

# CONTENT SMART SWITCH

## NEXT GEN DEEP CONTENT INSPECTION SOFTWARE



### FEATURES

Full software platform  
Multi-applications and services  
Telco grade platform  
Multi 1GE or 10GE support  
Fine grained analysis and control  
up to content

### BENEFITS

#### High flexibility

For integration within legacy or  
new environment  
For new services implementation

#### Scalability

Future proof turn-key features  
for easy upgrade path from  
multi-1G to multi-10G solutions

#### Pervasiveness

Excellent price/performance  
ratio and flexibility  
for multi-purpose and  
multi-scenario deployments

#### ROI

Ensure new ROI standards  
for DPI projects, with security,  
scalability, flexibility and  
ease-of-deployment.

### SOLUTIONS FOR

Mobile operators and MNO  
Fixed line operators and ISP  
Cable operators  
Datacenters and hosters

*Vedicis Content Smart Switch is a software multi-application platform to manage and control broadband content within telecom operators networks. It delivers a full set of services to monitor, prioritize and/or neutralize content traffic in real time.*

#### Multimedia Tracking

Unleash the wealth of information from the network.

Internet usage is changing at a rapid pace, and multiple low signals turn out as the emerged part of new massive trends. As time accelerates, real time information is critical to take the right decisions. The multimedia tracker service captures all the broadband traffic and applies various modular and selective criteria either to extract precise usage data in real time or to duplicate part of traffic for further analysis.

#### Broadband bandwidth optimization

Control and steer applications for better Quality of Service.

Traffic knowledge and management is key to ensure QoS. The broadband bandwidth optimization service is dedicated to applications and content steering. It provides fine grained broadband management based on applications (OTTs) and content (files, URLs...).

#### Content Policy & Charging Enforcer

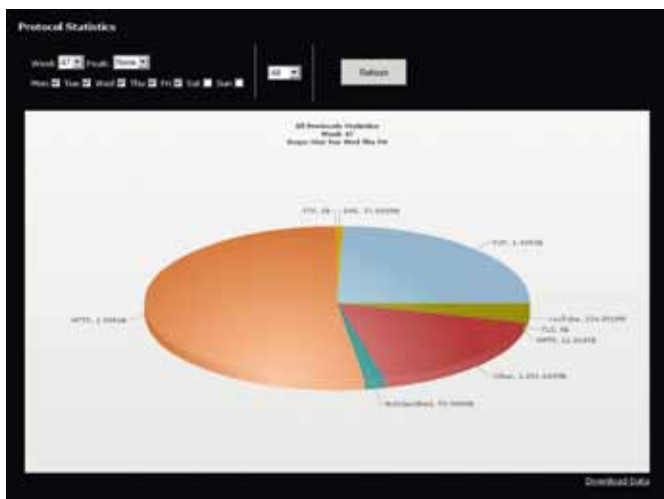
Enforce user policies for personalized new services.

The Content Policy & Charging Enforcer provides real time usage monitoring and user based policies enforcement to deliver real time policy charging enforcement functionalities. It provides content granularity for innovative service plan enforcement.

#### Anti-piracy and regulation

Protect revenue and ensure compliance

Content Circulation Control is key to foster the business growth of legitimate content offers. The anti-piracy and regulation service provides selective content, applications and protocols blocking or tracking.



Screenshot : downloads per Protocol statistics

## Next Gen DPI

VEDICIS Content Smart Switch VP1G and VP10G products are built upon a breakthrough technology of Deep Content Intelligence (DCI) to deliver advanced content analysis and control in real time within Telecom Operators' networks. Its innovative software architecture provides a high level of flexibility for integration or new features deployment while achieving stunning performance for broadband traffic management.

## Software platform

DCI has been developed to create powerful software solutions that are implemented on COTS hardware (Commercial-Off-The-Shelves, i.e. standard servers, either 2U – 4U or Blade systems, based upon Intel Xeon architecture) for deployment on 1 & 10 Gbps optical links. This software engine achieves impressive performances to manage up to 5 Mpps with more than 10 million sessions per CPU. Depending on the workload, multiple Vedicis software modules may be implemented to steer the full content traffic of multiple aggregated 10 Gbps links.

## Content analysis

The DCI technology delivers a better coverage than only packets or protocols inspection. With a complete approach encompassing sessions detection and identification, Vedicis reaches unprecedented level of fine grained analysis and correlation. This powerful engine allows detecting and identifying content whether it is a URL, a movie, music or any type of other content. On various and flexible selective criteria, content may be copied and forwarded to specific applications in the network.

## Content control

Vedicis has designed extensive on-line bandwidth statistics for protocols, applications (APPs) and content. While bringing visibility to the content and application traffic, DCI is used to mark content or applications on the fly with MPLS/VLAN/DSCP for QoS enforcement. Targeted Content and APPs may also be blocked or filtered for better traffic management or regulation purpose. Other control features includes APPs rate-limiting, and quota settings, with potential users bandwidth fairness set-up. The full process in real time induces almost no latency with less than 20  $\mu$ s.

## Flexible deployment

The flexible license packages enable system growth along with the traffic growth and ensure investment protection. Deployment on standard servers deliver superior price performance ratio, and give room for performance growth while avoiding costly proprietary hardware architecture. Server configurations are thoroughly tested and validated by Vedicis team for optimized performance and for taking maximum advantage of the Intel servers' architecture and performance.

## Multi-application support

The Content Smart Switch manage 1 or multiple 1GE (VP1G family) or 10GE (VP10G family) links and can support multiple applications in parallel.



## Multimedia Tracking

The Multimedia Tracker is a key step to utilize smart pipes information and evolve from network statistics to customer focused KPI and actionable real time intelligence. This application includes following features :

- Statistics and KPI with audience measures, trends and user's follow up
- Tickets extraction (CDR, IPDR...) for real time usage tracking to feed 3rd party database and correlation engines
- Smart span for content or APPs extraction with traffic copy on selective criteria (IP addresses, Ports, countries, AS...)

## CARRIER GRADE PLATFORM

Vedicis platform is designed and deployed from the ground up to meet the most demanding telecom operator's requirements with built-in features.

**Security and network resiliency :** Its external optical bypass guarantees the network high availability and meets operational requirements for serviceability. A clustering solution with active – passive configuration is available to ensure service high availability. Vedicis platform supports the redundant architectures that are already in place and based upon VRRP, RSTP and link aggregations.

**Versatility.** The multi-purpose DCI engine supports one or multiple applications with modules that are activated upon request.

**Scalability.** The software architecture has been optimised to grow and scale with performance to manage 1 or 10 Gbps multiple aggregated links. It meets the wire line operators new standards for peering points and backbone/aggregation, and Mobile operators needs at the GGSN level.

**Manageability.** Its centralised management with web GUI or command lines is designed for operation efficiency. Standard APIs are available for rapid and smooth integration within operators' management framework. It is connected to the Customer Administration Network through a dedicated Ethernet connector (10/100/1000 Base T; with Console port type). SNMP counters and system status (CPU, filter%, error, dropped packets, etc.) are available through a documented MIB. They are also available through the administrator graphical interface or CLI.

### Broadband Bandwidth Optimization

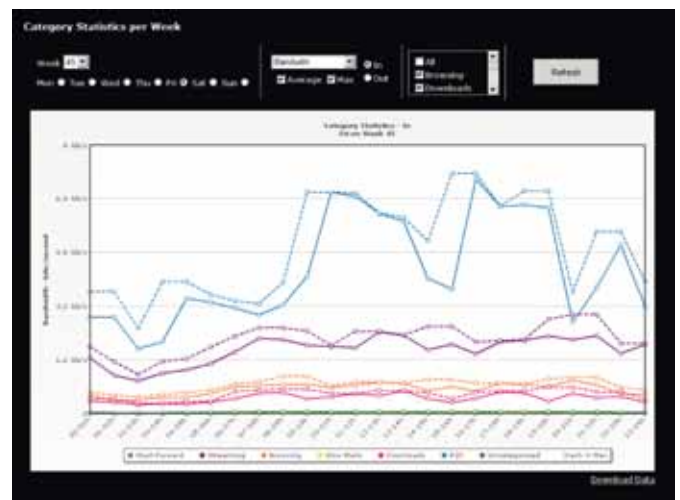
As traffic is booming, Broadband bandwidth Optimization is the solution to control cost and traffic from the peering/transit points , deliver ensured Quality of Experience and new premium services. Following features are available in addition to statistics:

- APPs shaping and rate-limiting
- Subscribers management with user bandwidth fairness and shaping
- APPs prioritization or throttling with QoS marking (MPLS, DSCP, VLAN)

### Content Policy and Charging Enforcement

The Content Policy and Charging Enforcer combines the power of Multimedia Tracking and Broadband Bandwidth Optimization to manage subscribers SLA and enforce charging policies.

- CDR+ extraction
- Subscriber's SLA enforcement
- Integration with AAA and charging solutions (OCS and OFCS for Mobile)
- Integration with policy servers (PCRF)



Screenshot : services bandwidth traffic

### Anti-piracy and regulation

As content circulation control is mandatory for regulation compliance (gambling, homeland security, internet regulation, copyright...), our solution for anti-piracy and regulation provides a powerful and cost effective response to control access to APPs, URLs and content

- URLs blocking (>20 M URLs)
- Copyright protection with content tracking and blocking within Peer-to-Peer, Progressive downloads...
- APPs blocking for compliance (VoIP regulation...)

## SPECIFICATIONS

### Broadband network connection

For VP10G products, 2 or 4 optical board connections

Small connectors Duplex SC, LR/SR

Compatible with:

- 10GBASE-SR short-reach optics (850nm)
- 10GBASE-LR long-reach optics (1310nm)
- IEEE 802.3ae (10GbE)

Available SFP+ optics:

- Short-reach SFP+ optic module
- Long-reach SFP+ optic module
- TAP Twinax passive cable.

For VP1G products, copper or optical connectivity.

### Performances

- Max packets/s: 5 millions per direction, 10 Million packets/s per link
- Max IP throughputs: 20Gbits/s per direction, 40 000 000 sessions (conversations) per link
- Maximal Number of L4 flows: 20 000 000 sessions (conversations) per VP10G product.
- Up to 4x10GE on a 2U server

### Supported Networking Features

- MPLS / GRE / L2TP, Encapsulation
- 802.1q / Q-in-Q, VLAN Tagging
- Content & URL Database
- >20 millions Content References or URLs

### Hardware

- Vedicis has certified a list of IBM or HP standard servers (2U-4U and Blades) with specific configurations for secured and effective integration and deployment

### Applications & Protocols (APPs), and content support

- 500+ supported protocols, covering Network Services, Application Services, Peer-to-Peer, Instant Messaging, Web&Forum, Webmail, Audio&Video and Tunneling families
- Specific service "global bandwidth" management for YouTube and Dailymotion
- Content References detection and identification from Peer-to-Peer protocols (See list below), YouTube, Dailymotion, ftp, http/progressive download, RTSP/RTP

### Main Supported Applications & Protocols (APPs)

| Categories | APPs  |
|------------|---|
| VoIP       | H.323, SIP, Skype, etc.                       |
| IM         | Jabber, MSN, IRC, Yahoo, etc.                 |
| Streaming  | Flash, Quicktime, RTP/RTSP, Windows etc.      |
| Gaming     | WoW, Quake, SecondLife, etc.                  |
| Others     | DNS, HTTP, TFP, TLS, Radius, IMAP, POP3, etc. |

### Supported APPs for content detection

| Categories            | APPs   |
|-----------------------|--|
| P2P encrypted or not  | eDonkey (eMule 0.49b, aMule 2.2.2); Bittorrent (Azureus/Vuze 3.1.1.0, µTorrent 1.8.1) Ares (Ares 2.0.9.3030) |
| P2P compressed or not | Gnutella (Limewire 4.18.3, Shareaza 2.4.0.0)   |
| Live P2P              | TVants; PPLive   |
| Other P2P             | Frostwire; Fasttrack; Soulseek (Soulseek 157 NS 13c); Filetopia (Filetopia 3.04d)                            |
| Others                | HTTP / progressive download(YouTube, DailyMotion...); FTP; RTSP/RTP  |

## ABOUT VEDICIS

Vedicis is a solution provider in IP broadband to value content and create smart pipes with new services for fixed and mobile telecom carriers.

Our core Next Gen DPI is a full software technology enabling new and pervasive application deployments with a proven ROI, and sets new performance standards for advanced analysis, control and management of protocols, applications and content within High Speed Internet.

Vedicis solutions span from Multimedia Tracking, Broadband Bandwidth Optimization to Content Policy and Charging Enforcement, offer new revenue generating applications and help communication service providers to deliver enhanced Internet Quality of Experience.

VEDICIS is headquartered in Paris with an office in New York.

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