RIBBON COMMUNICATIONS AND WIND RIVER
Joint Solution Delivers VNFs with Carrier Grade Reliability

Ribbon Communications, a leading provider of real-time communications software solutions, has collaborated with Wind River® as part of the Wind River Titanium Cloud™ Ecosystem to demonstrate the power of Network Functions Virtualization (NFV) for communications service providers (CSPs). Ribbon's portfolio of elastically scalable, virtual network functions (VNFs) and VNF Manager (VNFM) are integrated with the Wind River Titanium Cloud software environment, which means CSPs can now have enhanced, carrier grade real-time communications service offerings with the following benefits:

- Reduced capital expense, optimized operating expenses, and accelerated service agility
- Use of open standards to help avoid proprietary hardware and vendor lock-in
- Intelligent VNF management framework and open APIs to streamline interworking, combined with carrier grade availability for reliability
- A graceful migration path that avoids "rip and replace" network transformations
- Delivery of industry-leading media packet performance for real-time communications in the cloud
- Ability to address wide range of applications with this joint solution: access and core network session border control, converged intelligent messaging, cloud-based unified communications, and IMS media resource and gateway implementations
- Flexible licensing plans for elastic services and on-demand applications

ALWAYS-ON ELASTICITY AND SERVICE AGILITY

A transformation is underway to enable better use of network infrastructure and faster time to market through software-defined services. CSPs are seeking best-of-breed solutions that can help accelerate this transformation. They are also demanding solutions that provide seamless automation without compromising the "always-on" reliability expected from carrier grade systems. Ribbon and Wind River have joined forces to offer multiple different VNFs for the service provider NFV deployments that incorporate the true elasticity, orchestration, programmability, and automation that service providers expect for their NFV solutions.

AN ECOSYSTEM ENABLING THE PROMISE OF NFV FOR SERVICE PROVIDERS

Through the Titanium Cloud Ecosystem, Wind River has collaborated with industry-leading hardware and software companies to ensure the availability of interoperable standard NFV products optimized for deployment with Titanium Server. Using solutions from the Titanium Cloud Ecosystem will accelerate time-to-market, reduce risk, and significantly improve the deployment of an end-to-end NFV infrastructure.

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ribbon™

Ecosystem Component
VNF provider

Ribbon Solutions

- Session Border Control Software Edition (SBC SWe)
- Media Resource Function Processor (MRFP)
- VNF Manager (VNFM)
- Element Management System (EMS)
- Policy and Routing Control (PSX)

Value

- Provides elastically scalable capacity on demand
- Offers decoupled signaling, media, and transcoding for resource optimization
- Delivers an intelligent VNF management framework with carrier grade availability

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HIGH PERFORMANCE, HIGHLY RELIABLE

Ribbon's VNFs (see Figure 1) on Titanium Cloud software enable high-reliability solutions for CSPs. Using open standards, Titanium Cloud software provides carrier grade NFV infrastructure capabilities, including sub-second fault and failed virtual machine (VM) detection, high switching performance to maximize VM density, and built-in packet acceleration—all contributing to a high-performance and high-reliability telco cloud.
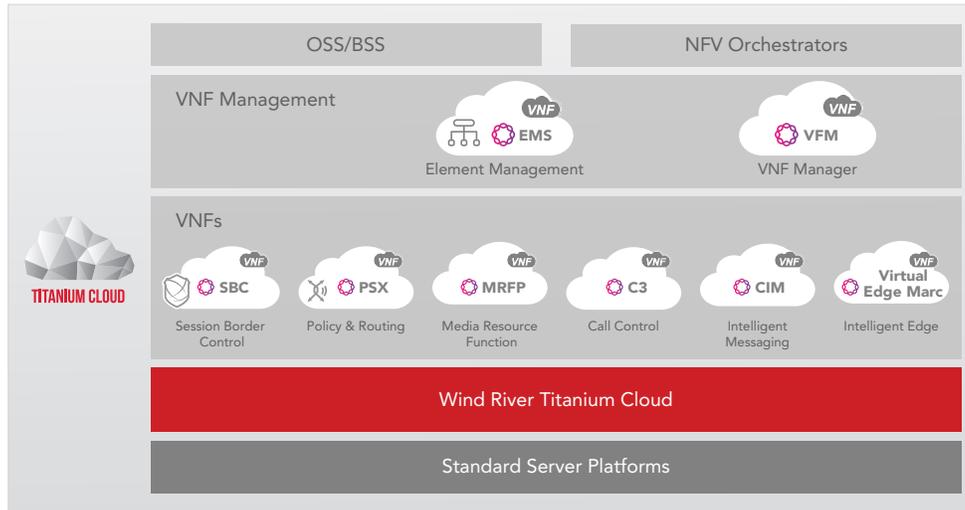

Figure 1. Titanium Cloud components with Ribbon VNFs

RIBBON: SBC VIRTUALIZED NETWORK FUNCTIONS

CSPs need to provide secure and seamless interworking of real-time communications sessions across IP network borders to offer high-quality interconnect and access-based communications services to their business and consumer customers. These services include Session Initiation Protocol (SIP) trunking, Unified Communications, Intelligent Edge features, and SBCs as a service (SBCaaS) to businesses, and interconnect services including voice over Long-Term Evolution (VoLTE), rich communication services (RCS), and roaming for peering and Internetwork Packet Exchange (IPX) applications.

Ribbon's virtualized SBC provides CSPs and enterprises robust security and seamless interworking of real-time communications services across IP network borders for many applications (see Figure 2).
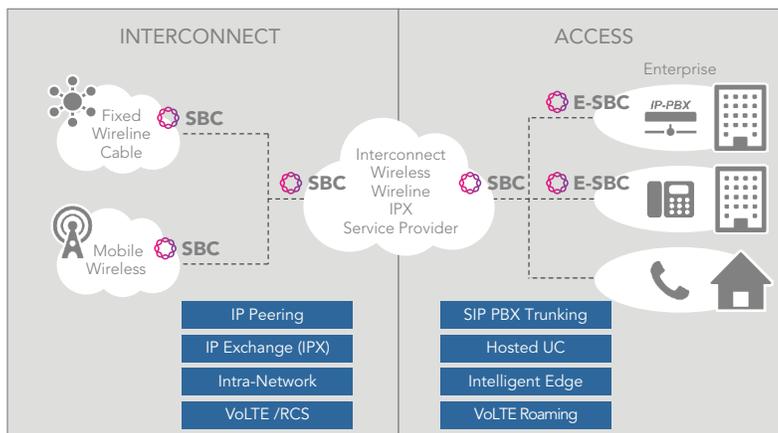

Figure 2. Ribbon SBC applications

Ribbon SBC VNFs are designed to enable flexible distributed deployment topologies, maximizing the benefit of the independent and elastic scaling of the SBC control/signaling, media processing, and transcoding VNFs. The microservices architecture of the cloud-native SBC VNFs consist of virtual machine (VM) clusters, providing high performance and elasticity while enhancing resiliency and georedundancy. Furthermore, the SBC can uniquely support hybrid virtual configurations whereby the media transcoding can be supported by software-based media processing and transcoding on graphical processing units (GPUs) or on a commercial off-the-shelf (COTS) appliance controlled from the cloud, or vice versa (see Figure 3). This allows for a graceful evolution of existing network-based deployments to the NFV cloud, and the protection of existing investments.
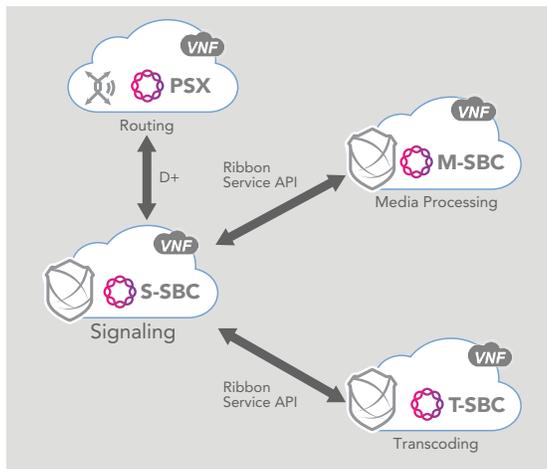

Figure 3. SBC VNF microservices architecture

Ribbon's VNF Manager provides full lifecycle management of both Ribbon and third-party VNFs, supporting instantiation, orchestration, automation, and elastic scalability. The VNFM enables seamless interworking with the orchestration and virtualization infrastructure manager environments.

Ribbon Management solutions provide virtualized, centralized element management for configuration and performance monitoring.

WIND RIVER: TITANIUM CLOUD

As the industry's first fully integrated and feature-complete NFV software platform, Titanium Cloud enables an NFV infrastructure to achieve the ultrareliability and high performance mandated for telco networks. It delivers six-nines (99.9999%) reliability, compared to the three nines of virtualized platforms based on common enterprise software. Combining open source and open industry standards with required carrier grade extensions, Titanium Cloud is the only commercial server solution enabling service providers to maintain the rigorous uptime required as networks transition to a virtualized infrastructure. With Titanium Cloud, service providers can now meet the "always-on" expectations of consumers.

MORE INFORMATION

Detailed information about Ribbon, including technical information about Ribbon NFV solutions, can be found at ribboncommunications.com/solutions/service-provider-solutions/network-functions-virtualization.

Detailed technical information about Wind River Titanium Cloud can be found at www.windriver.com/products/titanium-cloud.

Additional information about the Titanium Cloud Ecosystem can be found at www.windriver.com/announces/titanium_cloud_partner_program.

SUMMARY

The Ribbon and Wind River partnership enables service providers to leverage NFV without sacrificing the reliability and performance of fixed-function networking solutions. By collaborating with Wind River through the Titanium Cloud Ecosystem to provide interoperable networking services, Ribbon is able to offer its CSP customers carrier grade NFV solutions that combine Ribbon's reliable VNFs with Wind River Titanium Cloud software.