



# Huawei Agile Controller-Campus Datasheet

## Product Overview

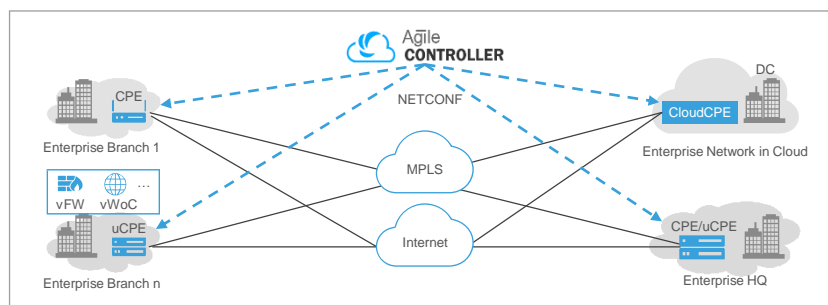
The Agile Controller-Campus is a next-generation campus and branch network controller developed by Huawei. The Agile Controller-Campus uses new technologies such as cloud computing, SD-WAN, and VXLAN to implement network virtualization, policy centralization, and cloud-based management. The Agile Controller-Campus provides enterprises with fast managed LAN and cloud-based leased line services, reduces OPEX, and accelerates migration of services to the cloud and digital transformation.

Huawei Agile Controller-Campus is the core component of Huawei SD-WAN solution. This document describes the functions of the Agile Controller-Campus in the SD-WAN solution.

## Solution Description

As enterprises undergo ICT transformation, a large number of enterprise services are being migrated to the cloud. Traditional enterprise leased line solutions hardly can meet enterprise service requirements in the cloud era. First of all, leased lines are expensive. According to the Telecom market research and survey of consulting corporations, the cost of MPLS leased lines is several times or dozens of times that of the Internet, consuming a large amount of enterprise funds. In addition, it takes a long time (an average of 30 working days) to provision services, preventing enterprise customers from quickly obtaining services. Finally, maintaining enterprise leased lines is costly. Traditional leased line devices require maintenance to be carried out onsite. For enterprises with multiple branches, it is difficult to maintain the branch networks and maintenance costs are high.

To meet the requirements of service cloudification and industry digitalization, enterprise leased lines require higher bandwidth, simplified O&M, and quick responses to service changes. Huawei's innovative SD-WAN solution helps enterprises build application-aware, cost-effective, easy-to-maintain, and on-demand cloud-based enterprise leased lines, and reshapes the online experience of service provisioning, O&M, adjustment, and optimization. This solution facilitates the rapid innovation of enterprise services in the cloud era and helps enterprises achieve business success.



Architecture of Huawei SD-WAN solution

### About This Publication

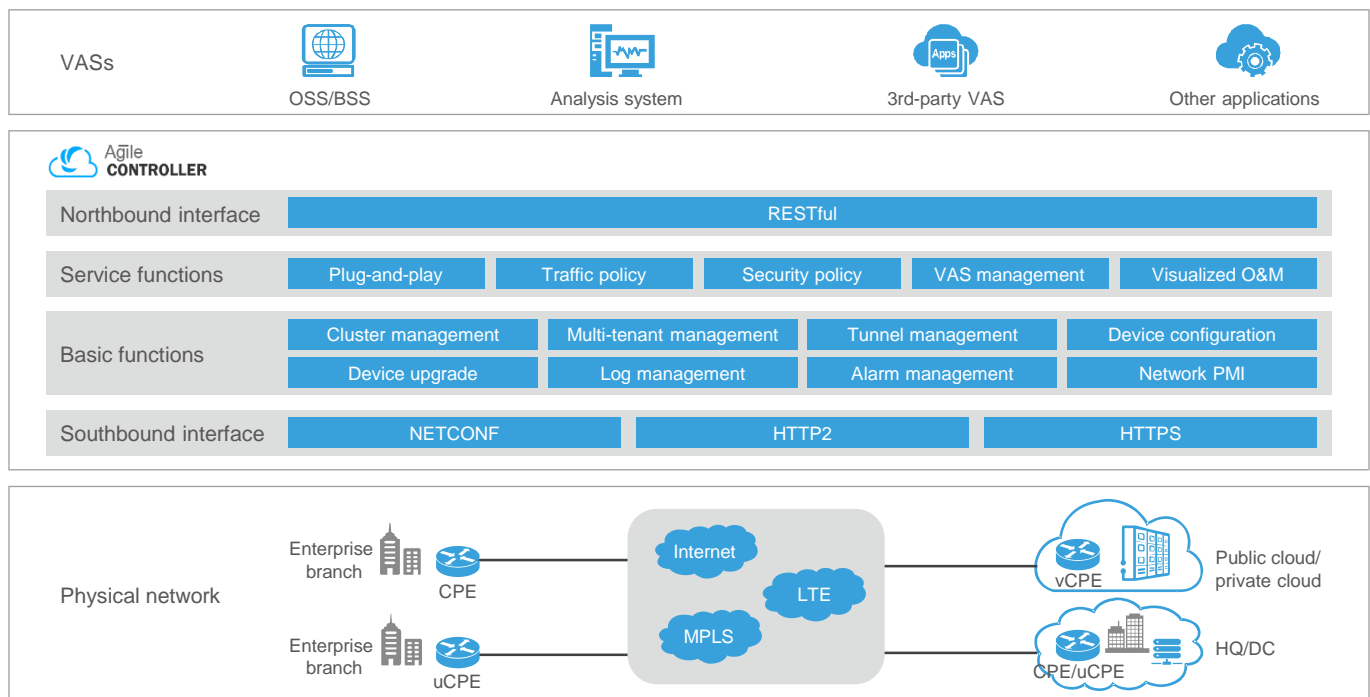
This publication is for reference only and does not constitute any commitments or guarantees. All trademarks, pictures, logos, and brands mentioned in this document are the property of Huawei Technologies Co., Ltd. or a third party. Copyright © 2018 Huawei Technologies Co., Ltd. All rights reserved.

Huawei SD-WAN solution aims to solve problems caused by traditional enterprise leased lines. It allows enterprises to quickly provision new services, reduce investment and O&M costs, and quickly respond to service demands and changes in the cloud era. This solution strengthens enterprise competitiveness and leads the entire business ecosystem. Huawei SD-WAN solution offers the following benefits:

- Flexible link binding, reducing bandwidth costs
- Service provisioning time shortened from months to days
- Application-aware intelligent path selection, improving user experience
- Plug-and-play, visualized O&M, reducing OPEX

## Key Components

Huawei Agile Controller-Campus is the core component of Huawei SD-WAN solution. It manages enterprise interconnection services throughout the entire process, and provides a wide range of unmatched functions and capabilities, such as automated deployment of leased line services, configuration of intelligent path selection policies, VAS management, plug-and-play, and visualized O&M. The Agile Controller-Campus provides northbound RESTful interfaces for easy interconnection with third-party systems, and communicates with devices through southbound NETCONF, HTTP2.0, and HTTPS interfaces to implement device management and control.



### About This Publication

This publication is for reference only and does not constitute any commitments or guarantees. All trademarks, pictures, logos, and brands mentioned in this document are the property of Huawei Technologies Co., Ltd. or a third party.  
Copyright © 2018 Huawei Technologies Co., Ltd. All rights reserved.

## Benefits

### **Fast deployment, accelerating SD-WAN service provisioning**

The Agile Controller-Campus can automatically deploy end-to-end network services and supports plug-and-play for all series of CPEs, so that devices can quickly go online. The Agile Controller-Campus supports quick configuration and automatic deployment of leased line tunnels, shortening the leased line service provisioning period from months to days, making service provisioning more convenient, and meeting enterprise requirements for rapid network service expansion.

### **Intelligent path selection, improving user experience**

The Agile Controller-Campus supports configuration of application-based intelligent path selection, including the configuration of predefined application identification and user-defined application identification. The Agile Controller-Campus implements differentiated network services based on different user requirements on application quality to preferentially ensure the quality of services for key applications.

### **On-demand VAS, accelerating service provisioning**

The Agile Controller-Campus supports uCPE management. The uCPE uses the x86/ARM universal hardware platform to carry virtualization services, and runs VNFs to provide functions such as firewall and WOC. The Agile Controller-Campus can manage VNFs on the uCPE throughout the lifecycle. Enterprise customers can quickly load VASs. In addition, the Agile Controller-Campus supports service chain orchestration, ensuring that service traffic passes through multiple VNF nodes in sequence, meeting enterprises' various service requirements.

### **Visualized O&M and visualized application traffic across the entire network**

The Agile Controller-Campus supports visualized management of applications and links. The Agile Controller-Campus can visualize the status of the entire network and display the network status in real time, improving O&M efficiency. The Agile Controller-Campus monitors and collects statistics on the actual service flow, and presents the quality, status, and trend of applications and links, implementing quick troubleshooting and accurate fault backtracking.

---

#### **About This Publication**

This publication is for reference only and does not constitute any commitments or guarantees. All trademarks, pictures, logos, and brands mentioned in this document are the property of Huawei Technologies Co., Ltd. or a third party.  
Copyright © 2018 Huawei Technologies Co., Ltd. All rights reserved.

## Key Features

| Key Feature                | Value  |
|----------------------------|--|
| Plug-and-play              | <p>In the SD-WAN scenario, an enterprise needs to deploy CPEs at the sites. After being powered on, the CPEs automatically obtain IP addresses and proactively register with the Agile Controller-Campus to complete configurations and go online. The plug-and-play feature requires no manual configuration, saving much time and reducing misconfigurations. Plug-and-play can be implemented using the following methods:</p> <ul style="list-style-type: none"> <li>• URL in the email</li> </ul>   |
| Tunnel management          | <p>As the number of enterprise branches increases, inter-branch access traffic also increases. Traditionally, inter-branch access traffic needs to be transmitted via the enterprise headquarters, consuming resources of the headquarters and causing delay. The Agile Controller-Campus supports automatic deployment of dynamic smart VPN (DSVPN), implementing dynamic establishment of tunnels between branches. The Agile Controller-Campus supports IPsec encryption, ensuring security of enterprise services. To implement tunnel management, the Agile Controller-Campus supports the following functions:</p> <ul style="list-style-type: none"> <li>• DSVPN tunnel</li> <li>• Full-mesh and Hub-Spoke networking</li> <li>• IPsec encryption</li> </ul>  |
| Intelligent path selection | <p>Huawei SD-WAN solution provides hybrid link access capabilities. To ensure experience of services for key enterprise applications, the Agile Controller-Campus supports application- and application quality-based intelligent path selection. This ensures that services requiring high link quality use leased lines, and other services use Internet links. When a network fault occurs or the link quality is unstable, a link switchover can be flexibly performed to improve user experience. To implement intelligent path selection, the Agile Controller-Campus supports the following functions:</p> <ul style="list-style-type: none"> <li>• Identification of predefined applications and user-defined applications</li> <li>• IP FPM-based link quality detection (including latency, jitter, and packet loss)</li> <li>• Path selection policy management of applications</li> </ul>  |
| On-demand VAS              | <p>In traditional mode, VASs for enterprise sites are provided by different pieces of hardware. The disadvantages lie in fixed hardware functions and complex service deployment and provisioning. To implement fast, on-demand VAS deployment, Huawei launches the uCPE based on the x86/ARM architecture. The uCPE can carry virtualized VASs. The Agile Controller-Campus can manage and control VNFs on the uCPE, including:</p> <ul style="list-style-type: none"> <li>• Full-lifecycle management of VNFs on the uCPE, including installing, pausing, stopping, restarting and deleting VNFs</li> <li>• Service chain orchestration of VNFs on the uCPE</li> <li>• Monitoring of VNFs on the uCPE (including query of information such as the VNF management IP address, CPU, RAM, and running/operating status)</li> <li>• Support for multiple types of VNFs (such as Huawei vFW/vAR, Riverbed vWOC, Fortinet FortiGate, and Checkpoint vSec)</li> </ul>   |
| Application visualization  | <p>The Agile Controller-Campus supports application-based visualized management. Users can quickly locate faults using the Agile Controller-Campus, simplifying O&amp;M. To implement application visualization, the Agile Controller-Campus can display:</p> <ul style="list-style-type: none"> <li>• Health score distribution, worst 5 sites by health score, site list and other information of network-wide sites</li> <li>• Average AQM, bandwidth usage, throughput trend, Worst 5 Applications by AQM, and other information of a specified site</li> <li>• Worst 5 links by LQM, top 5 links by traffic, link list and other information of network-wide links</li> <li>• LQM trend, throughput trend, application top traffic, application AQM distribution, and other information of a specified link</li> <li>• AQM distribution, worst 5 applications by AQM, top 5 application traffic, application list and other information of network-wide applications.</li> <li>• AQM trend, throughput trend, and other information of a specified application</li> </ul> |

### About This Publication

This publication is for reference only and does not constitute any commitments or guarantees. All trademarks, pictures, logos, and brands mentioned in this document are the property of Huawei Technologies Co., Ltd. or a third party.  
Copyright © 2018 Huawei Technologies Co., Ltd. All rights reserved.

## Ordering Information

### Agile Controller software license

| Item              | License   | Quantity |
|-------------------|---|----------|
| Platform          | SD-WAN Platform Software                                  | 1-2      |
| Device management | Device Management License For AR160, Per Device           | 1-N      |
|                   | Device Management License For AR1X00, Per Device          | 1-N      |
|                   | Device Management License For AR2X00, Per Device          | 1-N      |
|                   | Device Management License For AR3X00, Per Device          | 1-N      |
|                   | Device Management License For AR651W-X4, Per Device       | 1-N      |
|                   | Device Management License For AR651-X8, Per Device        | 1-N      |
|                   | Device Management License For AR1610-X6, Per Device       | 1-N      |
|                   | Device Management License For AR1000V, Per Device         | 1-N      |
| SD-WAN function   | SD-WAN Service License For AR160, Per Device              | 1-N      |
|                   | SD-WAN Service License For AR1X00, Per Device             | 1-N      |
|                   | SD-WAN Service License For AR2X00, Per Device             | 1-N      |
|                   | SD-WAN Service License For AR3X00, Per Device             | 1-N      |
|                   | SD-WAN Service License For AR651W-X4, Per Device          | 1-N      |
|                   | SD-WAN Service License For AR651-X8, Per Device           | 1-N      |
|                   | SD-WAN Service License For AR1610-X6, Per Device          | 1-N      |
|                   | SD-WAN Service License For AR1000V, Per Device            | 1-N      |
| VAS management    | Virtual Application Management License For uCPE, Per vCPU | 1-N      |

#### About This Publication

This publication is for reference only and does not constitute any commitments or guarantees. All trademarks, pictures, logos, and brands mentioned in this document are the property of Huawei Technologies Co., Ltd. or a third party.  
Copyright © 2018 Huawei Technologies Co., Ltd. All rights reserved.

## Agile Controller Subscription And Support License

| Item                  | SnS License   | Quantity |
|-----------------------|---|----------|
| Platform SnS          | Subscription And Support, 1/2/3 Year, SD-WAN Platform Software                                  | 1-N      |
| Device management SnS | Subscription And Support, 1/2/3 Year, Device Management License For AR160 or AR6X0, Per Device  | 1-N      |
|                       | Subscription And Support, 1/2/3 Year, Device Management License For AR1X00, Per Device          | 1-N      |
|                       | Subscription And Support, 1/2/3 Year, Device Management License For AR2X00, Per Device          | 1-N      |
|                       | Subscription And Support, 1/2/3 Year, Device Management License For AR3X00, Per Device          | 1-N      |
|                       | Subscription And Support, 1/2/3 Year, Device Management License For AR651W-X4, Per Device       | 1-N      |
|                       | Subscription And Support, 1/2/3 Year, Device Management License For AR651-X8, Per Device        | 1-N      |
|                       | Subscription And Support, 1/2/3 Year, Device Management License For AR1610-X6, Per Device       | 1-N      |
|                       | Subscription And Support, 1/2/3 Year, Device Management License For AR1000V, Per Device         | 1-N      |
| SD-WAN function SnS   | Subscription And Support, 1/2/3 Year, SD-WAN Service License For AR160, Per Device              | 1-N      |
|                       | Subscription And Support, 1/2/3 Year, SD-WAN Service License For AR1X00, Per Device             | 1-N      |
|                       | Subscription And Support, 1/2/3 Year, SD-WAN Service License For AR2X00, Per Device             | 1-N      |
|                       | Subscription And Support, 1/2/3 Year, SD-WAN Service License For AR3X00, Per Device             | 1-N      |
|                       | Subscription And Support, 1/2/3 Year, SD-WAN Service License For AR651W-X4, Per Device          | 1-N      |
|                       | Subscription And Support, 1/2/3 Year, SD-WAN Service License For AR651-X8, Per Device           | 1-N      |
|                       | Subscription And Support, 1/2/3 Year, SD-WAN Service License For AR1610-X6, Per Device          | 1-N      |
|                       | Subscription And Support, 1/2/3 Year, SD-WAN Service License For AR1000V, Per Device            | 1-N      |
| VAS management SnS    | Subscription And Support, 1/2/3 Year, Virtual Application Management License For uCPE, Per vCPU | 1-N      |

## More Information

For more information about the Huawei Agile Controller-Campus, visit <http://e.huawei.com>.

### About This Publication

This publication is for reference only and does not constitute any commitments or guarantees. All trademarks, pictures, logos, and brands mentioned in this document are the property of Huawei Technologies Co., Ltd. or a third party.  
Copyright © 2018 Huawei Technologies Co., Ltd. All rights reserved.