TELCO PRODUCT & SOLUTION ENGINEERING

ACL Digital has played a pivotal role in the evolution of 5G through proactive investment in emerging technologies such as Software Defined Networking (SDN) and Network Function Virtualization (NFV).

5G networks will ultimately bring large-scale changes, such as the dramatic increase in the number of devices connecting to the network and the availability of massive bandwidth and ultra-low latency. ACL leverages Edge Computing, Network service Orchestration, Network Automation, Security virtualization, Edge Cloud and SDN/NFV to create 5G roadmap.

We work with Telcos & NEMs to

- Design next-gen telecom capability and platforms
- Reduce dependency on proprietary appliances and take advantage of open source technologies
- Automate services in an agile way by leveraging commodity hardware and software-defined networks
- Improve R&D efficiency in product development and sustenance activities
- Accelerate time-to-market with our market proven solution accelerators and frameworks
- Deliver secure, reliable and low latency services on demand

25+ Years Product & Solution Engineering Excellence	500+ Strong Solution Engineering Talent Pool	100+ Satisfied Customers Worldwide	3 Fortune 100 Telco Customers	4 of Top Global Product Companies
10+ Fortune 500 Telco & NEM Customers	10+ Solution Accelerators & Customizable Frameworks	100+ Solution Deployments	30+ Countries	

EXPERTISE STACK

MULTI ACCESS EDGE COMPUTING (MEC)

- Reliable low latency services
- Edge cloud orchestration & management
- Edge virtualization and autoscaling

AUTOMATION ORCHESTRATION & MANAGEMENT

- Secure provisioning of infrastructure resources
- Workflow based automation
- Multi cloud workflow automation

SECURITY

- Virtualized security functions and services
- Secure service chaining and provisioning on multicloud environment
- Reliable and scalable security ecosystem

ENABLING 5G USING SOLUTION ACCELERATORS AND FRAMEWORKS

Framework

Use Cases

5G

Framework:
- Design next-gen
- NFVOPS
- SD-WAN Gateway
- vFirewall
- Virtual CPE
- Automation Orchestration

Use Cases:
- Multi Access Edge Computing
- Virtualized Security
- Edge Cloud
- Virtualization
- Orchestration Management
- SDN/NFV
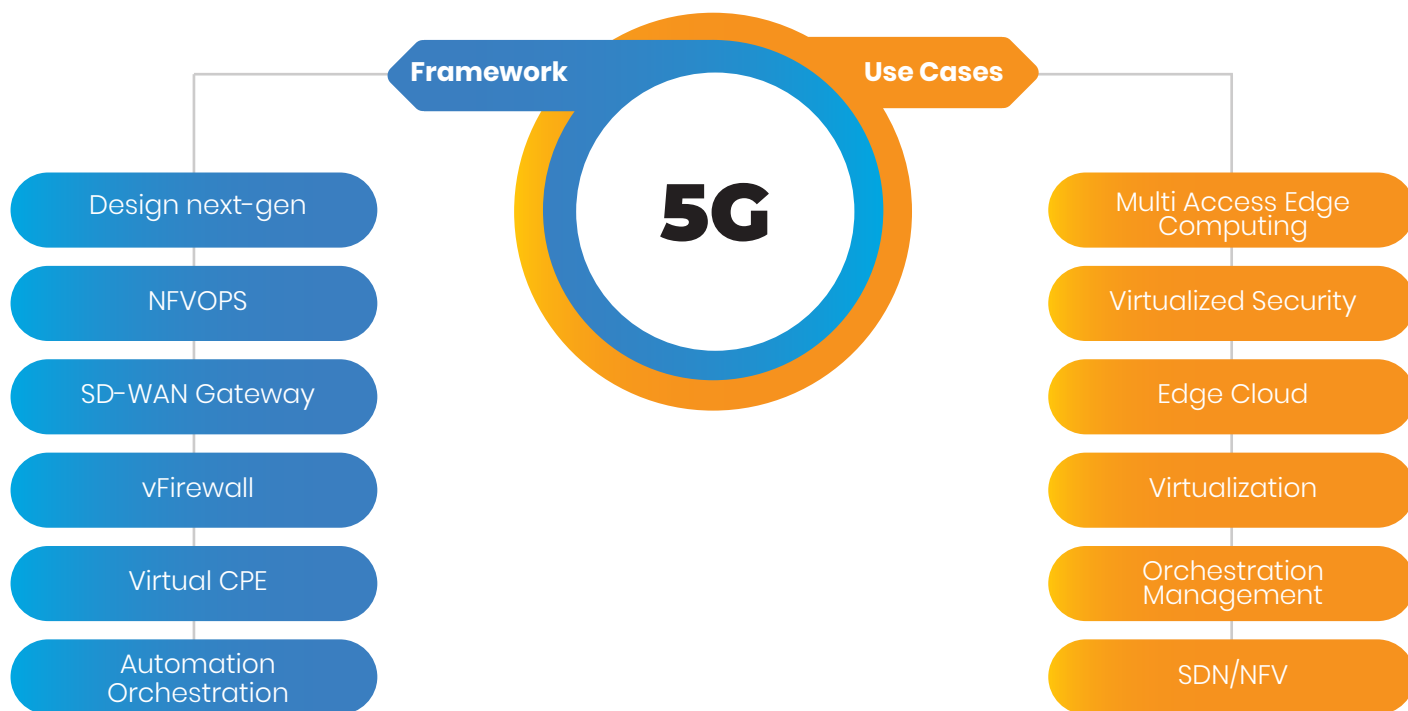
ENABLING 5G USING SOLUTION ACCELERATORS AND FRAMEWORKS

pioneer in the Software Defined Networking (SDN) and Network Function Virtualization (NFV) space, ACL Digital has delivered:

One of the first commercially deployed Virtual CPE solutions for Managed Security service

NFV Management and Orchestration Framework compliant with ETSI NFV ISG MANO specifications

DPDK optimized high performance Virtual Network Functions (VNFs) with seamless integration with industry leading NFV orchestrator
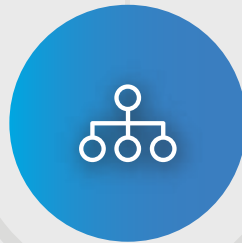
SDN controller extensions & SDN applications for Network Management and end-to-end service provisioning of network services

SERVICE OFFERING

Consulting Services

- Business Case definition
- POC & Prototyping
- Solution Roadmap
- Technology Assessment

Solution Engineering Services

- Design, Development & Optimization of VNFs
- VNF verification and testing
- Porting of VNFs from custom silicon from standard X86 platforms
- Development VNF packages for a service deployment
- SDN Controller/Application development & Integration
- Design & development of VNF life cycle management framework

Characterization and Benchmarking Services

- VNF performance and benchmark testing
- VNF performance characterization and certification testing
- Multi-vendor VNF performance benchmarking
- Multi-vendor VNF service chaining and testing
- Multi-protocol and comprehensive testing

Test and Test Automation Services

- Test case optimization
- Development of multi-domain test automation and orchestration
- Workflow automation
- Multi-domain service orchestration
- DevOps and products life cycle testing

System Integration

- SDN controller customization and feature enhancement for ODL and Open contrail
- MANO integration with service management system (OSS/BSS)
- Multi-vendor VNF integration for service chaining
- L4- L7 Service integration on Datacenter network, private and public clouds
- Multi-domain service orchestration and integration with carrier networks

Managed Services

- On-shore, Off-shore and Nearshore delivery model
- Global coverage of resourcing model and local fulfillment
- Project program and portfolio management
- Strong domain expertise

CASE STUDY 1 : EDGE CLOUD ORCHESTRATION AND MANAGEMENT

$125bn Telecommunication se rvice p rovider

Overview

The customer is a US-based telecommunication service prvider, looking for a new solution approach to maximize the utilization of NFVi. Customer wants to deploy edge orchestration solution at data centers and Branch offices to enable seamless management of virtual and containerized infrastructure.

Challenges

› Service providers have to introduce more network functions per rack unit of Edge Infrastructure by using containerized micro services

› To minimize VPN service operations expenses for SMB's

Solutions

› Kubernetes control plane orchestration for NFVi management

› Built Multi cluster environment using Calico for networking

› Configured VPN tunnels between DC Node and Branch office Edge Node

› VXLAN over VPN for AWS connectivity

› Enabled traffic steering of 5G application

› API calls to access data from Prometheus

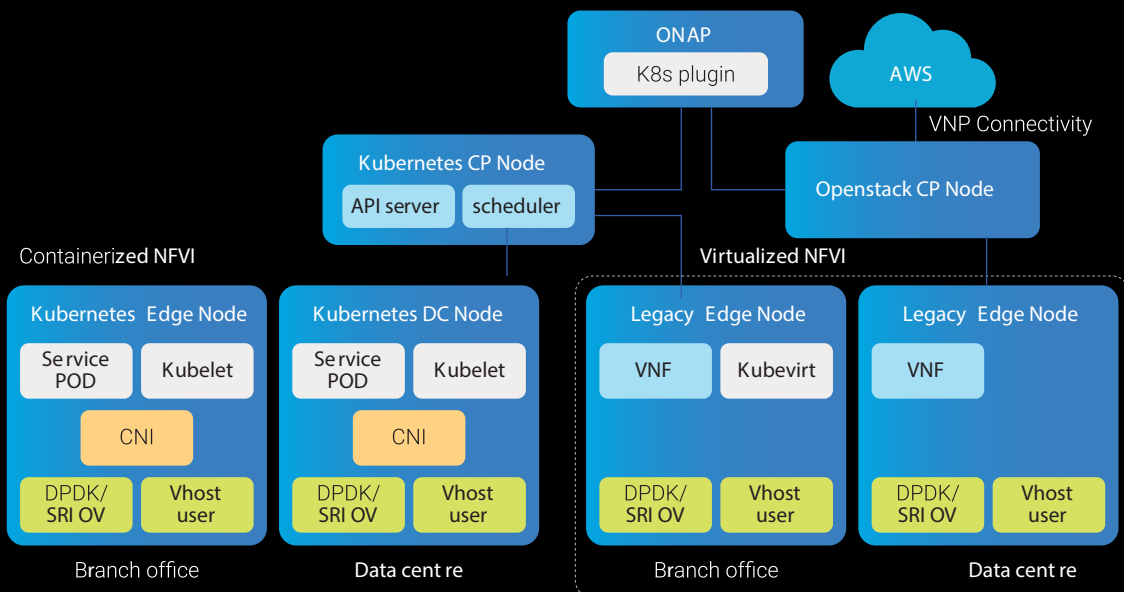› ELK instances for Data collection and management

Outcomes

60%
TCO Reduction by introducing containerized micro services

40%
Reduction in VPN service operations for SMB

KUBERNETES ORCHESTRATION SOLUTION DIAGRAM

CASE STUDY 2 : NETWORK SERVICE AUTOMATION ORCHESTRATION AND MANAGEMENT

A $125bn Telecommunication service provider

Overview

The customer is a US-based telecommunication service provider looking to reduce the deployment life cycle and deliver a cloud operating model in the enterprise branch offices. The customer wants to enable multi-site service provisioning and reduce deployment duration with Network service Automation and Orchestration.

Challenges

> Field Engineers have to visit the sites to provision the network services at Branch offices

> Manual configuration of devices & deployment of new services at branch offices is time-consuming and error prone.

Solutions

> Cloud agnostic multi-tenant services platform with centralized Orchestrator

> Secure Tunnel between the Branch offices ThinCPE and vCPE at centralized location

> Flexible deployment choices using low-cost CPE appliances and VNFs

> Multi- Tier, Multi-cloud and Multi- tenancy model, End to End service Orchestration
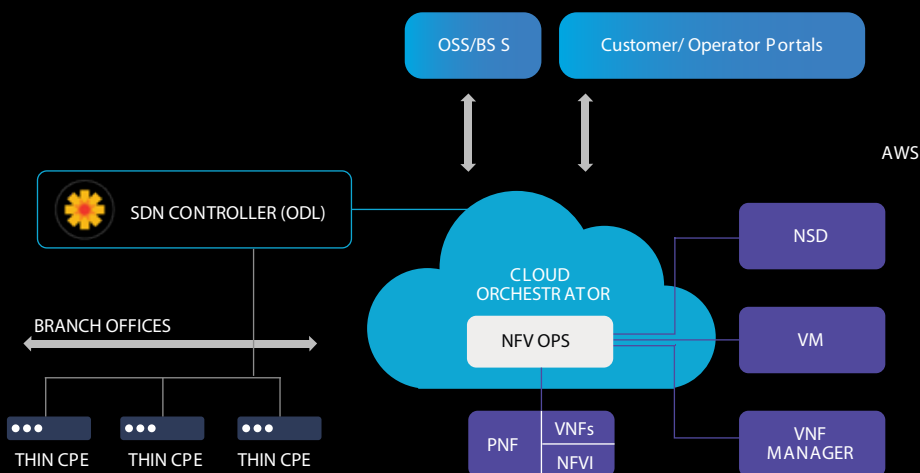
Outcomes

30%
Reduction in time taken to provision the services at Branch offices

50%
Opex saving by simplified network support and Operations management

AUTOMATION ORCHESTRATION SOLUTION DIAGRAM

OSS/BSS | Customer/ Operator Portals

AWS

SDN CONTROLLER (ODL)

BRANCH OFFICES

THIN CPE | THIN CPE | THIN CPE

CLOUD ORCHESTRATOR

NFV OPS

PNF | VNFs | NFVI

NSD

VM

VNF MANAGER