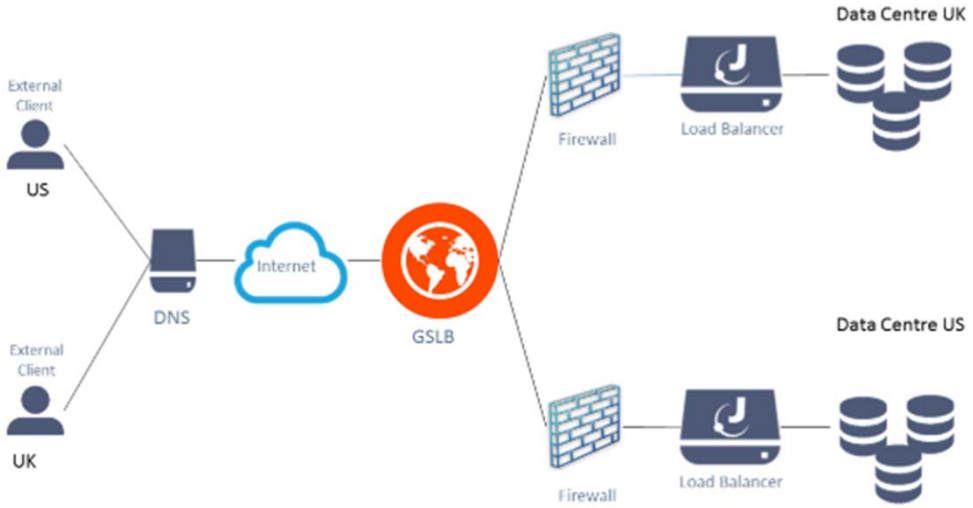
AppScaler provides flexible, scalable and high-performance load balancing across geographically dispersed datacenters to provide protection against the effects of business continuity and disaster recovery events. Working as authoritative DNS for the desired domain, it can support a wide range of load balancing algorithms to direct DNS queries across optimal paths to servers at highly-available datacenters.

AppScaler can be configured across multi datacenters to exchange datacenter metrics, network metrics, real server metrics and persistence information as one cluster.

GSLB - How it works

AppScaler acts as authoritative domain name server (ADNS) to resolve Web site domain and sub-domain names. All DNS requests will be processed and responded by AppScaler which will select best site and the most suitable GSLB virtual service IP address to the client.

- Data center failover and continuity
- Client geographic awareness
- Distributed site performance awareness
- Best performing sites get fair proportion of traffic



GSLB - DNS Integration

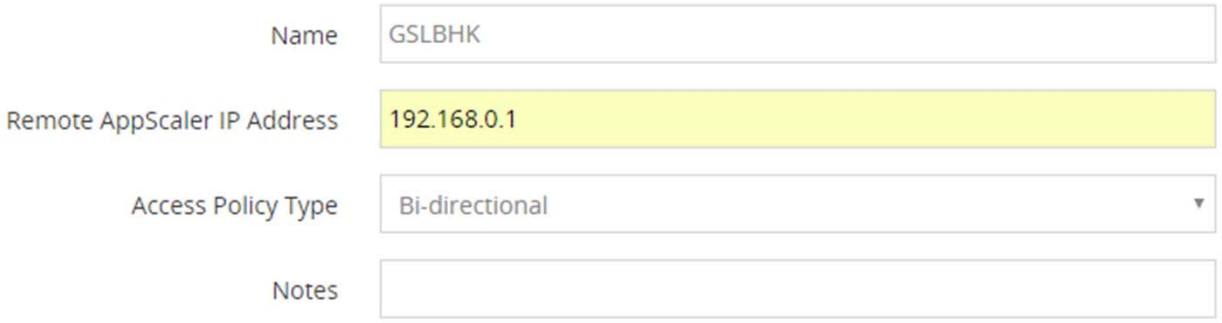
AppScaler can act as authoritative name server for an entire zone or subdomain, by adding one NS record pointing to XPoint AppScaler IP address, it is all set. The A (IPv4) and AAAA (IPv6) are supported.

The process of domain name resolution provided by AppScaler is as below:

- The client sends DNS query to local DNS to resolve the domain www.test.com
- The local DNS finds that AppScaler is the authoritative DNS for domain www.test.com
- Local DNS forwards the DNS query to AppScaler
- AppScaler will determine which virtual service IP address is to returned based on its health and algorithm
- AppScaler return the suitable virtual service IP address to local DNS server
- The local DNS returns the virtual service IP address to the client

GSLB - Deployment Options

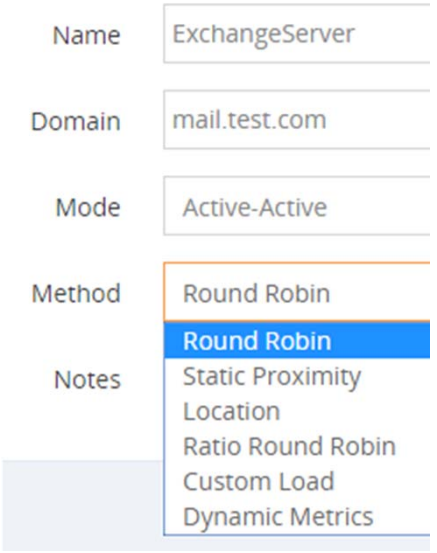
- **Outside the datacenters as authoritative name server in one single unit or HA pairs.**
- **Deployed in each datacenter, either one single unit in each datacenter or HA pairs, all the AppScaler configuration is synchronized in real time and all the datacenter performance metrics are exchanged in real time**



GSLB – Load Balancing Methods

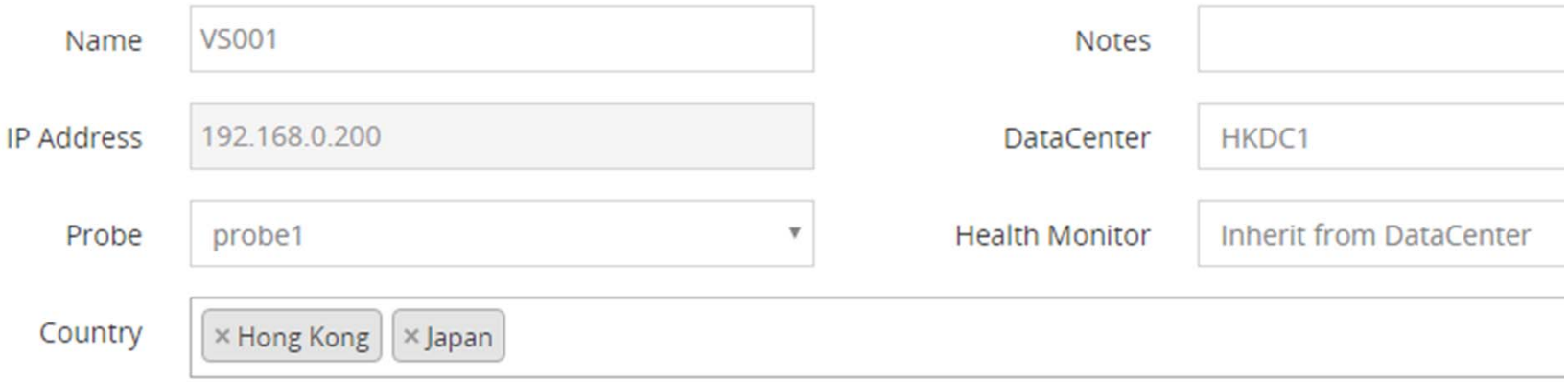
AppScaler supports a wide range of global load balancing methods to provide highly flexible traffic distribution across multiple datacenters:

- **Active-Passive and Active-Active**
- **Round Robin**
- **Static Proximity**
- **Location**
- **Ratio Round Robin**
- **Custom Loads**
- **Dynamic Metrics**



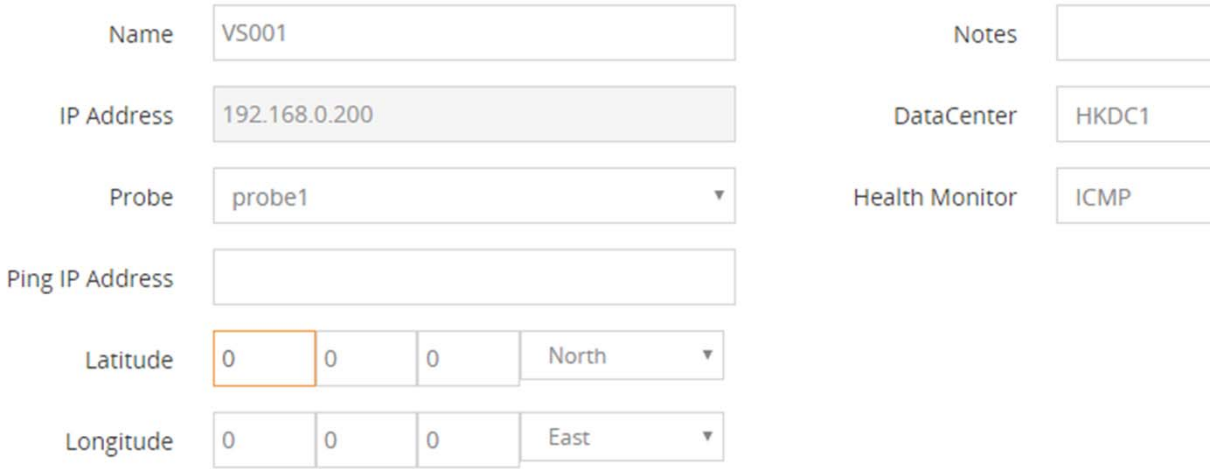
GSLB – Locations

With built-in location ip database, AppScaler can direct the client connections to the closest datacenters.



GSLB – Static Proximity

AppScaler supports custom proximity method which can direct client connections based on their location qualifiers.



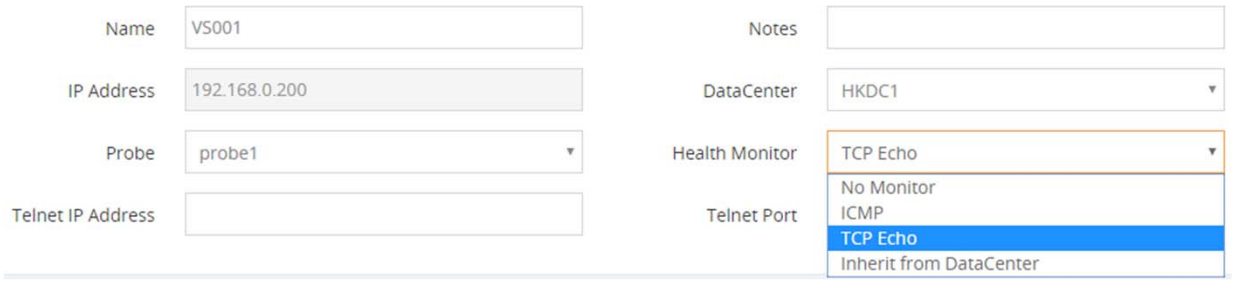
GSLB – Persistence

AppScaler supports GSLB persistence, a series of client DNS queries is sent to the same datacenter instead of being distributed based on load balancing methods.

GSLB – Health Monitoring

AppScaler layer 3/4/7 health monitoring against virtual services in different datacenters:

- **ICMP**
- **TCP Echo**
- **Inherit the probe of datacenters**
- **The integrated health monitor from Server Load Balancing**



AppScaler 101

Application Security

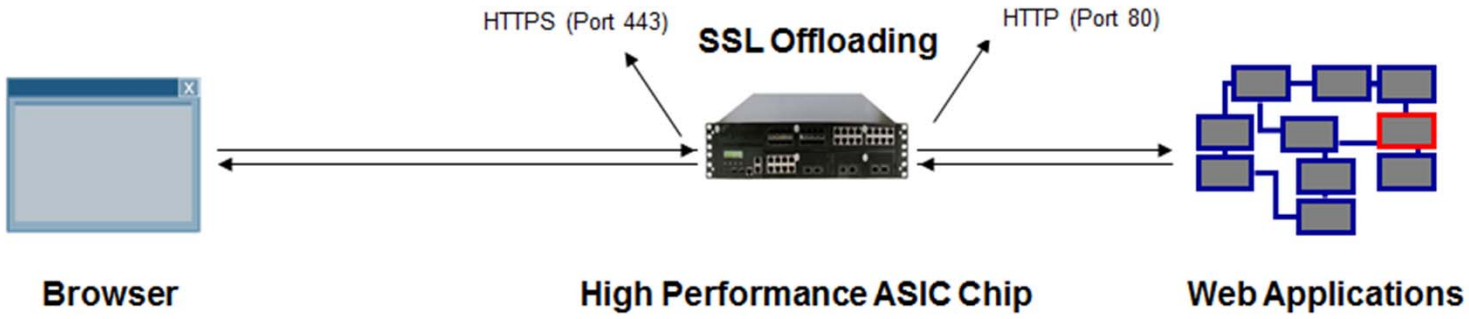
Application Security - Overview

AppScaler offers integrated security modules to mitigate the emerging threats at network, application layers.

Our unique approach to application security focuses on bringing best-in-class, easy-to-deployment and multi-layered protection to any business applications in either on-premise data centers or cloud.

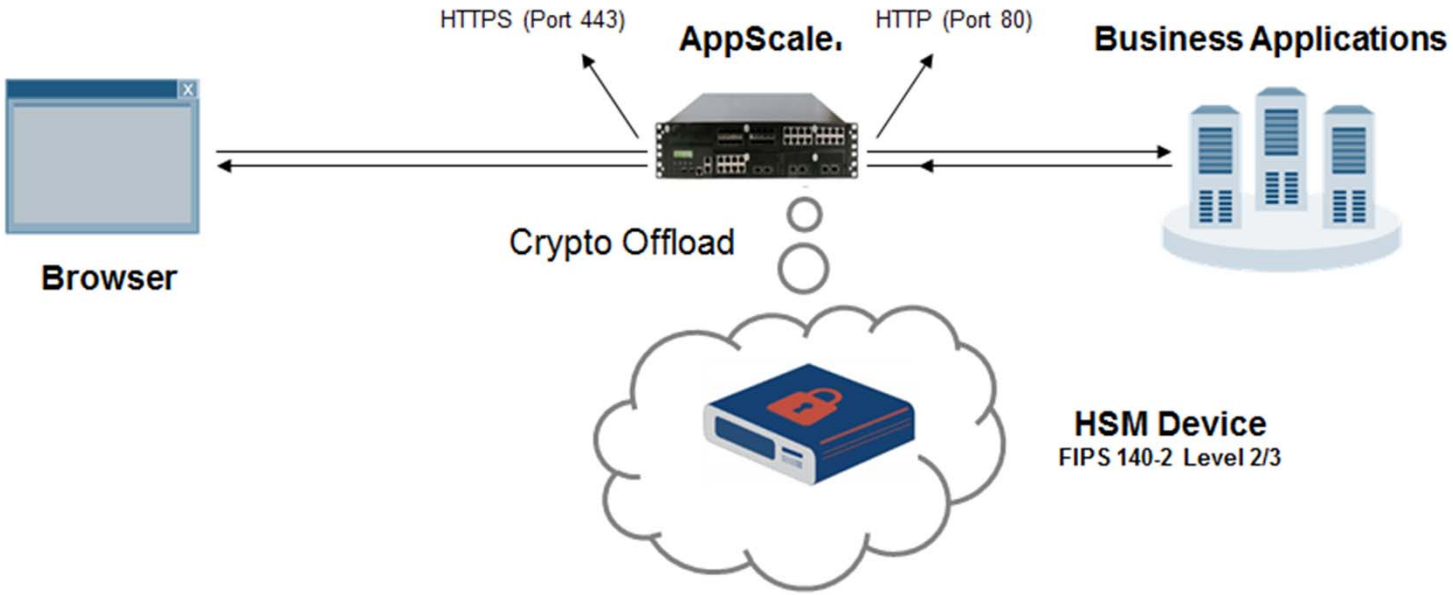
Application Security – SSL Offloading

- ASIC SSL Acceleration Card: 75K SSL TPS
- 4096bit Key Support
- SSL Visibility
- SSL Termination and SSL Bridging Supported
- TLS 1.0/1.1/1.2/1.3 and SSL 2.0/3.0 Supported
- Central Certificate Management
- Client Certificate Verification Support
- OSCP Stapling Support



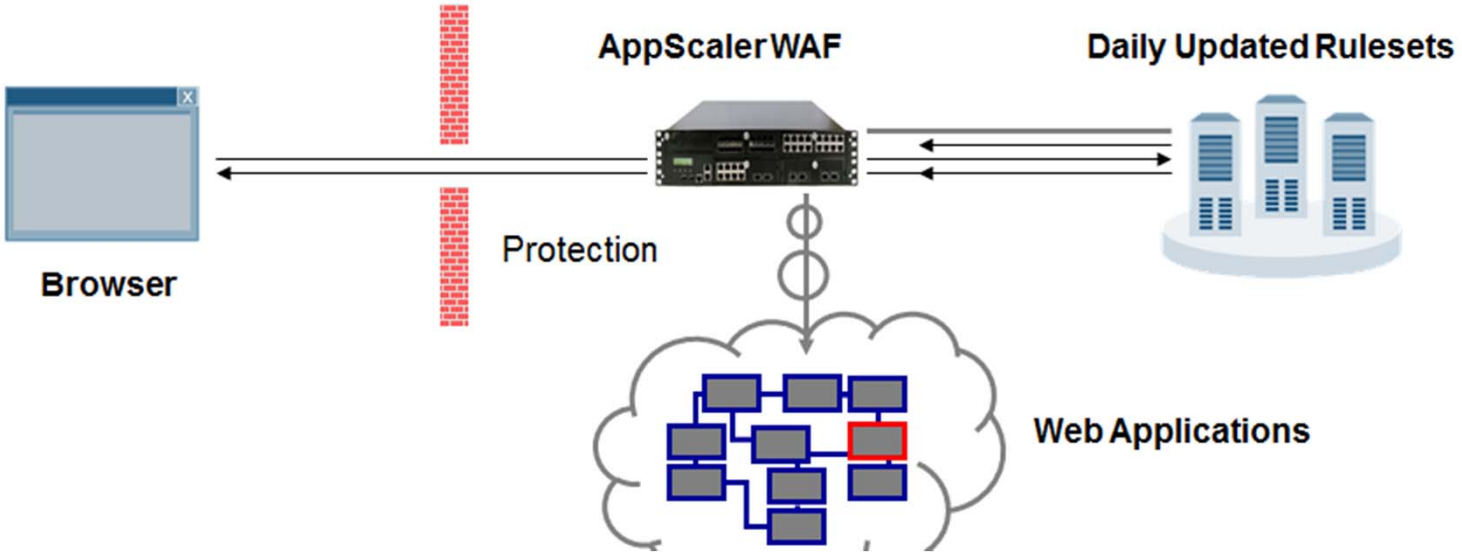
Application Security – HSM (Hardware Security Module)

- **A hardware security module (HSM) is a dedicated crypto processor that is specifically designed for the protection of the crypto key lifecycle.**
- **AppScaler has the support for Safenet external hardware security modules (HSM). The Safenet HSM is FIPS-compliant and can be used to store private keys for AppScaler hardware or virtual appliance.**



Application Security – Web Application Firewall

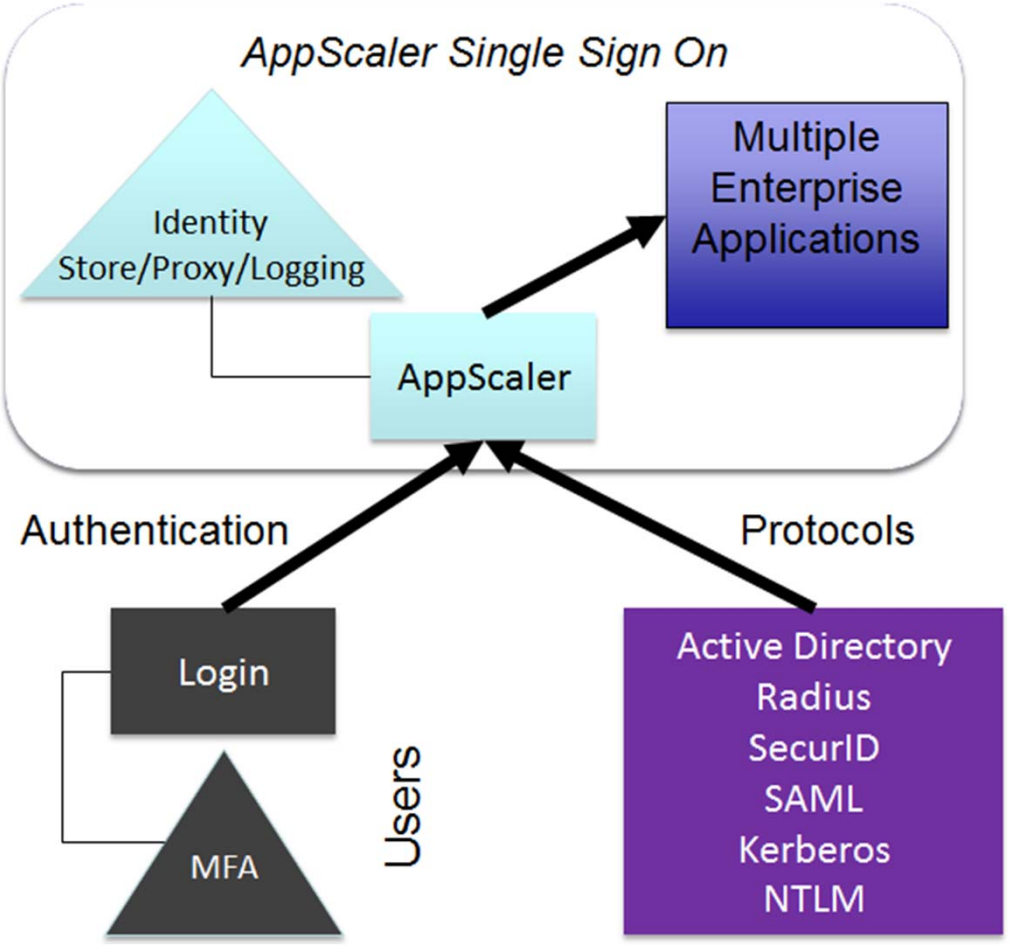
- *Full Coverage of OWASP Top-10 including XSS, Injection and CSRF*
- *Protection against Zero-Day Web Attacks*
- *Thousands of captured webshells and backdoors from web honeypot attacks can be identified and blocked*
- *Identify and cut off web attacks generated by botnet clients*
- *Detect and deny traffic originating from application-level denial of service tools such as HOIC/LOIC, Pandora, Drive, and more*
- *Protection against sensitive data exposure and built-In IP Reputation Service*



Application Security – Single Sign On

AppScaler provides centralized and flexible application access authentication to consolidate identity access management infrastructure and realize enhanced security at a reduced operational cost.

- *Unified Access Policy across different business applications*
- *Pre-Authentication*
- *Active Directory/SAML/Radius/RSA SecurID/NTLM Seamless Integration*
- *Customizable Login Form*
- *Dual Factor Authentication*
- *Fully Programmed Post Form*



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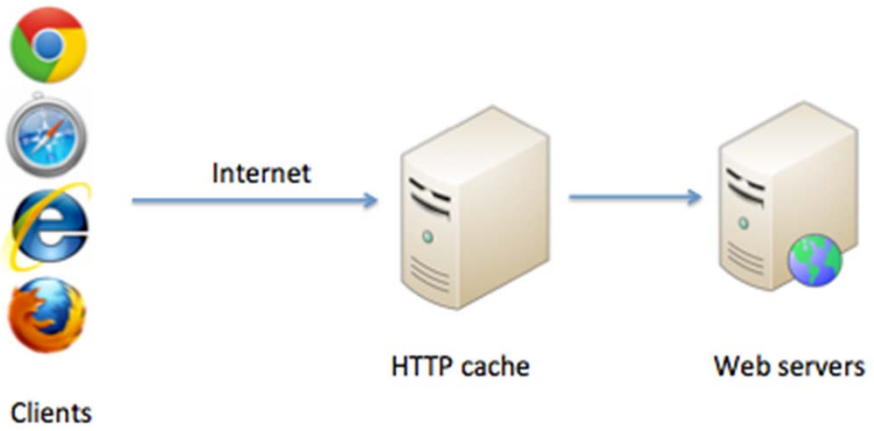
Application Optimization

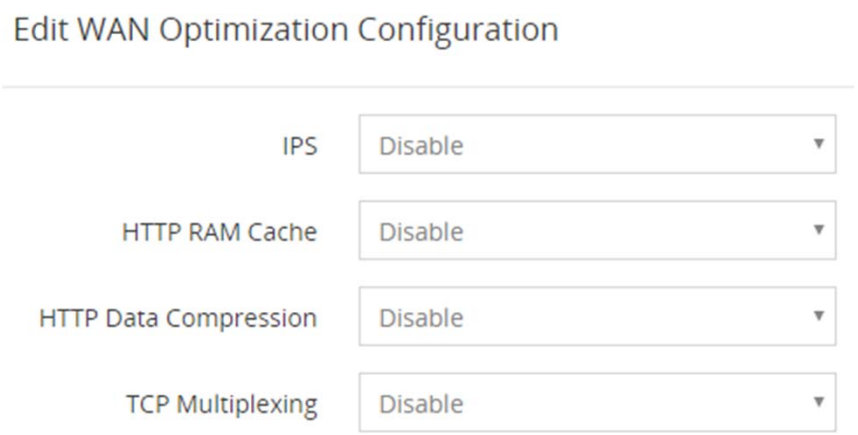
Application Optimization – Web Caching

- **Local storage of network data for re-use**



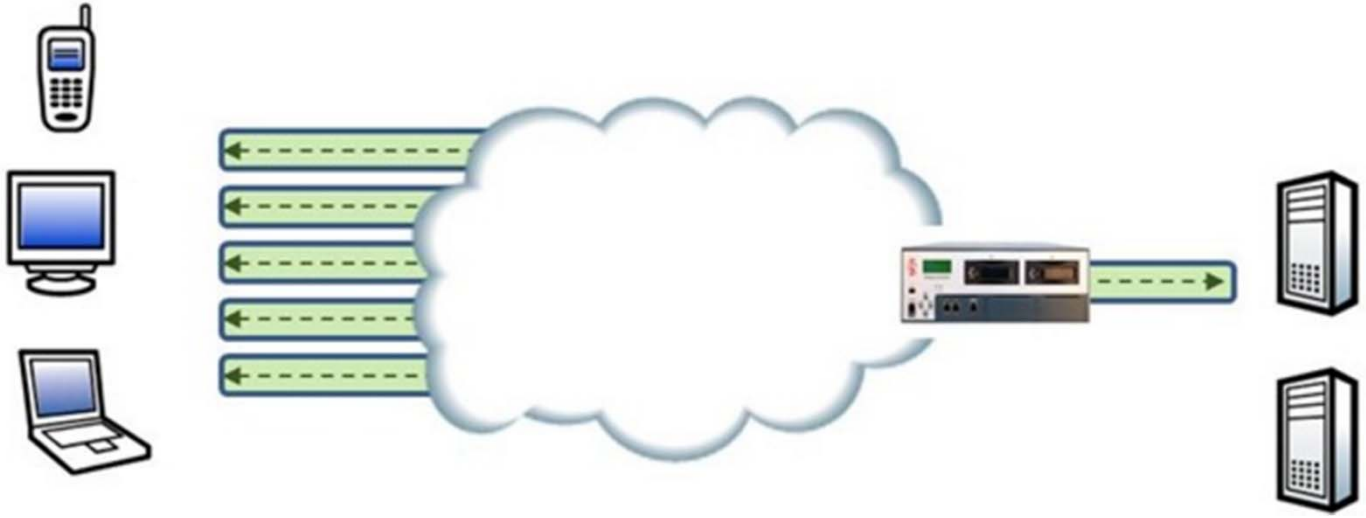
Application Optimization – Compression

- **Compress both static and dynamically generated data**
- **GZIP or the DEFLATE compression algorithm**



Application Optimization – TCP Multiplexing

- **Reuse existing TCP connections**
- **Improve performance**
- **Improve capability of servers**

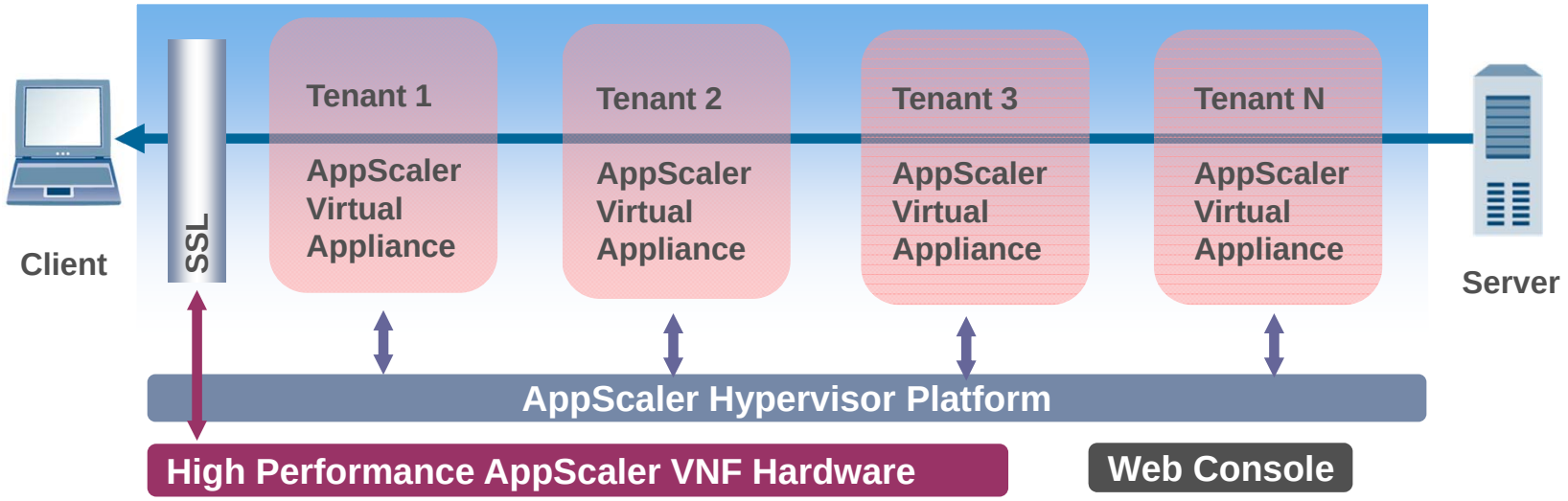


AppScaler 101

Multi-Tenancy

Multi-Tenancy - Overview

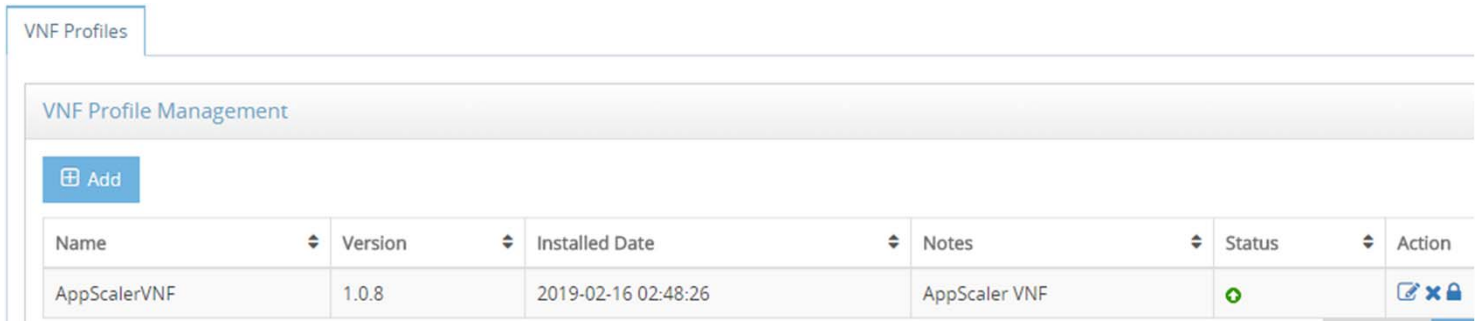
AppScaler VNF Manager allows customers to deploy AppScaler Application Delivery Controller as Virtual Function through single-pane-of-management platform. Regardless of where each AppScaler Application Delivery Controller is deployed, all load balancing functions are provisioned and managed centrally, AppScaler VNF Manager makes it possible to seamlessly design feature rich managed load balancing services with agility and capacity on-demand.



Multi-Tenancy - Zero-Touch Provisioning

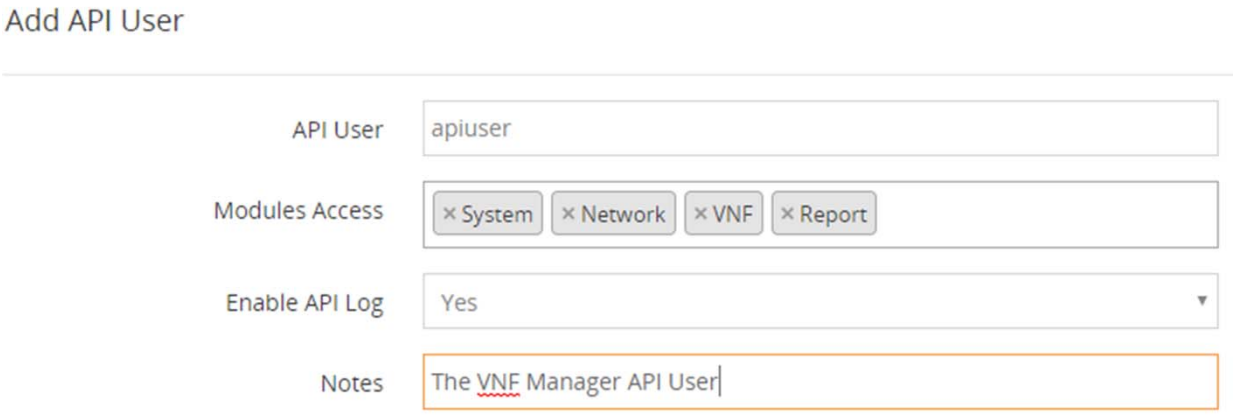
VNF Manager reduces deployment time and minimizes time required for change management..

- *Profile based VNF Deployment in one click*
- *ADC Tenant On-the-Fly Specification Configuration*
- *Add/Start/Stop/Delete ADC Virtual Function*
- *Template-based Tenant Resource Group*



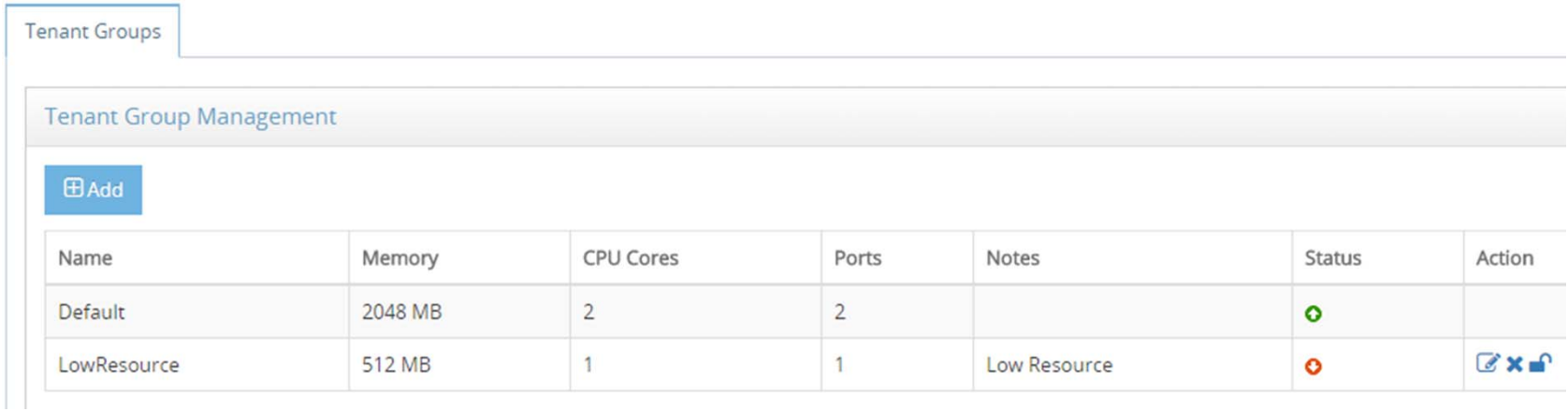
Multi-Tenancy - Programmability and Automation

VNF Manager provides comprehensive set of API for service provisioning and automation.



Multi-Tenancy - Scalability and Elasticity

VNF Manager allows customers to dynamically scale up and down based on capacity and performance requirements.



AppScaler 101

Product Offerings

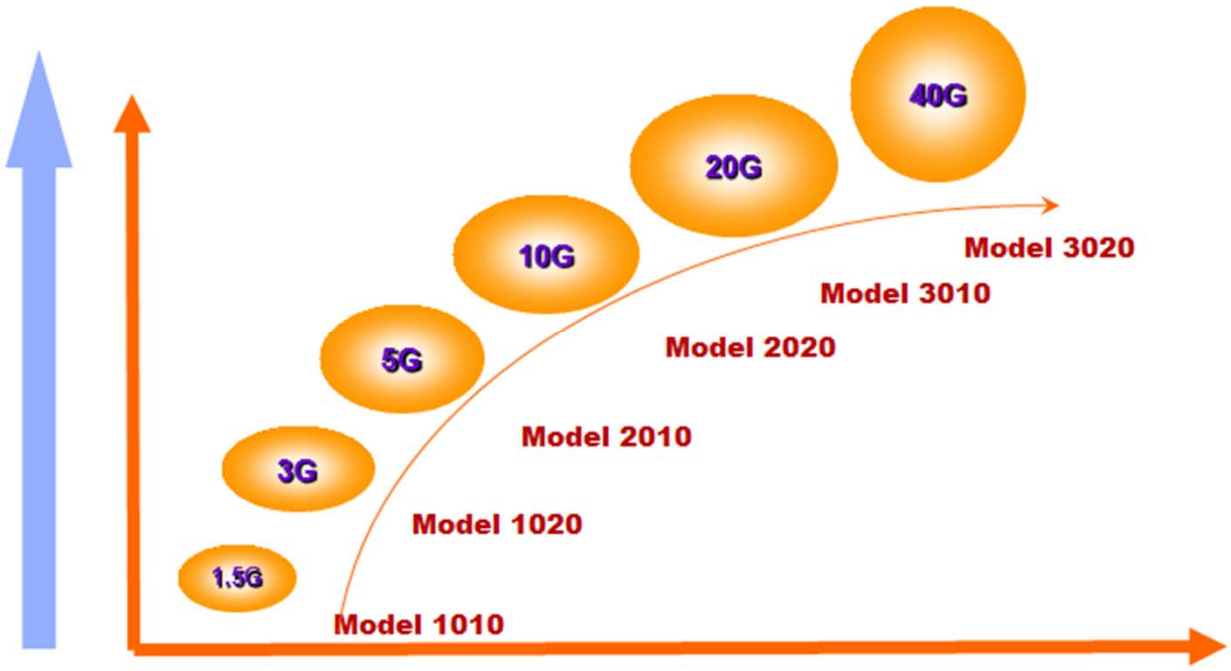
Product Offerings – Virtual Appliances

- **Runs on all the leading virtualization platforms and brings with it application-control capabilities, such as load balancing, increased security, optimized application delivery and failover support - all without proprietary hardware.**
- **Available on ESXi, Microsoft Hyper-V, Oracle VirtualBox and KVM**
- **Up to 10Gbps layer 7 throughput**

	Pro-1G	Pro-2G	Pro-5G	Pro-10G
Licensed Servers	Unlimited	Unlimited	Unlimited	Unlimited
Throughput	1Gbps	2Gbps	5Gbps	10Gbps
SSL TPS (2K Keys)	10,000	10,000	10,000	10,000
HA Support	Yes	Yes	Yes	Yes
Clustering Support	Yes	Yes	Yes	Yes
All Features	Yes	Yes	Yes	Yes

Product Offerings – AppScaler Appliances

- **Super computing platform**
- **ASIC Chip SSL Acceleration Card**
- **High Performance DPDK Optimized Kernel**
- **Up to 40Gbps layer 7 throughput**



Product Offerings – VNF Manager Hardware Appliances

- **VNF Manager allows customers to deploy ADC as Virtual Function through single-pane-of-management platform. VNF Manager makes it possible to seamlessly design feature rich managed load balancing services with agility and capacity on-demand.**

	VNF-Manager-16	VNF-Manager-32	VNF-Manager-64
Maximum Tenant	16	32	64
Throughput	5Gbps	10Gbps	15Gbps
SSL TPS (2K Keys)	4,000	15,000	15,000