



H3C Application-Driven WAN Solution

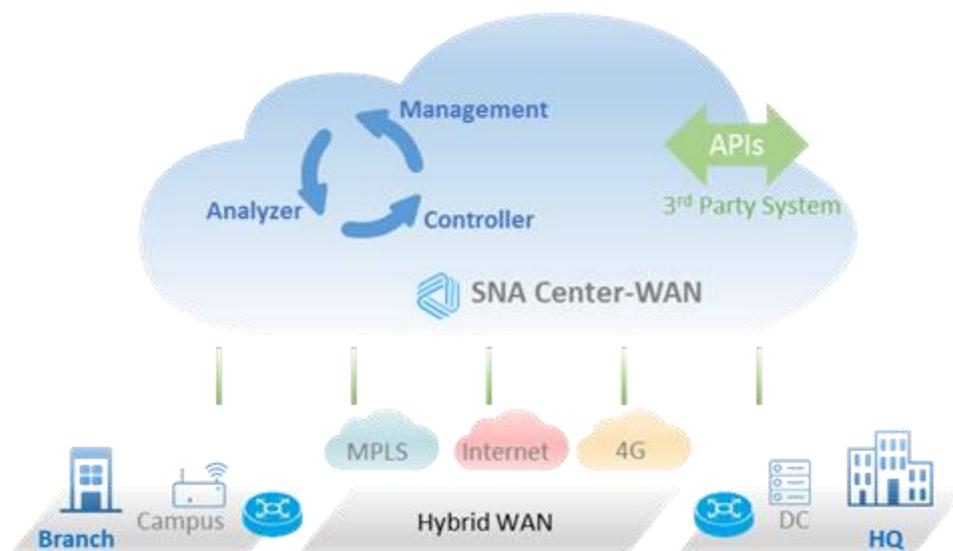
Release Date: July, 2020



New H3C Technologies Co., Limited

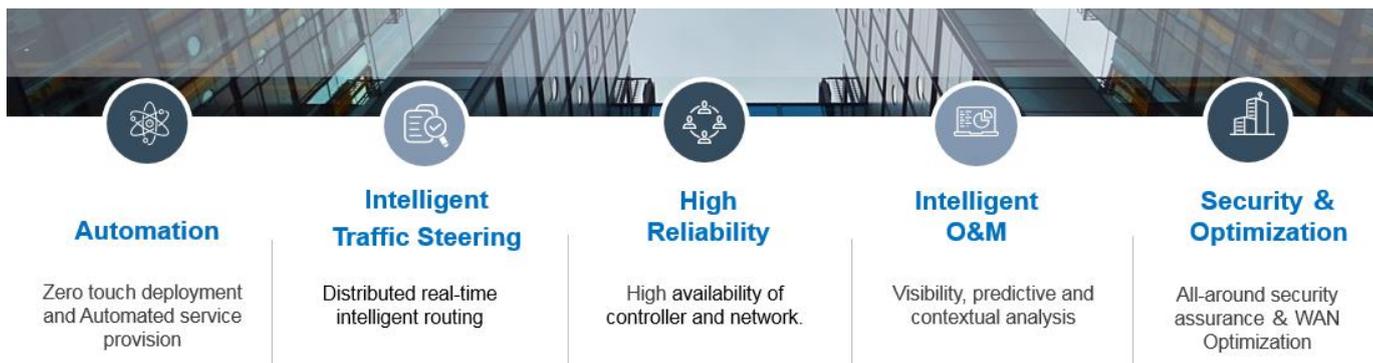
Solution Overview

- The WAN network is primarily responsible for connectivity between different network sites, such as headquarters and branches, branch and branch, DC and DC, etc., and most of that is "passive" and bearing the application flow, but with the development of the application mode, such as cloud computing, mobile and applications, the flow method has changed. The network primarily needs to remain "active" to adapt to changes in application modes, to provide varied services for different applications. However, the current network management is primarily for devices rather than businesses and that makes the network architecture so complex, difficult to extend, unable to adapt to WAN network development.
- AD-WAN (Application Driven - Wide Area Network) is a standard SDN network architecture. It is a hierarchical, open and flexible architecture, with the characteristics of intelligent traffic steering, business visualization, high reliability etc. Reduce network cost and O&M difficulty for customers.



H3C AD-WAN Architecture

Features and Benefit



Automation

Zero Touch Provision (ZTP)

The AD-WAN solution provides multiple automated deployment methods, which provide unified deployment and O&M for automatically deployment devices, reducing the difficulty of O&M and manpower cost. The currently supported zero-configuration deployment includes the following methods:

➤ **USB Driver:**

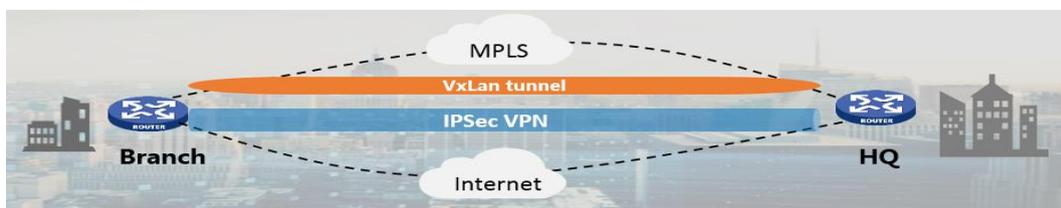
Branch device automatically reads the configuration information in USB driver after powered on, and registers with the controller.

➤ **URL :**

The administrator enters the branch site location and device information on the controller in advance, and send the URL link to branch site with email. The branch device is configured according to the configuration parameters in the URL and establishes a connection with the controller.

VPN Fast Deployment

Compared with traditional manual VPN deployment, AD-WAN supports graphical VPN service deployment. Users only need to select the start and end points of the tunnel to automatically build the VxLAN tunnel.



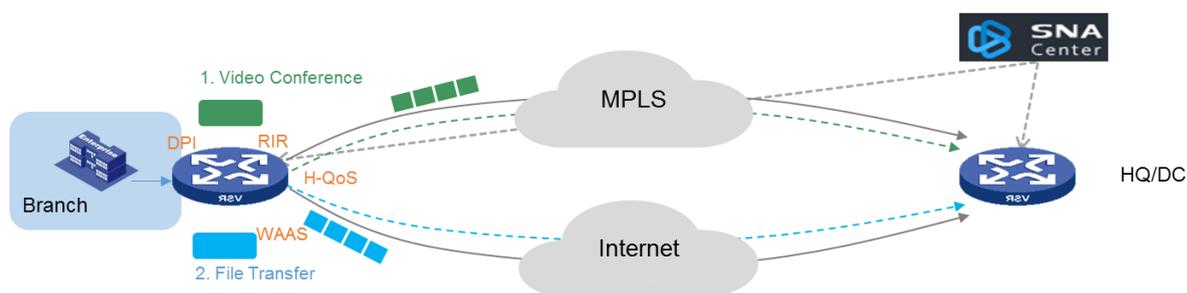
WAN-LAN Convergence

AD-WAN solution supports automatic LAN deployment. For LAN side network, if a branch needs to separate different departments according to VLAN, such as finance, R & D, and marketing department. AD-WAN supports automatic DHCP pool configuration and routing configuration.

Easy QoS

AD-WAN provides one-click deployment of QoS, to meet the differential application requirement. Cooperate with the intelligent traffic scheduling function to ensure the quality of high-priority business and improve user experience

Intelligent Traffic Steering



AD-WAN solution provides multiple steering strategies :

- Link Priority: Determine the priority based on the link type. Set link priority policy for different applications, and select the link with high priority first. When the preferred link fails, select the secondary link.
- Link Quality: Determine the priority by the link quality. Define the link quality requirements of the application in advance and select the required link for the application. If no link can meet the requirements, the device will choose the link, which is closest to the requirements.
- Bandwidth: Define the bandwidth requirement of applications in advance and allocate links based on application demand for bandwidth to improve bandwidth utilization.
- Time Period: Different strategies can be implemented according to time period to ensure key business.

High Reliability

- AD-WAN solution provides high reliability, including control plane reliability, end-to-end reliability and link reliability. Reduce the risk and reduce unnecessary loss for customers.
- Control Plane Reliability: SNA Center cluster deployment, three nodes backup.
- Multi-HQ Backup: Support multi-HQ.
- CPE Redundant: H3C CPE device supports IRF, OSPF and VRRP.

- Transport Network Reliability: Dual/Multi outbound to connect to different network.

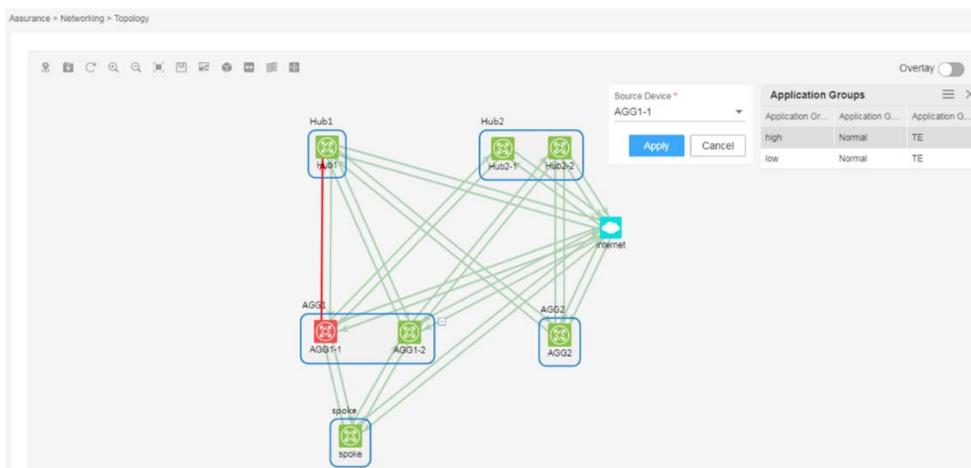
Intelligent Operation & Maintenance

Using the SeerAnalyzer combined with Telemetry technology to achieve rapid network status perception, second-level operation and maintenance. Collect network-wide information (including network equipment, traffic, quality, associated events, and alarm information, etc.), mining the most critical value elements in the network, assist users in IT decisions, and assist operations and maintenance. AD-WAN solution provides a customized dashboard with different modules to display different information.



Visualization

- **Data Traffic Visualization**
Directly show business bandwidth, traffic information, health and other information, allowing users to control the overall health of the business in real time.
- **Devices Resource Monitoring**
Network topology management: The solution provides topological views in different dimensions to facilitate administrators to view network topology information.



Intelligent Analysis and Prediction

- **Network Health Evaluation**
Network health evaluation based on device: Through telemetry technology, collect the operation status of device, and evaluate the current network operation status and health.
- **Troubleshooting**
Based on SNA, AD-WAN can fast locate faults in the network. The SeerAnalyzer collects alarm time, device configuration, representation data, log information and other data in real time. When there is a fault, the SeerAnalyzer can fast locate the fault and analyze the cause.

Service Security

H3C values customer information security and provides strong security protection capabilities in AD-WAN solution, including built-in security, enhanced security and link security.

- **Built-in Security:** H3C CPE device integrates security features, including firewall, IPSec, URL filtering, etc. Customers do not need to purchase additional security products.
- **Enhanced Security:** AD-WAN solution provides enhanced security service chain, H3C uCPE supports VNF, and allow users deploy vFW, etc.
- **Link Security:** AD-WAN solution builds IPSec tunnels to secure the Internet links.

WAN Optimization

WAN optimization can improve network efficiency. H3C device provides built-in WAN optimization function, saving customers investment.

WAAS (Wide Area Application Services):

- **TFO (Transport Flow Optimization):** TFO optimizes the TCP three-way handshake and is highly adaptable.
- **DRE (Data Redundancy Elimination):** DRE techniques can achieve 15-60% bandwidth savings when deployed at access links of the service providers, up to almost 50%

bandwidth savings in Wi-Fi networks and as much as 60% mobile data volume reduction in cellular networks.

- LZ (Lempel-Ziv compression): LZ compression is especially effective for large text files, it can increase the transmission bandwidth by more than 3 times.
- UDP Compression: UDP compression is suitable for log files compression.

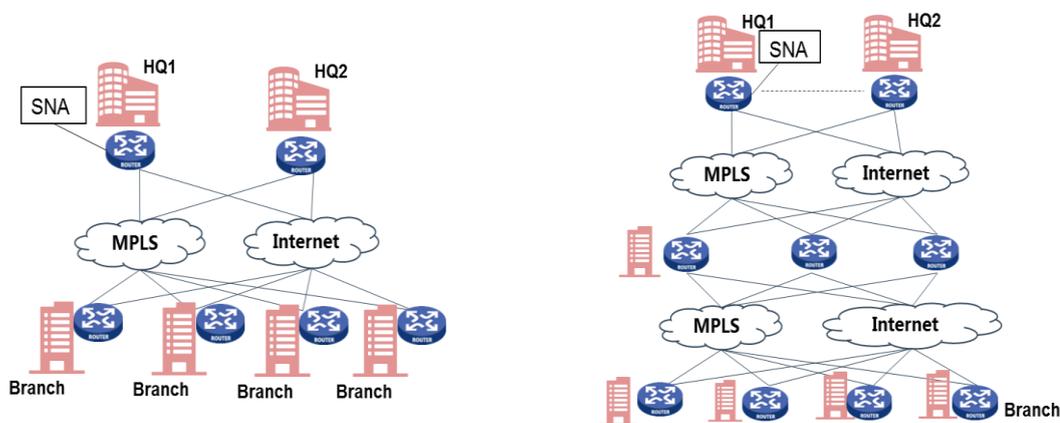
Web Cache:

Web cache can increase the download speed of the application four times and double the efficiency of web page access.

AD-WAN Solution Scenario

AD-WAN supports large-scale flexible networking, suitable for mixed access of leased lines and Internet links, with a large number of branches and scattered locations.

- Two-tier networking architecture: Suitable for headquarter-branch scenarios, mostly vertical traffic.
- Three-tier networking architecture: Suitable for industries with multi structure, such as banks, energy and large enterprises.
- Multi headquarters: AD-WAN solution supports multi headquarters scenarios.



Solution Values

AD-WAN solution is an advanced WAN solution based on SNA architecture, provides high capacity and high reliability. Following are four reasons why AD-WAN is the right fit for customers:

- **Reduce Cost:** AD-WAN supports hybrid networking, including MPLS, MSTP, Internet, 4G and 5G. Replacing leased lines with Internet links and using intelligent traffic steering, greatly reducing line costs. Meanwhile, load different application traffic on multiple lines to improve link

utilization, which can up to 90%. Besides, AD-WAN supports load balance improve bandwidth utilization and reduce bandwidth cost.

- **Increase the Efficiency:** AD-WAN solution provides automated service provision, including zero touch deployment, automated VPN deployment and automated QoS deployment. It greatly reduces the labor cost and the difficulty of business deployment, making it possible for the business fast online.
- **Improve User Experience:** AD-WAN solution supports five-tuple and DPI to identify applications, helps users better manage business. AD-WAN provides WAN optimization, helps improve network use experience and network quality.
- **Intelligent O&M:** AD-WAN solution adopts powerful SeerAnalyzer, provides multi-dimensional visualization, fast faults location and intelligent analysis and prediction, and helps customers better manage the whole network.

Products

AD-WAN solution is compatible with the full range of SR66 and MSR series routers.



- **Headquarter Device:** It is recommended to deploy the SR66 series in headquarters according to traffic and performance requirements. In small scenarios, MSR56 is also suitable for HQs, it should analysis case by case.
- **Branch Device:** It is recommended to deploy the MSR series in branches.

In addition to common CPE devices, we also support uCPE with x86 architecture, supports VNF and security service chain.

Ordering Information

Product ID	Description
LIS-SNACenter-Basic	H3C SNA Center Basic License
LIS-SNACenter-WAN-VAR	H3C SNA Center Software Feature License, 1 WAN Controller Cluster



Product ID	Description
LIS-SNACenter-SeerAnalyzer-VAR	H3C SNA Center Software Feature License, 1 Seer Analyzer
LIS-ADWAN-MIX	H3C ADWAN APP MIX License, Software
SWAN-LIS-3	H3C ADWAN Controller, 3-Controller Cluster License for Branch Network Scenario
LIS-ADWAN-BR-VAR	H3C ADWAN Controller, 1-Node Management License for Branch Network Scenario
LIS-SeerAnalyzer-WAN-APP	H3C SeerAnalyzer Software WAN Edition Activation License
LIS-SeerAnalyzer-WAN-Analyzer	H3C SeerAnalyzer Software WAN Edition 1-Analyzer License
LIS-SeerAnalyzer-WAN-NTA-VAR	H3C SeerAnalyzer Software WAN Edition Network Traffic Analyzer License for 1 Device



The Leader in Digital Solutions

New H3C Technologies Co., Limited

Beijing Headquarters
 Tower 1, LSH Center, 8 Guangshun South Street, Chaoyang District, Beijing, China
 Zip: 100102
 Hangzhou Headquarters
 No.466 Changhe Road, Binjiang District, Hangzhou, Zhejiang, China
 Zip: 310052
 Tel: +86-571-86760000

Copyright ©2020 New H3C Technologies Co., Limited Reserves all rights

Disclaimer: Though H3C strives to provide accurate information in this document, we cannot guarantee that details do not contain any technical error or printing error. Therefore, H3C cannot accept responsibility for any inaccuracy in this document. H3C reserves the right for the modification of the contents herein without prior notification

<http://www.h3c.com>