Multitenant, multivendor service lifecycle framework

The communications network industry is undergoing a fundamental shift away from traditional vendor-specific, purpose-built devices and labor-intensive operations and management. Network functions are becoming unified, virtualized, and software-based as a result of the new generation of network functions virtualization (NFV) technologies. The rich potential of cloud, managed security and the Internet of Things (IoT) depends on NFV technologies. At the same time, service providers are challenged with managing numerous physical devices or virtualized resources in multivendor environments, including the challenge of integrating next-generation devices and preserving the useful life of legacy equipment.

Virtuora Service Activator, powered by UBiqube, is a lifecycle orchestration framework that enables services to be designed, processed and automated over a hybrid network combining legacy and virtualized equipment and software. By presenting network operations and management procedures under a uniform user interface, Virtuora Service Activator masks the many differences among devices from multiple vendors. The system further simplifies service introduction and reduce time to market for new services via real time provisioning and automation. A single, unified interface for network management also reduces staff training needs and error potential.

Virtuora Service Activator also models and provides Applications Programming Interfaces (APIs) for diverse service integration, operations, management, and security systems. This API modeling capability makes it possible for these disparate systems to meaningfully exchange data, and also enables new network elements and vendors to be rapidly incorporated into the network without requiring massive integration or retrofitting.

Virtuora Service Activator consists of four functional modules:

- Service assurance for managed security, cloud, SD-WAN and software-defined data centers
- Lifecycle management
- Configuration management
- Service provisioning and fulfillment

Virtuora Service Activator Highlights

- Unified view of network operations
- Role-based Web access, including customer portals
- Works with any device or vendor—on any service or layer
- Fully automated service lifecycle
- Comprehensive service views
- Customer self-care portals
- Assurance, reporting and analytics modules
**A DevOps-Ready Environment for Service Automation**

**An Automated Service Lifecycle Approach**

Virtuora Service Activator offers agile service automation in a DevOps-ready environment. Entire workflows can be created by building and connecting “microservices,” reusable individual service functions. This unprecedented flexibility and simplicity speeds development, configuration and deployment of services, as well as allowing granular changes to individual services or types of service. Microservices can also be individually modified or added/removed from workflows, making it simple to instantiate or roll back specific parts of a service without affecting the whole.

The overall result is zero-touch workflow automation and a drastic reduction in laborious, error-prone manual scripting or command-line procedures. In addition, automated pre-deployment testing reduces customer-affecting issues.

**Use Case Highlights**

- Cloud security automation and UCPE/vCPE
  - Self-adaptive security
  - Appliance and multivendor VNF management
- SD-WAN
  - End-to-end service orchestration over hybrid architecture
  - End-to-end orchestration from customer premises to cloud
  - Extend SD-WAN beyond connectivity
  - Agile integration with existing OSS stacks via APIs, avoiding silos
- Software-Defined Data Center (SD-DC)
  - Top-to-bottom VNF and infra-orchestration
  - Managed data center switches, VIM, VNF and network functions
  - Multivendor VNF, SD-DC controller and legacy switch support
  - “Single pane of glass” management portal

**Virtuora Service Activator Framework**

[Diagram of Virtuora Service Activator Framework]
Build and Grow a Virtualized, Programmable Network

About the Virtuora Product Suite
Part of the Fujitsu Virtuora SDN/NFV Product Suite, Service Activator helps realize the value of disaggregated SDN architecture, an open-source controller, and modular applications. By separating the control functions from the hardware and logically centralizing and managing them, Virtuora makes it possible to work across multiple devices, layers, and vendors quickly, efficiently, reliably, and best of all—automatically.

By implementing a Fujitsu Virtuora solution, you can:

■ Cut long-term operational and capital costs
■ Speed up service launch and delivery
■ Maintain support for current revenue-bearing services
■ Preserve the useful life of existing network assets
■ Choose equipment and technology without vendor dependence
■ Improve quality of service and customer experience
■ Quickly identify, anticipate and meet customer needs
■ Open up a rich ecosystem of new revenue opportunities

System Requirements

<table>
<thead>
<tr>
<th>Hardware</th>
<th>CPU</th>
<th>Intel® Xeon® (16 cores or higher)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Memory</td>
<td>128 GB or higher</td>
<td></td>
</tr>
<tr>
<td>Storage</td>
<td>650 GB or higher</td>
<td></td>
</tr>
<tr>
<td>Ethernet Card</td>
<td>1000BASE-T (2 ports or higher)</td>
<td></td>
</tr>
</tbody>
</table>

Operating System
Red Hat Enterprise Linux 7.2 (for Intel 64)