ORACLE

Oracle Communications IP Service Activator

Oracle Communications IP Service Activator (IPSA) enables communications service providers (CSPs) to offer dynamic connectivity services to support enterprises' new cloud-based business models. Through its programmatic intent-based network API, IP Service Activator plays a key role in supporting customer and application-driven service control for complex connectivity services.

IP Service Activator's powerful policy-driven approach and expert service models enable the efficient and automated provisioning of Ethernet, IP and MPLS-based connectivity and application services — such as IP/Ethernet VPNs, multicast VPNs, QoS, firewalls, and Bandwidth on Demand – in heterogeneous, multi-vendor networks transitioning to SDN and NFV.

IP Service Activator context within Oracle's Unified Orchestration solution

IP Service Activator is a key component within Oracle's Unified Orchestration solution, shown below, that provides a multi-domain service orchestration platform to deliver intent driven automation.

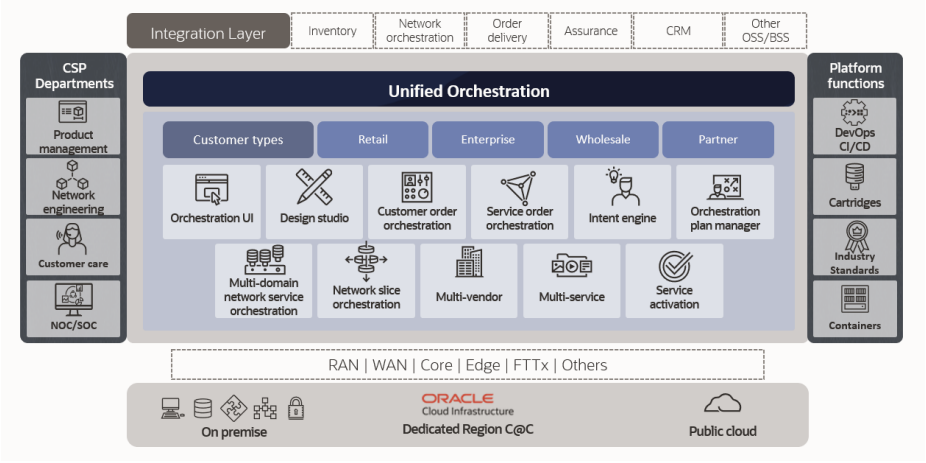

Image 1. IPSA context within Oracle's Unified Orchestration solution

WAN Controller in MEF Lifecycle Service Orchestration (LSO)

To offer secure, high-performing dynamic connectivity services, CSPs are adopting the MEF's Lifecycle Service Orchestration (LSO) reference architecture, IP Service Activator fulfils LSO's WAN Controller role for IP/Ethernet MPLS-based connectivity services, providing programmatic and real-time provisioning

Key benefits

- Enables dynamic connectivity for Cloud-based business models
- Supports rapid service innovations for complex connectivity services
- Plays key role in supporting customer and application-driven service control in complex networks
- Unifies provisioning automation for heterogeneous, multi-vendor networks transitioning to SDN and NFV
- Protects SLAs with configuration monitoring and highly reliable service updates and rollbacks for complex services
- Rapidly implements complex network and customer-wide configuration changes
- Simplifies upstream IT architecture by abstracting standard services from network service implementations
- Enables deployment of the most suitable and cost-effective devices for CSP service offerings without vendor lock-in

ORACLE

of these services while abstracting the network implementation complexity away from the service orchestration layer.

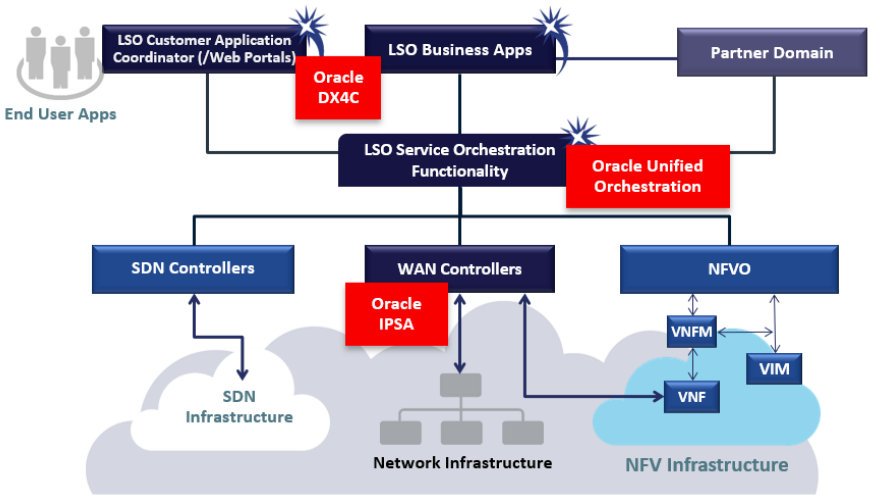

Image 2. IPSA as a WAN controller for MPLS-based services in the MEF LSO reference architecture

In the LSO architecture, Oracle's Unified Orchestration solution performs the role of LSO Service Orchestration, dynamically designing the end-to-end service, then orchestrating service fulfillment across the SDN controller(s), WAN controller(s) and NFV Orchestrator (NFV-O).

Market-proven for IP service control across diverse networks

IP Service Activator is an industry proven and sophisticated IP controller for complex MPLS-based connectivity and IP applications services running on multi-vendor networks transitioning to SDN and NFV. It supports real-time service control, with carrier-grade reliability and 'network engineer' accuracy for complex create, modify, move, and delete use cases.

Deployed by CSPs around the globe, IP Service Activator addresses key Network-as-a-Service (NaaS), SDN and NFV business requirements, including:

- Real-time customer control for enterprise connectivity services
- Abstraction of network implementation across multivendor networks transitioning to SDN and NFV
- Programmatic and unified service configuration control across physical and virtualized networks
- Service integrity and reliability for complex MPLS and IP-based services

These IP Service Activator capabilities were demonstrated in the Proof-of-Concept "Zero-Touch Network-as-a-Service Leveraging LSO, SDN and NFV" that enabled rapid integration and operationalization of new technologies and graceful evolution as use cases change over time. This showcase demonstration was recognized with a MEF Excellence Award.

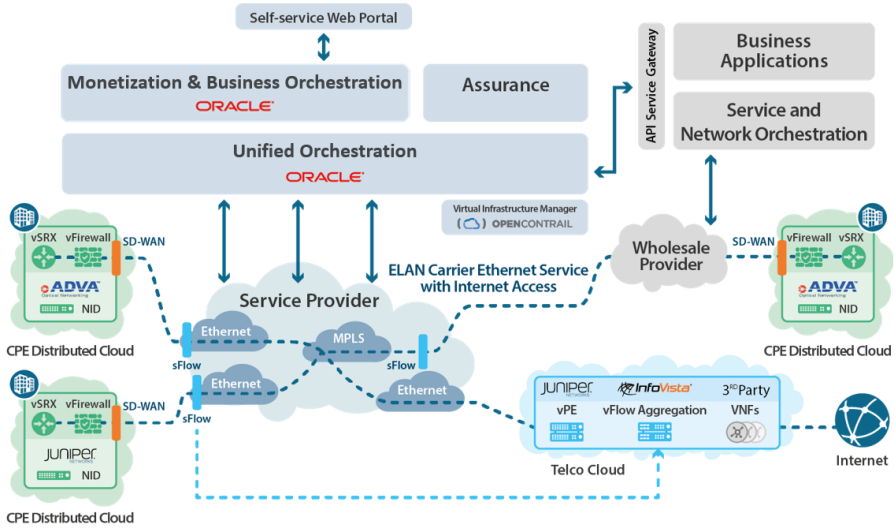

Image 3: End-to-end, standards-based architecture for NaaS orchestration and assurance.

Product Overview

IP Service Activator simplifies the delivery and ongoing management of MPLS-based connectivity and IP application services. It does this by interoperating seamlessly, through its programmatic intent-based network REST API, with a higher-level service and/or NFV orchestrator. Higher level orchestrators delegate to IP Service Activator the network implementation of MPLS-based services and IP applications, often in complex multi-technology and multi-vendor environments.

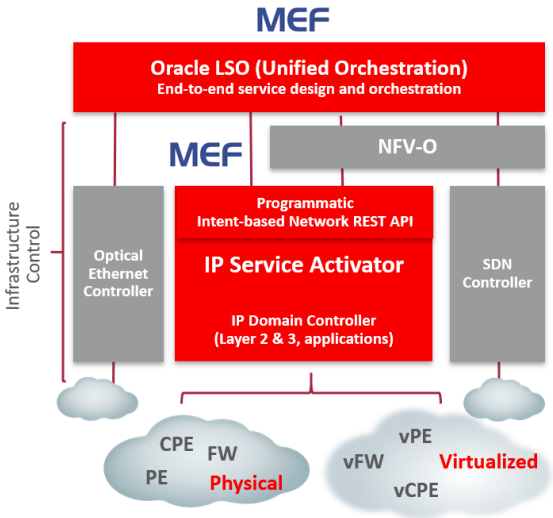

Image 4: IP Service Activator overview

Key features

- Comprehensive product catalog mapping commercial services to technical services
- Programmatic, intent-based network REST API
- Powerful policy-based management
- Service configuration lifecycle management
- Expert IP/Ethernet service modules
- Comprehensive multi-vendor support
- Open platform for service modeling and vendor extensibility
- Service compliance auditing and real-time monitoring
- PNF and VNF configuration management, templating and activation
- Hybrid network discovery and topology management
- IPv4 and IPv6 provisioning support
- Flexible network protocol support: SSH, CLI, NETCONF, SNMP, etc.
- Oracle Linux with Oracle VM, Oracle Solaris, IBM/Redhat Linux, Oracle Enterprise Database and Oracle RAC support

IP Service Activator has a rich functional architecture with extensive capabilities for supporting CSPs' Network-as-Service, NFV and SDN business requirements.

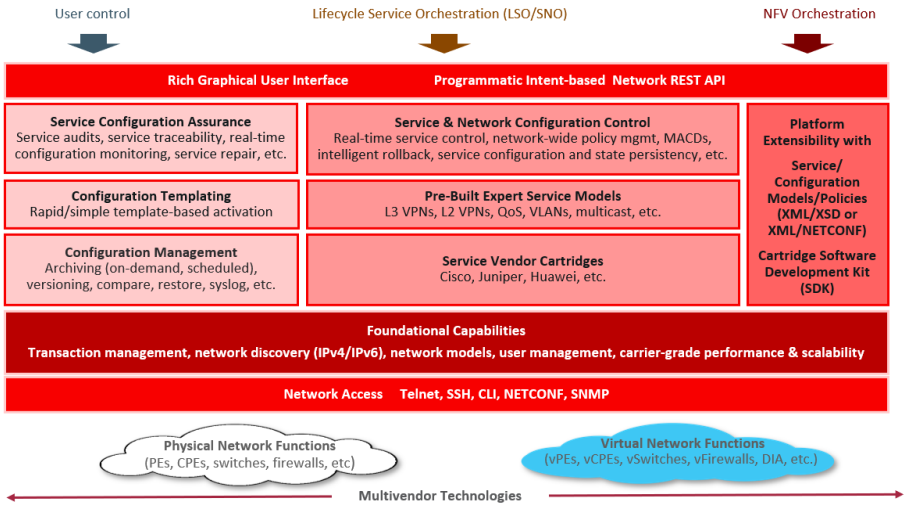

Image 5: IP Service Activator functional architecture

Programmatic Intent-based Network REST API

Abstracts standard services (ex: CE 2.0) from network technology-specific implementations (MPLS-based, VLAN switching, Optical rings, etc.) to support rapid service innovation and simplify the service orchestration layer.

Powerful Policy-based Management

Single-point control of service policies, such as QoS, VPNs, Firewalls, across diverse sets of physical and virtual network functions (PNFs/VNFs) or network interfaces, with powerful network-wide or customer-wide multi-vendor policy control and activation.

Service Configuration Lifecycle Management

Powerful and highly reliable service configuration lifecycle management for any use case, enabling service updates, deletions, and totally reliable rollbacks of complex service configurations. This approach contrasts with custom scripts or templates which are often unreliable and work only for a limited set of provisioning use cases.

Expert IP/Ethernet Service Modules

Set of highly comprehensive service models for complex IP/Ethernet VPN services over MPLS (Layer 3 VPNs, Layer 2 VPNs, QoS, VLANs, Multicast, etc.) enabling automated service provisioning without knowledge of the network implementation.

Comprehensive Multi-vendor Support

Comprehensive IP/Ethernet provisioning support for leading network equipment vendors, including Cisco, Juniper, Huawei, etc. Plug and play device cartridge architecture enables CSPs to flexibly deploy the most suitable and cost-effective devices for their service offerings without being tied to a single vendor.

Open Platform for Service Modelling and Vendor Support

Open service modeling framework for updates and/or creation of new services with powerful service configuration lifecycle management. Likewise, with service-level vendor abstraction, platform flexibly supports new vendors and vendor capabilities, including CLI or NETCONF-based cartridges and multiple PNF/VNF types and OS variations.

Service Compliance Auditing and Real-Time Monitoring

Proactively monitors, in real-time, service compliance of PNF/VNF configurations, pinpointing with visual markers configuration errors among 1,000+ lines of configuration, enabling Network Engineers to efficiently repair non-compliant service configurations.

PNF and VNF Configuration Management, Templating and Activation

Sophisticated and easy configuration management and templating across hybrid networks with PNF and VNF functions, including on-demand, event, and schedule-based configuration archiving; intelligent restore; configuration compare; modular and re-useable templates; and controlled template-based activation.

Hybrid Network Discovery and Topology Manager

Automated network discovery and topology management of node capabilities and organization across hybrid MPLS-based networks.

Flexible Deployment Options

IP Service Activator supports flexible deployment options based on the business need.

BUSINESS NEED	TIMEFRAME	CAPABILITIES
Configuration Mgmt. & Activation	1-2 weeks	• Supports IP/Ethernet device and PNF/VNF configuration management, templating, and activation.
IP/Ethernet WAN Control	1-2 months	• Create your service models, with vendor cartridge extensions, or model with NETCONF/YANG on NETCONF cartridges
Advanced IP/Ethernet WAN Control	2-4 months	• Rapidly deploy productized modules for complex services (1-4 weeks), migrate existing services and create additional vendor service cartridges

Table 1. Typical deployment timeframes for IP Service Activator.

Connect with us

Call +**1.800.ORACLE1** or visit **oracle.com**. Outside North America, find your local office at: **oracle.com/contact**.

blogs.oracle.com facebook.com/oracle twitter.com/oracle