blueplanet®

DATA SHEET

Blue Planet Analytics

AI-powered intelligence accelerates business outcomes

Network providers can unlock the true value of their greatest investment—the network—and maximize their return. The fast-evolving network may be complex, but it contains a wealth of information that, if harnessed correctly, will enable network providers to maintain their competitive edge. An effective analytics solution allows providers to focus on priorities like:

- Ensuring network resources are always available to drive dynamic and intelligent provisioning
- Anticipating potential network and service disruptions before they happen and quickly identifying the source of the problem
- Planning and optimizing network capacity accurately to meet both current and future service demand

Ciena's Blue Planet® Analytics (BPA) is an open and extensible analytics platform that provides advanced network analytics by leveraging innovations in Artificial Intelligence (AI) and machine learning. It is designed for today's complex multi-vendor networks, allowing seamless functional and application extensibility to address network and operational concerns. The platform enables a wide variety of AI-powered analytics applications, supporting multiple network layers, domains, and vendor equipment to facilitate collection of data that provides the deepest levels of actionable network insights. The BPA platform and its applications provide the intelligence behind the Adaptive Network™—a network capable of dynamically self-optimizing and self-configuring based on real-time demands and pressures. They help accelerate on-demand service deployments, offer superior customer experiences in services, and help providers maximize their ROI by significantly reducing operational and capital cost structures.

With BPA, network providers can:

- Build a strong foundation toward the Adaptive Network by integrating with orchestration, domain control, and policy systems
- Invest in analytics projects that provide greater ROI, leveraging Ciena Specialist Services for business and financial modeling of the network provider's situation

Features and Benefits

- Simplifies data collection and processing across multiple network layers and domains, supporting multivendor, physical, and virtual networks using Blue Planet Resource Adapter (RA) technology
- Processes data in real-time, offering computational scale by integrating with leading data cluster platforms in on- and off-premises deployments
- Drives intelligent, closed-loop automation and adaptive optimization by integrating with policy subsystems, orchestration, and domain managers
- Provides non-disruptive functional extensibility through microservices-based architecture
- Enables self-programmability and enriched support through the Blue Planet DevOps Toolkit and DevOps Exchange

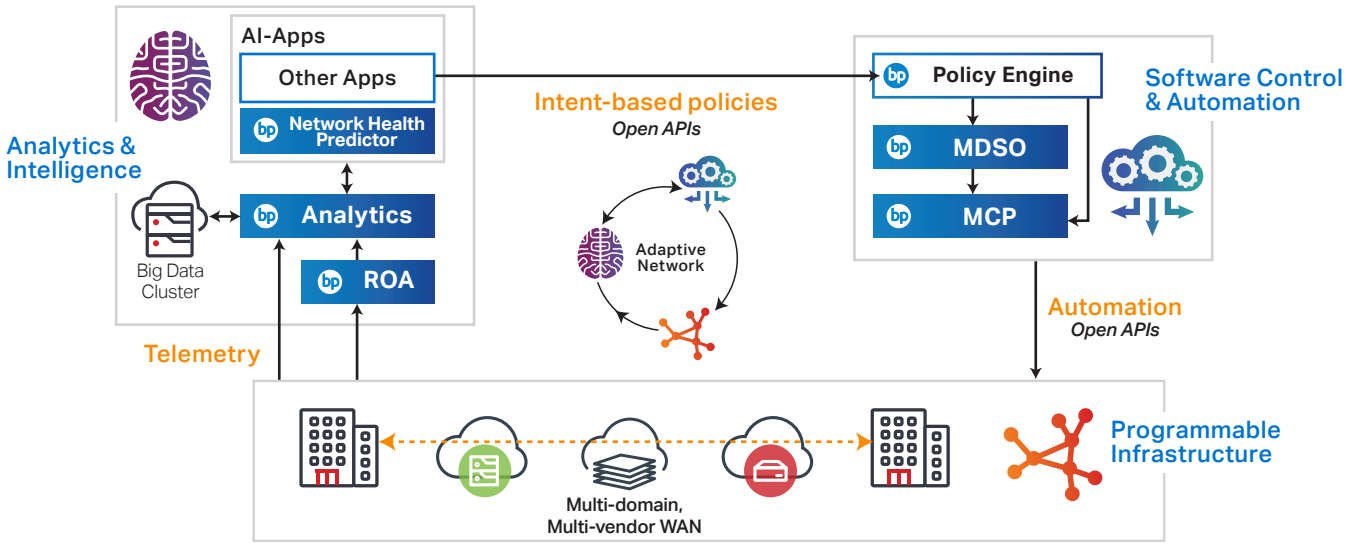

Figure 1. Combined Blue Planet MDSO, BPA, and AI-powered applications drive closed-loop automation across multivendor, multidomain, and multilayer networks. Blue Planet MCP and ROA play domain-specific roles.

- Deploy, operationalize, and extend analytics capabilities with confidence by working with Ciena's professional services team dedicated to each specific project

BPA is part of Blue Planet's software suite, offered together as a solution with Blue Planet's Multi-Domain Service Orchestration (MDSO). The solution helps network providers derive maximum business value resulting from the products' combined capabilities—that is, AI-powered intelligence and the ability to take action via orchestration based on intelligence and insight. The solution can also combine with Blue Planet's Manage, Control and Plan software, optimized for control and management of Ciena's packet-optical networks, and Blue Planet's Route Optimization and Assurance (ROA) software for insight from IP/MPLS network domains. In this way, Blue Planet provides a comprehensive multilayer solution for intelligent, closed-loop network automation for driving self-configuration and optimization.

Architecture optimized for advanced analytics

BPA enables a two-tier architecture, designed for large-scale cluster computing and analytics. The platform is responsible for collecting and normalizing data that are exposed to and consumed by the applications for the purpose of formulating specific actions to be taken by the policy-driven actionable systems. It collects and processes multisource data in near-real time and leverages Blue Planet's RA technology for data collection from multivendor network elements and systems. In addition to gathering data from the optical, packet, and IP network elements and virtual network appliances, it can also collect data from OSS/BSS, domain managers, and even external systems and files.

Because the core data management functionality is handled by BPA platform, application developers can place their focus toward business and operational issues rather than on data infrastructure concerns (Figure 2). The solution integrates with third-party big data clusters like Hadoop, Cloudera, and Hortonworks. On the data management side, BPA provides an administrative interface that enables operators to easily view and simply manage datasets and their related schemas.

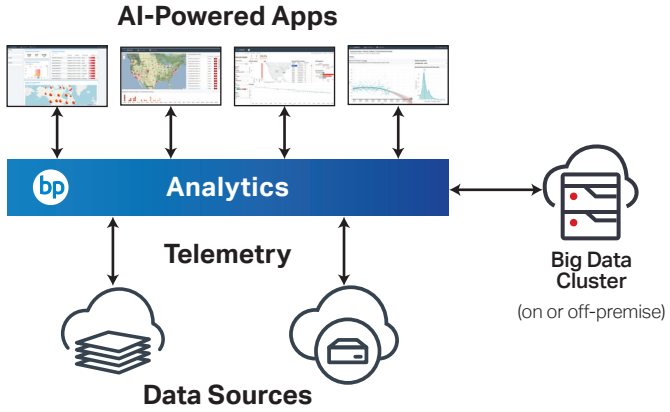

Figure 2. BPA's two-tier architecture separating applications from data management enables developers to shift their focus toward solving business problems

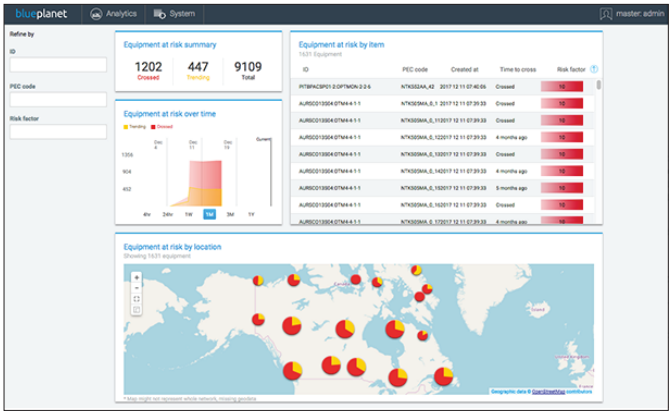

Figure 3. NHP identifies data trends and assesses the probability of network failures that can impact services

The AI-powered analytics applications are offered as part of the solution, but can be developed by the network provider or third parties using the Blue Planet DevOps toolkit. BPA supports the latest advances in Artificial Intelligence to enable applications that inform, predict, and steer operators in the right direction to address problems. A library of machine learning algorithms is supplied as part of the solution for supporting these capabilities.

At the analytics application level, operators receive an intuitive, unified interface that allows them to quickly visualize the most relevant information, which helps them maintain 'control' of the automation being programmed into the network (Figure 3).

Combining these features and capabilities with the Blue Planet MDSO and Blue Planet Policy Subsystem allows the automated execution of configurable actions to take place after a defined condition is met. Policies are configured through a REST API, and are stored in a policy database.

The Adaptive Network

The Adaptive Network is Ciena's vision of a new target end-state for network providers. Utilizing automation guided by analytics and intent-based policies, the Adaptive Network rapidly scales, self-configures, and self-optimizes by constantly assessing network pressures and demands. The Adaptive Network is built upon three foundational elements: Programmable Infrastructure, Analytics & Intelligence, and Software Control & Automation. Ciena's Blue Planet Analytics provides the robust framework that underpins Analytics & Intelligence.

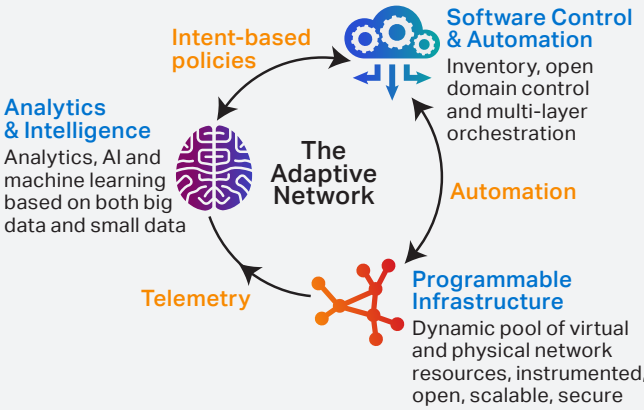

Figure 4. The foundational elements of the Adaptive Network

Applications addressing key network provider challenges

The goal of analytics applications is to help improve and accelerate network providers' business outcomes, specifically around providing outstanding customer experiences, with the aim of eliminating customer churn and expanding customer bases, while enabling them to maximize the utilization of assets and reduce operational costs. BPA supports a wide range of use cases that span infrastructure, network, services and applications analytics. These applications are aimed at meeting specific business and operational objectives such as improving end-user QoE and network assurance with root-cause identification.

Blue Planet NHP is an example of an infrastructure analytics application available today. NHP uses predictive analytics and machine learning to pinpoint network ports at high risk of failure, before they actually happen. In doing so, network providers can take proactive action to avoid service interruption from occurring altogether.

Blue Planet NHP
Dive deeper

Deployment and operationalization

Ciena provides business case modeling services to help customers ensure any investments in analytics projects align with their business goals and objectives. Ciena also provides a world-class professional services team to back their solutions. Once the project has been committed, customers receive dedicated personnel resources to help fully operationalize the solution. The team provides continual support as new requirements arise and customers' business needs evolve.

Network providers can also take full advantage of the Blue Planet DevOps solutions that enable self-programmability. The DevOps toolkit is designed to bring IT and operations teams together to facilitate and accelerate deployment of network analytics and the Adaptive Network. Customers can choose to extend or expand functionality on their own (such as developing a RA to onboard a new data source). Blue Planet's DevOps Exchange—a community designed to bring together experts from multiple fields, including data science, software engineering, storage, network operations, systems integrators, and more—provides a wealth of resources and information for network providers. More than 80 Ciena customers are currently members taking advantage of this community.

Technical specifications*

Hardware and Processor Requirements

- Core: 8 vCPUs
- Hard Disk Space: 200 GB
- RAM: 32 GB

Operating Environment

- Host Operating System: CentOS/Red Hat Enterprise Linux (RHEL) 7.2

* For high availability, deploying a minimum of two hosts is recommended. With an increase in the number of devices supported, BPA will scale horizontally to accommodate the additional load. For details, please contact your local Ciena/Blue Planet representative.

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