

## VSM810-L (Edge Controller)



The VSM is the Edge Controller of Abloomy's Smart-Edge architecture. It can be either an on-premises appliance or deployed on commercial off-the-shelf servers in the data centers of customers or public cloud providers. Under the control of the CSP or ACS, the VSM is the execution node of Abloomy's cloud service. With programmability, the VSM can be orchestrated with cloud-managed functions hosted by the ACS or CSP, based on the policies of the customer's cloud account. It can execute these functions at the edge closest to the customer, in infinitely large-scale distributed deployment scenarios, to guarantee low latency, security, and data privacy—the fundamental requirements for any IoT application. With these cloud-managed functions, the VSM not only provides all the functions of a traditional WiFi controller such as network management and optimization, NAC and other wireless security functions but also provides portal, authentication and WiFi marketing functions. With SD-WAN, firewall, NAT, VPN and routing functionalities, it also functions as a network gateway to construct a performance-assured network infrastructure that connects employees, branches, HQ, DCs, and the cloud, all while ensuring high security, deep visibility, and 100% centralized programmability. The VSM is plug-and-play and makes the network seamlessly scalable. Once configured, the VSM can work independently even after losing connection with the ACS and CSP, and has N+N redundancy, creating an extremely reliable shared computing resource pool.

### Features

#### Plug-and-Play

Both Abloomy APs and VSMs support zero-touch provisioning. When an AP or VSM registers in the cloud platform, the platform will push predefined configurations to the device, avoiding on-site work.

#### Scalable Network Architecture

Abloomy adapts a distributed WiFi network architecture based on our Smart-Edge technology, creating a flexible, modularized management system for both network functions and applications. The distributed VSM layer can be scaled seamlessly and automatically creates N+N redundancy backups.

#### RF Channel Optimization

Interference in WLAN radio affects AP's normal operation. The ABLOOMY platform optimizes AP's radio allocation through adaptive channel selection, avoiding interference from neighboring APs.

#### Seamless Roaming

The Abloomy centralized architecture easily allows roaming. The CSP series controller supports roaming across subnets without re-authentication.

#### Multiple Authentication Methods

Multiple authentication methods are included, such as SMS, WeChat, 802.1X, username and password, non-authentication, automatic authentication and more. After the first SMS/WeChat authentication, subsequent access does not require authentication, which not only improves the user experience, but also saves on SMS expenses.

#### URL Access Control

The VSM can capture and filter browsed URL information based on firewall policies from the CSP.

#### Role Based Access Control

Role based access control is the main advantage of ABLOOMY products. The platform can define different levels of access roles and authorize differentiated services for the users.

#### Flexible Data Forwarding

Based on the policies, the data forwarding can be done either locally by AP locally or centrally by VSM.

#### Ads and Content Operation

Abundant portal templates are available for customers to customize their ad page. The customer can use single page or multi-page portals to present more information.

By caching content locally, customers can save bandwidth by embedding content URL links in the portal page and enabling their Wi-Fi users to locally access videos, articles, and apps, creating a much better user experience. Meanwhile, the backend system will record statistics on viewed and downloaded content to better understand user preferences and fine-tune marketing strategies.

#### Social Media Operation

Social media integration improves the interactions and relationships between businesses and customers, building up long-term marketing strategies.

## Hardware Specifications

VSM	VSM810-L
<b>Interfaces</b>	4*10/100/1000 Base-T Ethernet ports 1*console port 2*USB 2.0 ports 1*Full-size Mini PCIe with SIM holder for 3G/4G LTE(WWAN) module with 2 x external antenna holes 1* Mini SIM type
<b>Weight</b>	2.5kg
<b>Dimension (L*W*D)</b>	200mm*165mm*44mm desktop
<b>AP Limits</b>	64
<b>Disk</b>	16G SSD
<b>Power Supply</b>	12V DC
<b>Consumption</b>	36W
<b>Operating temperature</b>	0 °C~40 °C (32 °F~104 °F)
<b>Storage temperature</b>	-20 °C~80 °C (-68 °F~176 °F)
<b>Humidity</b>	10% ~ 90%, non-condensing

## Software Specification

AC Discovery	Broadcast discovery
	DHCP option 43 discovery
	DNS discovery
	Configure manually
RF	Support AP and probe mode
	Support manual / automatic channel selection
	Configure RF TX/RX manually
	Configure channel size 20M/40M/80M manually
	Support manual /auto TX power configuration
Data Forwarding Mode	Central forwarding mode
	Distributed NAT forwarding mode
	Local transparent forwarding mode
	Support each SSID with Local forwarding VLAN
	Concurrent local and central forwarding mode
Roaming	L2 roaming between APs
Network Protocol	Policy routing
	ARP
	802.1P/Q
	DHCP Server
	IGMP Snooping
	DHCP Relay
	DHCP Relay to multiple servers
Encryption	Open system
	Pre-share PSK
	WEP
	WPA2 Encryption
	TKIP
Authentication	Radius
	LDAP

	Built-in role-based access control
	User's MAC address based authentication
	802.1X authentication
	Social media authentication (Facebook, Google+, etc.)
	SMS authentication
	Authentication API
	UMS (Authentication & Accounting & Authorization)
	Support multiple authentications concurrently
Security	Hidden SSID, Rogue AP detection
	User isolation and Network isolation
	URL capture
	Black / white list
Access Management	MAC and IP address binding
	Automatically disconnect idle traffic user
	Role-based access control
	Time-based access control
	Location-based access control
	Combine Role/Time/Location based access control
Load Balance	Load balance based on user
	Load balance based on traffic
Firewall	Stateful Firewall
NAT	SNAT
	DNAT
	DPAT
	Service types can be configurable
Ads Module	Multiple built-in Portal templates
Logs and Alerts	Local logs, external log server
	Device state alerts, email alerts
System Management	WEB, SSH, Console