**ACL Digital**
an ALTEN group company

ACL SD-WAN CONTROLLER

Overview

› Enterprises are adapting newer technologies to achieve business agility. Connecting various enterprise users, clients, partners to provide access for various cloud offerings over wan in a secure way is becoming crucial.

› The traditional wan networking technologies are complex and takes months to provide wan connectivity across business sites. The technology is moving more towards software/cloud centric to reduce the capex and opex of an organization.

› Software-defined wan simplifies and automates the way networks are designed, deployed and managed. Sd-wan solution establishes secure overlay transport irrespective of the underlay transport by the various internet service providers.

› ACL SD-WAN solution defines on-demand, end-to-end, flexible, economic, policy-based way of network automation to dynamically enable branch site communication for an enterprise, and also enables secure access for various users to applications at private, public and saas clouds.

› ACL SD-WAN solution offers ipsec vpn services over the various network transport technologies like mpls, internet broadband, 4g, lte, 5g etc at any location.

ACL SD-WAN Feature Highlights

› API Driven (REST, RESTCONF and NETCONF)

› Self-Service portal

› On Demand Branch-Site provisioning

› On Demand access to private, public and SAAS clouds

› Design WAN service capabilities

› Zero Touch Activation

› Zero Touch Provisioning

› Application aware QoS

› Analytics driven Intent Based Policy Management

› Vendor Agnostic VNF/PNF support

› vCPE fastpath framework (DPDK Enabled)

› Real Time Statistics Monitoring and Reporting

› WAN Service Assurance

› Optimal path selection on WAN Link Failover
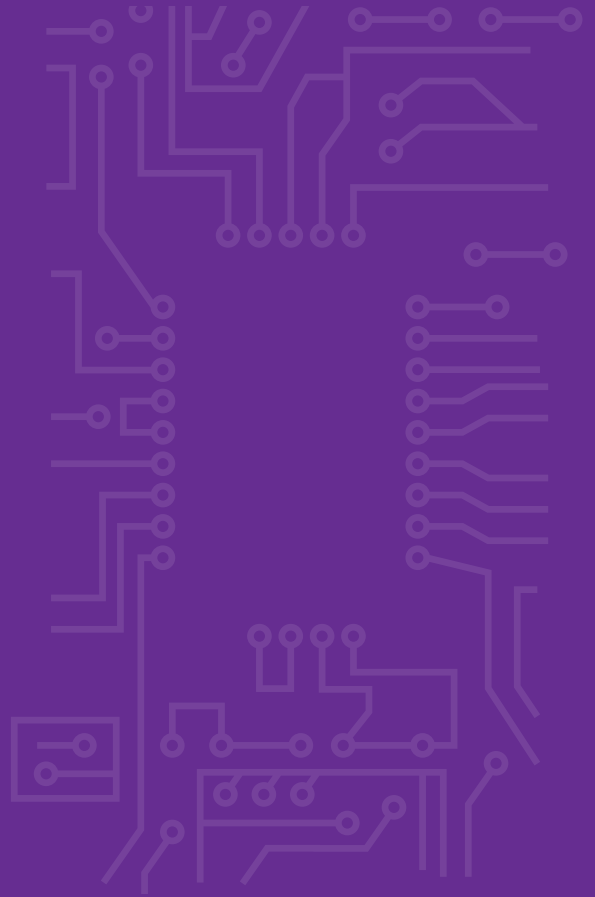
ACL SD-WAN Controller

ACL SD-WAN Controller is an SDN and NFV integrated platform and is logically composed of

› ACL Service Controller

› ACL NFVOPS
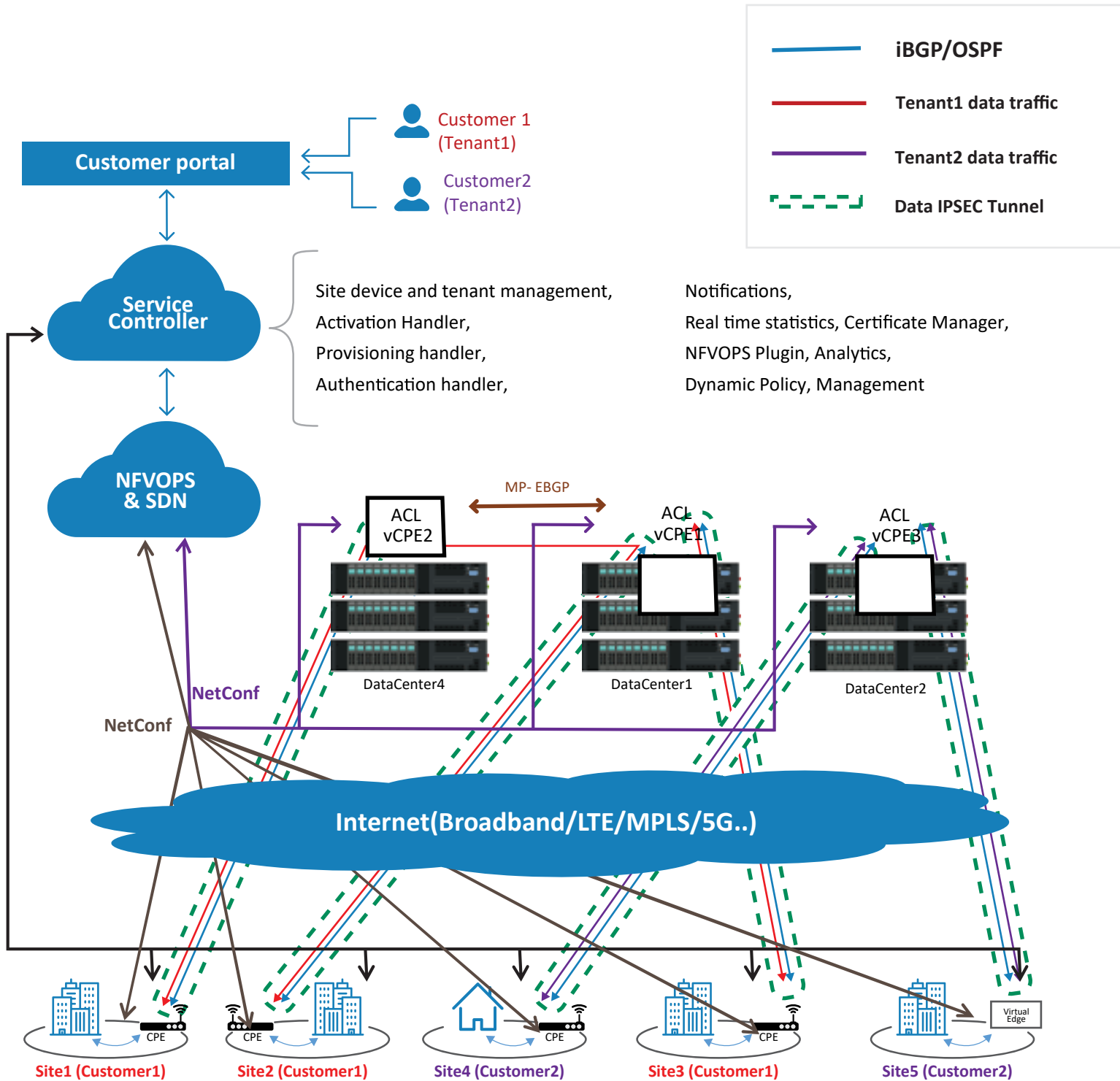
› SDN Controller (ODL)

› ACL vCPE VNF (DPDK enabled)
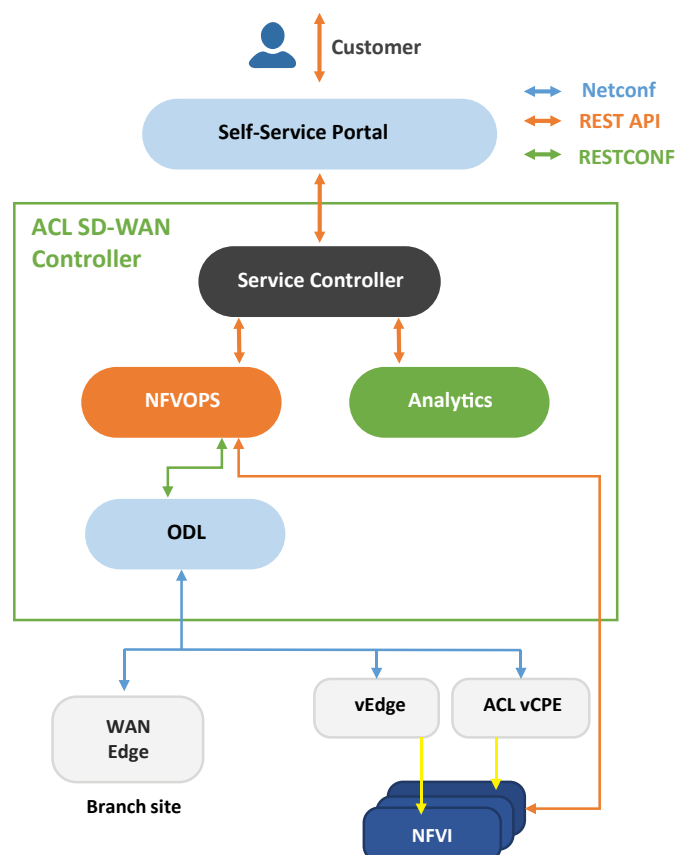
› ACL SD-WAN Controller is API driven centralized platform holding the WAN service abstraction. This platform provides the ability to design, save and publish the policy-driven WAN service requirements as an order for a site. The requested order contains the business requirements of a WAN service deployment.

› ACL SD-WAN Controller translates the business requirements and identifies the deployments, service level configurations, WAN application configurations, WAN policy configurations etc.. and initiates the request to ACL NFVOPS.

› ACL SD-WAN Controller securely enables the zero-touch-activation and zero-touch-provisioning of the uCPE devices(physical or virtual) located at the requested site of a customer.

› ACL SD-WAN Controller receives the real-time statistics from various sites , analyse and perform the dynamic policy updates if required. This ensures the effective bandwidth utilization for an application over chosen path by a customer.

Policy config input

Policy activation

Dynamic Policy Management

Monitoring/Analytics

Assurance/Remediate
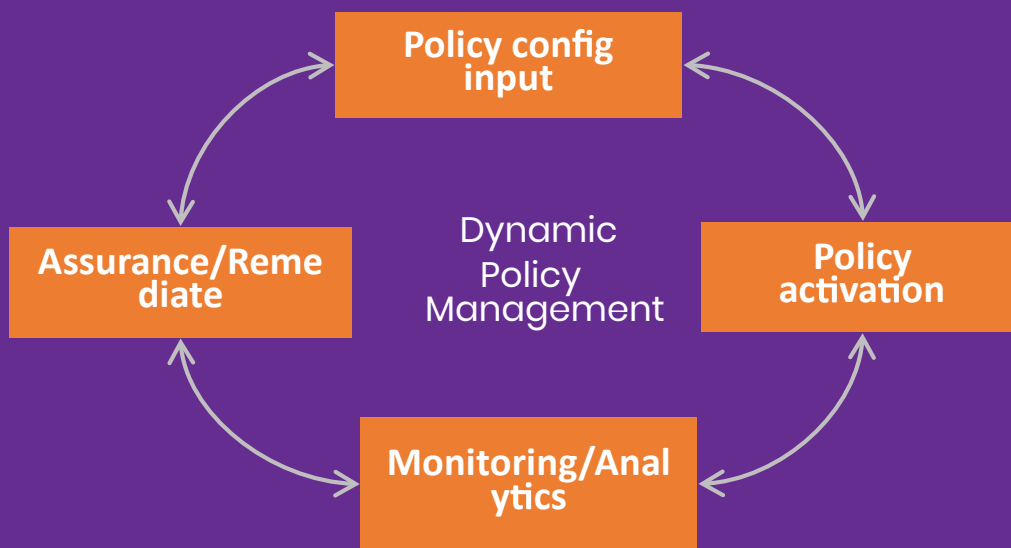
› ACL SD-WAN Controller enables the encrypted overlay establishment with virtual/physical edges at branch site location and ACL vCPE VNF (DPDK enabled).

› ACL SD-WAN solution can be deployed on Openstack and AWS.

› ACL vCPE VNF is core hub of the SD-WAN solution which enables the secure communication to various branches of an enterprise, users of private, public and SAAS Clouds.

› ACL vCPE VNF is rich suite of DPDK optimized high performance fast path functions that can be deployed on COTS x86 platforms.

› ACL vCPE VNF framework offers multi-tenancy by dynamically enabling the control plane and management plane for a tenant in docker containers.

› ACL vCPE VNF exchanges routes over the secure overlay transport with virtual/physical edges of various branch sites via the dynamic routing protocol, which enables secure communication for various enterprise sites.

› ACL vCPE VNF with CG-NAT support to enable secure communication for the internet destined traffic from various enterprise sites.

› ACL SD-WAN solution supports peer-to-peer vCPE communications which are deployed across the data-centers of service provider via dynamic routing protocol.

ACL SD-WAN Deployment Diagram

Legend:
- iBGP/OSPF
- Tenant1 data traffic
- Tenant2 data traffic
- Data IPSEC Tunnel

Customer 1 (Tenant1)

Customer2 (Tenant2)

Customer portal

Service Controller

Site device and tenant management,
Activation Handler,
Provisioning handler,
Authentication handler,

Notifications,
Real time statistics, Certificate Manager,
NFVOPS Plugin, Analytics,
Dynamic Policy, Management

NFVOPS & SDN

MP- EBGP

ACL vCPE2

ACL vCPE1

ACL vCPE3

DataCenter4

DataCenter1

DataCenter2

NetConf

NetConf

Internet(Broadband/LTE/MPLS/5G..)

CPE

CPE

CPE

CPE

Virtual Edge

Site1 (Customer1)

Site2 (Customer1)

Site4 (Customer2)

Site3 (Customer1)

Site5 (Customer2)