

ACCENTURE  
SOFTWARE  
DEFINED KIT (SDK)  
**FOR SOFTWARE  
DEFINED WIDE  
AREA NETWORK  
(SD-WAN) SERVICES**



## SOFTWARE DEFINED WIDE AREA NETWORKING (SD-WAN) CONTINUES TO BE ONE OF THE FASTEST-GROWING SEGMENTS OF THE NETWORK INFRASTRUCTURE MARKET:

- Increasingly, traditional enterprise WANs are not meeting the needs of today's modern digital businesses, especially as it relates to supporting Software as a Service (SaaS) applications and multi- and hybrid-cloud usage
- Enterprises want easier management of multiple connection types across their WAN to improve application performance and end-user experience.

Combined with the rapid embrace of SD-WAN by leading communications service providers (CSPs) globally, these trends continue to drive deployments of SD-WAN, providing enterprises with dynamic management of hybrid WAN connections, and the ability to guarantee high levels of service quality on a per-application basis.

With the growth of SD-WAN, however, service providers face challenges in scaling these services cost efficiently while delivering on the promised benefits of SD-WAN.

## TO HELP CSPS ADDRESS THESE CHALLENGES, ACCENTURE HAS DEVELOPED A SOFTWARE DEFINED KIT (SDK) LIBRARY AND APPLICATION BLUEPRINTS.

Leveraging Ansible-based<sup>1</sup> playbooks, Accenture's SDK library provides vendor-specific modular configuration building blocks that can be leveraged to easily build several applications.

Applications include:



**Real-time SD-WAN configuration management via a customer portal for co-managed services**



**Cloud-based SD-WAN test automation for cost efficiency and higher customer acceptance**



**Rapid branch onboarding for an accelerated and efficient service delivery process**



**Unified policy management for SD-Branch services enabling single pane of glass, consistent policy management**

<sup>1</sup> Ansible is a trademark of Red Hat

# REAL-TIME SD-WAN CONFIGURATION MANAGEMENT





Enterprises typically expect SD-WAN services to be provided as managed services. At the same time they want a level of direct control over their service configuration needs – making co-managed services a popular option.

As part of a co-managed offer, the service provider typically does the initial branch turn up and configuration, and then provides a customer facing portal for self-configuration of selected SD-WAN services on an ongoing basis.

**Accenture's SDK library enables the build of real-time configuration management applications in support of the customer portal;** automating the SD-WAN configuration from the portal to the SD-WAN vendor devices, in order to provide a real-time view of the customer's configuration and enabling rapid configuration changes to meet evolving customer needs.

The SDK library is supplemented with a microservices layer and a configurable rules engine as part of the application – providing lifecycle management for SDK playbooks, playbook selection logic, orchestration of playbooks, and business/engineering rules for validating the configuration requests sent by customers from the portal.

## REALIZED BENEFITS\* INCLUDE:

Rapid development of new feature automation 	<b>RESULTING IN</b> <b>Reduced time to market (from months to weeks)</b>
Lean automation stack 	<b>Lower development costs</b>
Always-on customer portal providing continuous real-time configuration information 	<b>Enhanced customer experience</b>
No costly manual interventions in the automation stack 	<b>Simpler recovery from configuration failures</b>




# SD-WAN SERVICE DELIVERY AUTOMATION

Once a service is ordered, businesses expect their SD-WAN sites to be turned up and ready for services quickly. Many service providers, however, face challenges in turning up sites rapidly and efficiently, without errors and expensive manual effort.

## TO ADDRESS THESE CHALLENGES, ACCENTURE'S SDK LIBRARY ENABLES THE BUILD OF BRANCH ONBOARDING AUTOMATION APPLICATIONS:

- Site design templates are defined by a solution architect in cooperation with the customer; capturing basic information required to stand-up site service including LAN/WAN IP addresses, VPN topology and DHCP configuration, and tailored to the site type (i.e. branch, headquarter or data center)
- Templates are filled with site-specific information by a sales engineer
- Templates are then processed by the branch onboarding automation application, which analyzes the templates and applies them programmatically to the SD-WAN device manager to create and provision the branches

## REALIZED BENEFITS\* INCLUDE:

	<b>Bulk branch provisioning,</b> enabling tens of branches to be provisioned at the same time as a single branch
	<b>Reduced configuration errors</b> as a result of automation
	<b>Reduced manual efforts,</b> enabling operations personnel to focus on higher order tasks such as the quality and validity of configuration instead of data entry tasks



# SD-WAN SERVICE TEST AUTOMATION

To ensure an improved customer experience and rapid customer adoption with a new service such as SD-WAN, service features must be bug free and of the highest quality. SD-WAN features, however, are more extensive and complex than traditional connectivity services, requiring more comprehensive testing, as well as automation to perform necessary testing rapidly, cost effectively and accurately.

**Accenture has developed a test automation framework and toolset, leveraging SDK playbooks, to enable automatic functional and non-functional testing of SD-WAN services.**

We leverage the Robot Test Framework and Jenkins pipeline, wrapped around the SDK playbooks and selected open source – as well as commercial test tools – to deliver this comprehensive test automation platform:

- Testing can be used as part of a continuous integration/continuous delivery (CI/CD) pipeline for new features, as well as regression testing of base SD-WAN features
- The test toolset can also be used for customer-specific acceptance testing before turning up services in the customer environment, or for troubleshooting when the operations team is trying to recreate specific customer issues.

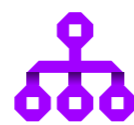
## REALIZED BENEFITS\* INCLUDE:



**Rapid time-to-market for new features**, with high quality and higher levels of customer acceptance



**Economies of scale in testing**, leveraging the AWS public cloud to the largest extent possible



**Remote and physical lab-free testing**, as customer branch sites can be fully emulated via virtual branches and all functional testing can be done in the cloud.





# SD-WAN UNIFIED POLICY MANAGEMENT

Enterprise Network Administrators face challenges in implementing security, quality of service (QoS) and traffic management policies consistently across a range of devices deployed in the enterprise network (including firewalls, Wi-Fi access points, SD-WAN and other devices). Typically, these disparate devices are managed with vendor specific portals and tools, making it a challenge to have a single pane of glass to configure and manage enterprise network policies.

**Accenture's SDK playbooks abstract vendor specific implementation details and provide simple configuration APIs that make it easy to author a unified policy manager**, enabling administrators to effortlessly manage enterprise-wide policies from a single pane of glass.

Accenture has partnered with service providers to implement network-wide policies in a unified policy manager in examples spanning network segmentation and the enforcement of bandwidth limits and traffic QoS treatments across Wi-Fi and SD-WAN devices from disparate vendors.

## REALIZED BENEFITS\* INCLUDE:



**Seamless automation of the configuration of enterprise-wide network policies**



**Reduced policy implementation errors across disparate vendor portals and systems,** as a result of consistent policy management and enforcement

\*Source: Accenture; average figures based on realized benefits from delivered engagements. Contact us for more information.





# FOR MORE INFORMATION

As CSPs look to capture the promise of the Pervasive Network, SD-WAN is poised to disrupt the enterprise market in multiple ways, offering significant cost and revenue opportunities while providing many advantages to CSPs and desired flexibility to customers.

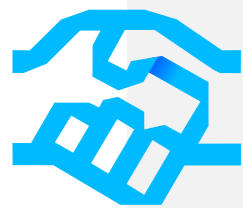
To learn how Accenture can support you on your SD-WAN journey, and for more information on Accenture's Software Defined Kit (SDK) playbooks and application blueprints, please contact:



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## ACKNOWLEDGEMENTS



We would like to acknowledge the contribution of Accenture's Advanced Technology Center in India (ATCI) team - including Nithyanandan PD, Mandeep Singh Kalra, Pankaj Wanikar, Arvind Kini, Santosh Tendolkar, Madhur Ramachandra,

Biswajyothi Choudhury, Soumya Bajpai, Babita Bansal and Santosh Venkat, and Accenture's Global Network Services team - including Matt Anderson, Rob Kozlowski and Peter Howe, in the development of the SDK concept and applications.

## **ABOUT ACCENTURE**

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## **ABOUT ACCENTURE NETWORK SERVICES**

As Communication Services Providers (CSPs) seek to capture the promise of the Pervasive Network, Accenture is helping CSPs accelerate their network transformation. By taking advantage of the opportunities made possible by new technologies including 5G, software-defined networking (SDN), network function virtualization (NFV), artificial intelligence, robotics process automation and blockchain, Accenture is working with CSPs to accelerate their current business sustainability while unlocking new growth and competitiveness.

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