blueplanet
a division of ciena

Data Sheet

BLUE PLANET
Network Orchestration Software

WALKER AND ASSOCIATES INC

Network Transformation Starts with Software

Network operators are beginning to transform their networks. The move to more open, programmable, and automated networks is now viewed as a necessity to meet the evolving needs of end-customers, who have grown increasingly accustomed to the agility and flexibility provided by the cloud. This transformation starts with software, which serves as the engine that is driving network operators' ability to create differentiated new services, improve operational efficiency, and compete more effectively.

Ciena's Blue Planet is a modular network virtualization and service orchestration platform that simplifies the creation, automation and delivery of services from end-to-end across physical and virtual domains. In doing so, it provides a programmable software platform that allows network operators to transform and expand their businesses by accelerating service agility and reducing operational costs.

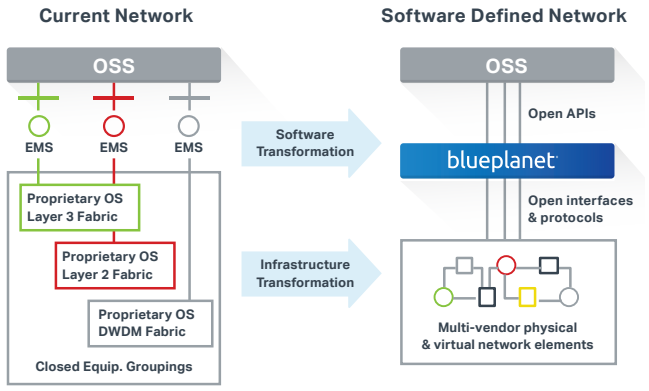

Figure 1. Blue Planet supports network operators' transformation to a more open, automated and programmable infrastructure

Unlike solutions from large vendors that make network transformation complex and inefficient by combining multiple monolithic applications designed for specific technology domains—such as the data center, WAN, and NFV cloud—Blue Planet facilitates a vendor-agnostic and modular approach to automating the network service lifecycle in multi-domain environments. Beyond eliminating technology silos, this gives network operators more freedom to use the best-of-breed (physical and virtual) network components of their choice, and allows them to focus on delivering services instead of managing appliances.

Features and Benefits

- *Simplifies the transformation to more open and programmable networks with a modular, vendor-agnostic platform*
- *Automates end-to-end service delivery across physical and virtual domains*
- *Enables operational transformation through increased service agility and reduced vendor lock-in*
- *Extensible to support multiple SDN, NFV and service orchestration use cases*
- *Allows rapid customization and self-service programmability with micro-services architecture and advanced modeling*
- *Is supported by the Blue Orbit Ecosystem and Software Professional Services*

Blue Planet Overview

Blue Planet leverages an advanced software architecture and open design to deliver a single comprehensive platform that can be tailored to meet customers' Software-Defined Networking (SDN), Network Functions Virtualization (NFV), and service orchestration use cases.

This modular and extensible approach enables network operators to automate the lifecycle of differentiated new

services that can be deployed across multi-vendor and multi-domain environments, and scaled on demand. The result is a dramatic transformation of not just how services are delivered, but how networks are operated.

Blue Planet serves four primary use cases to meet our customers' business and operational requirements:

- **Multi-Domain Service Orchestration (MDSO):** End-to-end service automation and orchestration across multiple technology (physical or virtual) and vendor domains
- **NFV Orchestration:** Vendor-agnostic Virtual Network Function (VNF) instantiation, service chaining, and lifecycle management across one or more data centers
- **Open Network Operating System (ONOS):** Commercial-grade open-source SDN controller optimized for data center and central office re-architected as a data center (CORD) network domains
- **SDN Management and Control:** Fault, Configuration, Accounting, Performance, Security (FCAPS) management and control of multi-vendor and multi-layer physical network elements

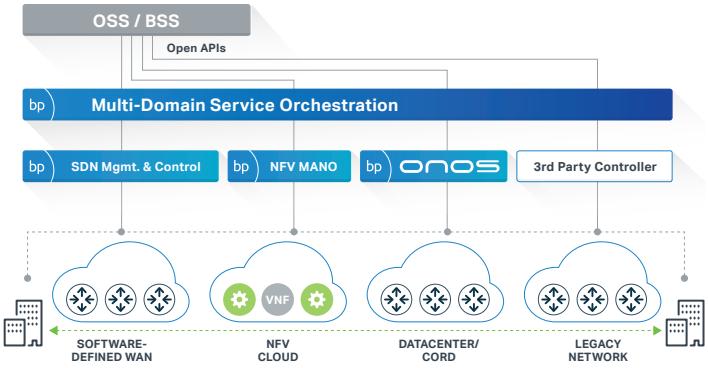

Figure 2. Blue Planet serves four primary use cases to meet our customers' business and operational requirements

Blue Planet Software Architecture

Blue Planet leverages a container-based micro-services architecture and incorporates advanced modeling, templating, and orchestration methodologies. Together, these architectural building blocks provide a scalable software platform that is:

- **Customizable:** Tailored suites of micro-services enable Blue Planet to support different use cases, with each component able to be deployed and scaled independently of the others
- **Open and multi-domain:** Open northbound and southbound APIs/interfaces enable control of heterogeneous networks, including different physical and virtual technology (or vendor) domains, to enable end-to-end service orchestration
- **Data- and model-driven:** TOSCA-based service templating and hierarchical modeling enable self-service programmability to streamline the on-boarding of physical and virtual resources and increase service velocity

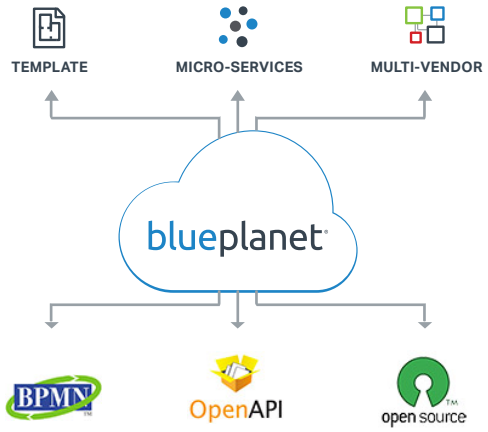

Figure 3. Blue Planet incorporates the latest software advancements to enable operational transformation, web scale, and self-service programmability

Blue Planet is purpose-built for network operators. By reducing the operational complexity and cost associated with orchestrating services from end to end across different vendor and technology domains, Blue Planet eliminates silos and allows operators to more efficiently align the network with the needs of different applications. Already field-proven and deployed with more than 150 customers worldwide, including large carriers and web 2.0 providers, Blue Planet is an essential component for network operators' transformation to more open, agile, and automated networks.

A Commitment to Openness

Blue Planet, which aligns with Ciena's OPn® Architecture, incorporates over 15 open source technologies to enable network virtualization use cases for our customers. From Docker containers, to ONOS and TOSCA-based service templates, Ciena is continuously looking for open source elements that add capabilities to its software and user-friendly functionality. In addition, Blue Planet provides a suite of open northbound APIs that provide programmatic control for managing services and streamlining network operations. The APIs are used for robust OSS/BSS integration, building customer-facing, self-service Web portals, and other applications that utilize the network as a programmable resource. Open southbound interfaces and Resource Adapters (RAs) enable Blue Planet to communicate with, control, and/or manage a wide array of multi-vendor network functions (physical, virtual, or whole domains) using a variety of protocols and interfaces including CLI, OpenFlow, TL1, NETCONF/YANG, and others.

Blue Orbit SDN and NFV Ecosystem

The first partnership program of its kind, the Blue Orbit Ecosystem represents a group of like-minded, best-of-breed vendors dedicated to accelerating real-world SDN and NFV deployments. Blue Orbit partners are collectively focused on delivering disaggregated hardware and software solutions that enable operators to adopt a multi-vendor approach to building next-generation networks.

BLUE PLANET NETWORK ORCHESTRATION SOFTWARE BROCHURE DOWNLOAD

Building on the openness of the Blue Planet software, Blue Orbit companies are organized as Virtual Network Functions Partners, Physical Network Element Partners, and Virtual Infrastructure Partners. New Blue Orbit partners are added regularly.

Software Professional Services

With SDN and NFV, network operators now have more choice in how they design and build their networks. A real-world implementation typically involves integrating a number of new technology elements and vendors to create a cohesive end-to-end offering.

Ciena offers a suite of Software Professional Services to guide operators through network transformation, and the adoption of SDN and NFV, to achieve increased service agility, improved network performance, and greater operational efficiencies.

Technical Specifications

The Blue Planet platform can be hosted on a dedicated hardware appliance, or run in a Virtual Machine (VM) environment. Recommended hardware requirements are provided below for base and high-performance deployment options. Sizing should be based on the number of network nodes and/or VNFs to be managed and orchestrated.

Blue Planet Base Requirements

- 12 CPU cores
- 48GB memory
- 300GB disk space
- 1 Gb/s Ethernet network connection

Blue Planet High-Performance Requirements

- 32 CPU cores
- 256GB memory
- 1TB disk space
- 10 Gb/s Ethernet network connection

These requirements should be increased 3x for high-availability environments.

** Contact Ciena for additional information about sizing your Blue Planet deployments.*

CONNECT WITH A NETWORK SPECIALIST