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## 1、 Abloommy SD-WAN Profile

SD-WAN is one of the cloud-managed functions of the Abloommy Cloud Service (ACS), a cloud-based management and orchestration platform that makes the network infrastructure of a distributed enterprise cloud manageable and programmable. Based on Abloommy's smart-edge technologies, SD-WAN can be deployed on an Abloommy Edge-Controller device at a branch, DC, or the edge of the cloud. Abloommy's SD-WAN brings simplicity, programmability, and scalability to the WAN infrastructure of a distributed enterprise, makes it fully application-aware, and guarantees the quality and performance of business applications regardless of where they are deployed—HQ, DC, or the public cloud.

## 2、 Features

### Adaptability in a diversified WAN environment

Abloommy's SD-WAN gateway, an Abloommy Edge-Controller with SD-WAN deployed, supports various WAN transport technologies such as MPLS, Broadband, Ethernet and LTE/4G. It also supports Hybrid WAN access modes with multiple concurrent WAN links using these transport technologies. It can be deployed in a branch, DC, or the cloud either as an appliance or a virtual machine.

### Deep visibility and central management

ACS (Abloommy Cloud Service), as a public multi-tenant Cloud Service platform consisting of a group of SD-WAN central controllers (CSP), centrally manages all S-WAN devices and policies, and visualizes the performance of each WAN link by continuously measuring and monitoring its packet loss, jitter, and latency.

### Application-aware delivery with QoS assurance

Abloommy's SD-WAN gateway leverages DPI (deep packet inspection) and real-time performance monitoring of each WAN link to make application-aware, policy-based transport path selections. ACS defines the QoS policies for each application, and the SD-WAN gateway chooses a transport path that best suits the application traffic in real time. With unidirectional packet-based measuring and monitoring of the performance of each WAN link, the transport path selection supports flow-based load balancing, packet-based load balancing, and link aggregation—multiple concurrent links can be

used to deliver a single application, in order to meet QoS requirements.

### Fast deployment with plug-and-play

Abloomy SD-WAN can automatically set up overlay networks between branches and other branches, branches and headquarters, branches and the cloud, and headquarters and the cloud. All SD-WAN devices can communicate with each other automatically based on the policies defined on the ACS. With ZTP (zero touch provisioning) supported, Abloomy SDWAN solution is truly plug-and-play.

### Security

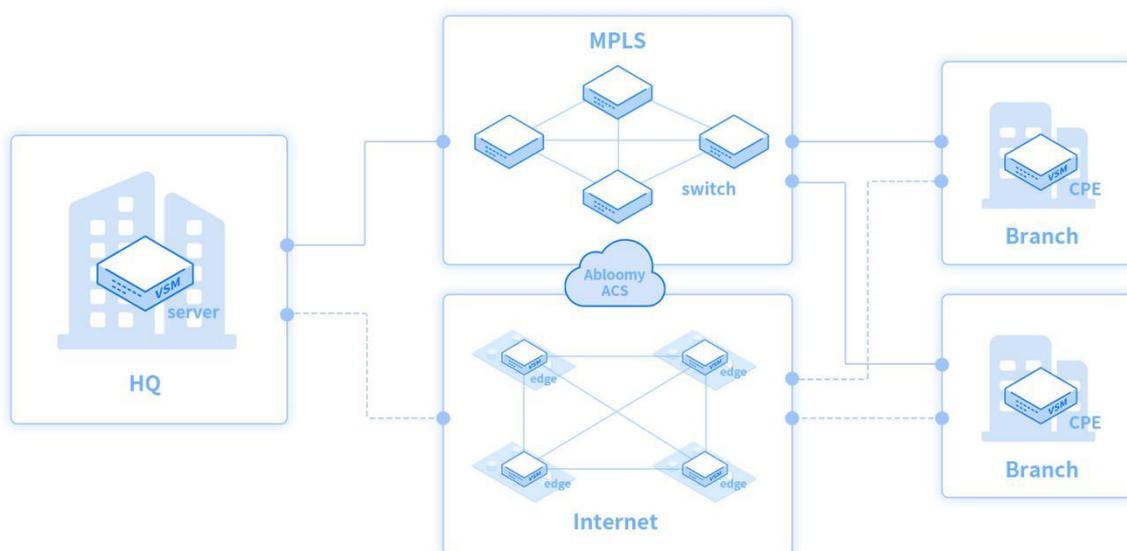
Abloomy' s SDWAN solution uses CA and DTLS/TLS technologies as the foundation for the control plane, and the same encryption scheme as IPSec to protect the data plane. Each SD-WAN gateway supports NG firewall and role-based NAC (network access control).

### Reliability

The control plane of Abloomy' s SD-WAN solution uses a distributed architecture. ACS is composed of a group of SD-WAN central controllers deployed either on-site with the customer or on a public cloud like AWS or Azure. These controllers work as a unified controller pool with N+N redundancy to ensure zero failure time.

## 3、 Typical Applications

Abloomy's SD-WAN solution includes the public Abloomy Cloud Service (ACS), central controllers (CSP) and SD-WAN gateways (VSM). VSM can play three roles: CPE, Edge, Server.



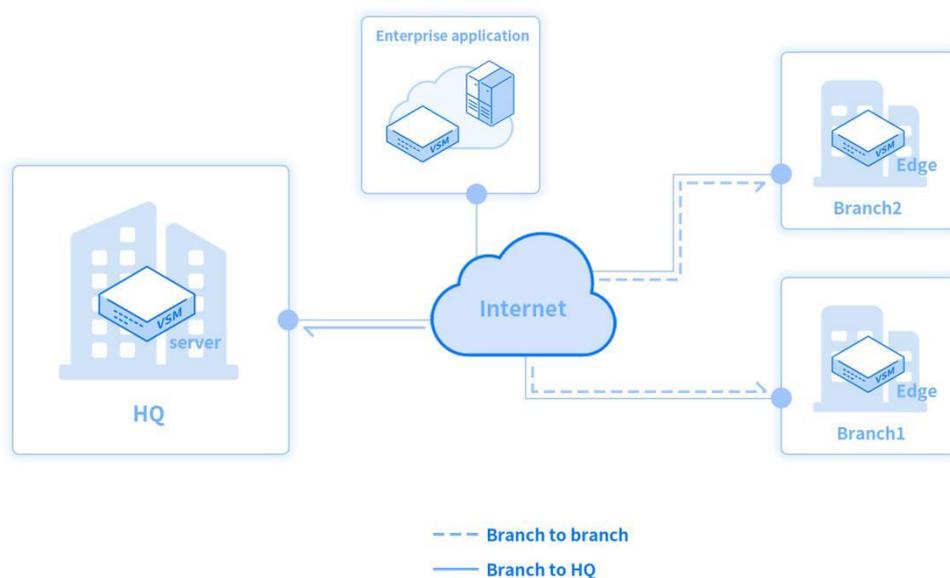
- Abloomy SD-WAN edge can deploy in the cloud
- SD-WAN Server can deploy in IDC or HQ
- CPE,Edge and Server are controlled by ACS

The customer can work with either the public Abloomy Cloud Service (ACS) or a standalone central controller (CSP) to centrally set up SD-WAN networks, define application-specific business policies, and enforce these policies through SD-WAN gateways to achieve the goal of SLA for each business application.

Abloomy's SD-WAN gateway resides at a branch, DC, or the edge of cloud, supports multiple links (MPLS, Internet, LTE, etc.), receives configuration and policies from the ACS or standalone CSP, and conducts data plane functionality.

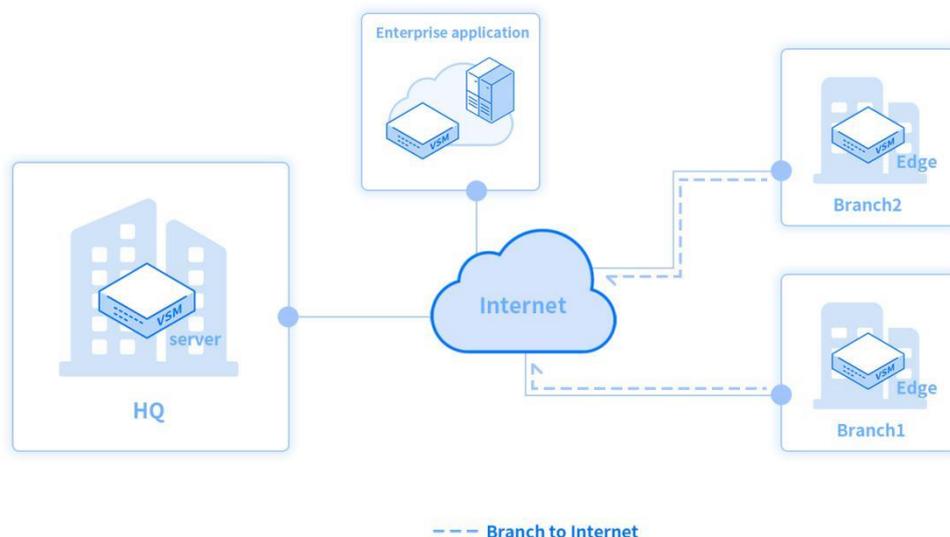
## Two usage scenarios for Abloomy's SD-WAN solution:

### 3.1 Branch to Branch/Headquarters



In this application scenario, SD-WAN is deployed as an appliance at both the branch and headquarters.

### 3.2 Branch/Headquarters to Cloud



In this application scenario, SD-WAN is deployed as a virtual machine at the edge of the cloud.

## 4、 Hardware Specifications

Model	VSM800	VSM810-L	VSM1000	VSM2000
				
<b>Application</b>	Small branch	Small branch	Medium branch	Medium branch
<b>Concurrent users</b>	50-250	50-250	250-500	250-500
<b>Weight</b>	1.5kg	1.5kg	4kg	4kg
<b>Dimensions (W*D*H)</b>	290mm*155mm*44mm	200mm*165mm*44mm	438mm*330mm*45mm	438mm*330mm*45mm
<b>Interfaces</b>	4*10/100/1000 Base-T Ethernet ports 1*console port 2*USB 2.0 ports	4*10/100/1000 Base-T Ethernet ports 1*console port 2*USB 2.0 ports 1*SIM card slot	4*10/100/1000 Base-T Ethernet ports 1*console port 2*USB 2.0 ports	4*10/100/1000 Base-T Ethernet ports 1*console port 2*USB 2.0 ports
<b>CPU</b>	Intel N2807	Intel N2807	Intel N2807	Intel Celeron 2.0GHz
<b>Memory</b>	Default: 2GB, expandable	Default 2GB, expandable	Default 2GB, expandable	Default 2GB, expandable
<b>Hard Disk</b>	Default 16G SSD, expandable	Default 16G SSD, expandable	Default 32G SSD, expandable	Default 32G SSD, expandable
<b>Power Supply</b>	12V DC	12V DC	110-240VAC	110-240VAC
<b>Power Consumption</b>	60W	60W	70W	70W
<b>Humidity</b>	10% ~ 90%, non-condensing	10% ~ 90%, non-condensing	10% ~ 90%, non-condensing	10% ~ 90%, non-condensing
<b>Operating temperature</b>	0°C~40°C (32°F~104°F)	0°C~40°C (32°F~104°F)	0°C~40°C (32°F~104°F)	0°C~40°C (32°F~104°F)
<b>Storage temperature</b>	-20°C~80°C (-68°F~176°F)	-20°C~80°C (-68°F~176°F)	-20°C~80°C (-68°F~176°F)	-20°C~80°C (-68°F~176°F)

Model	VSM3000	VSM5000	VSM7000
			
<b>Application</b>	Medium branch	Medium branch and HQ	HQ and Data Center
<b>Concurrent users</b>	750-1000	1000-2000	2000-4000
<b>Weight</b>	4kg	7.5kg	13.5kg
<b>Dimensions (W*D*H)</b>	440mm*330mm*45mm	440mm*455mm*45mm	424mm*565mm*90mm
<b>Interfaces</b>	6*10/100/1000 Base-T Ethernet ports 1*console port 2*USB 2.0 ports	6*10/100/1000 Base-T Ethernet ports 1*console port 2*USB 2.0 ports	2*10/100/1000Base-T Ethernet ports 2*SFP ports 1*console port 2*USB 2.0 ports
<b>CPU</b>	Intel J1900	Intel i3 3.3GHz	Intel i7 3.6GHz
<b>Memory</b>	Default 2GB, expandable	Default 4GB, expandable	Default 4GB, expandable
<b>Hard Disk</b>	Default 64G SSD, expandable	Default 128G SSD, expandable	Default 256G SSD, expandable
<b>Power Supply</b>	110-240VAC	110-240VAC	110-240VAC
<b>Power Consumption</b>	70W	250W	350W
<b>Humidity</b>	10% ~ 90%, non-condensing	10% ~ 90%, non-condensing	10% ~ 90%, non-condensing
<b>Operating temperature</b>	0°C~40°C (32°F~104°F)	0°C~40°C (32°F~104°F)	0°C~40°C (32°F~104°F)
<b>Storage temperature</b>	-20°C~80°C (-68°F~176°F)	-20°C~80°C (-68°F~176°F)	-20°C~80°C (-68°F~176°F)

## 5、 Software Specifications

Basic functions	ARP, DHCP Server/Client/Relay, PPPOE Client, NAT, VLAN
LAN	IEEE 802.1P, IEEE802.1Q, IEEE802.3, MSTP
IPv4 routing	Policy routing, Static routing, BGP
IPv6 routing	IPv6 ND, IPv6 PMTU, IPv6 FIB, IPv6 ACL
Multicast	IGMP V1/V2/V3, IGMP-Snooping V1/V2/V3
MPLS	LDP, MPLS L3 VPN, Static LSP, Dynamic LSP
WAN Link selection	Dynamic transport path selection based continuous monitoring of latency, jitter and packet loss of each WAN link
Flow-based load balancing	Support sending different applications on different WAN links based their priority and SLA
Packet-based load balancing	Support link aggregation, tunnel binding, data reorganization
Unidirectional measurement	Support unidirectional traffic measurement, continuous measurement on each packet
Application-aware	Support application detection with DPI and selecting transport path or path aggregation and the balancing algorithms based the application' s SLA
VPN	GRE VPN, L2TP VPN, MPLS VPN
QoS	Role-based prioritization and bandwidth control, application-based prioritization and bandwidth control, traffic shaping
LTE	FDD LTE, TDD LTE (Currently only VSM810-L supports)
Security	Role-based NAC, NG firewall, VPN, DDoS attack protection, Black / white list, DTLS/TLS, IPSec, ESP-256-CBC
WiFi AC	AP management, CAPWAP, User management, RF management, QoS, WLAN security(wep/wpa/wpa2)
Authentication	Radius, AD, LDAP MAC address based authentication 802.1X authentication Social media authentication (Facebook, WeChat, etc.) SMS authentication Customer' s APP authentication
Report	Reports of system, interfaces, users, applications, traffic, and quality of WAN links
Management	Support Web, Console, SSH management