

GreenNet DeepAnalytics



Network Visualization and Analytics Engine

GreenNet DeepAnalytics is a powerful network analytics system based on big data architecture, providing comprehensive network visualization and analytics. It helps business decision makers to monitor network content, analyze service performance and manage security events. DeepAnalytics provides long-term data storage of network intelligence and QoE metrics, and unique experience for network quality awareness, network planning and network value mining.

BENEFITS

High Reliability

- Distributed storage of large data with low-cost general servers
- Fast detection of failures by heartbeat and automatic recovery
- Multiple copies of data and automatic restoration
- Easy node adding and data learning

Smart Traffic Analytics

- Real-time insight of bandwidth, traffic direction, app usage, illegal behaviors and security awareness.
- Easy access to rich network data analytics
- Fast dashboard customization and interactive dashboards embedded in portals
- Easy report exporting

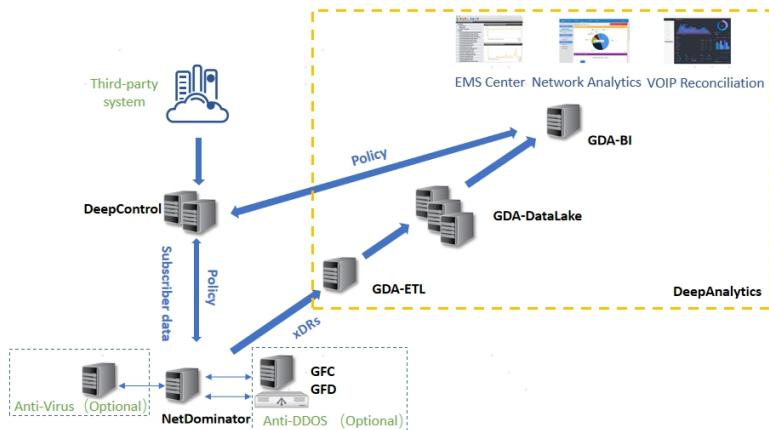
Expert Analytics Report

- Insightful and easy-to-use analytics integrated of multiple angles in various report display formats
- Intelligent report pushing with customizable frequency and methods

DeepAnalytics uses the Hadoop as the big data framework to implement log analysis and simple programming models. It is flexible to scale from one server to thousands to form a robust cluster. Therefore, DeepAnalytics can store and parallel process big data in distributed environments through computer cluster.

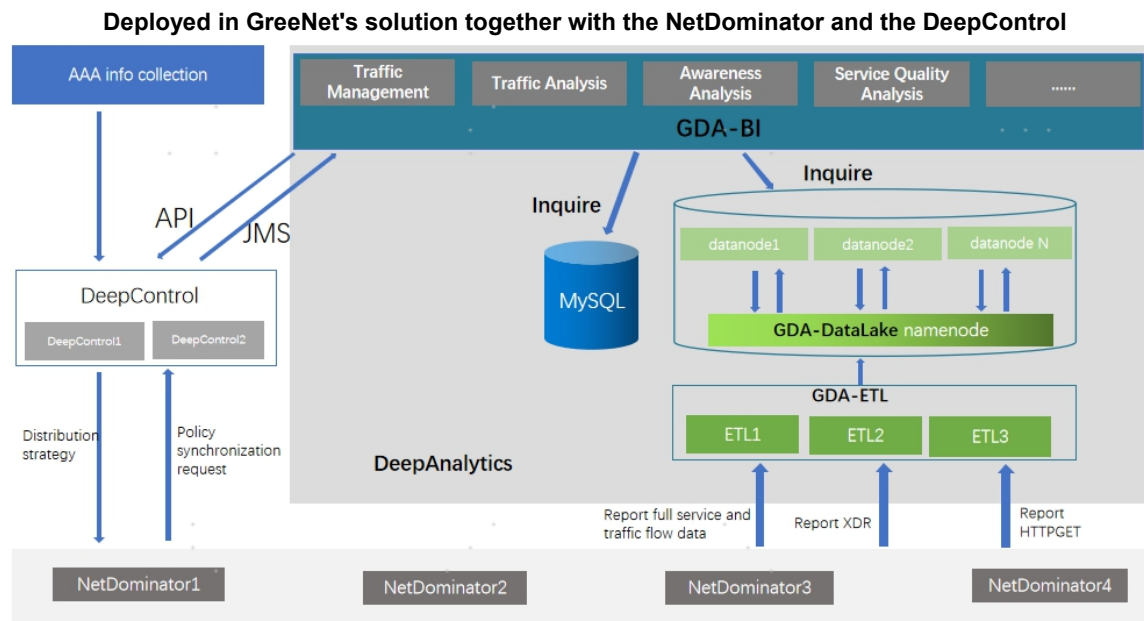
DeepAnalytics consists of:

- **GDA-ETL:** Extracts and transforms raw data from NetDominator into uniform xDR data records and provides the base data for big data platform analysis.
- **GDA-DataLake:** A general storage server adopting the Hadoop distributed file storage system (HDFS) architecture. The xDR files processed by GDA-ETL will be then stored to the multi-dimensional partitioned tables on demand.
- **GDA-BI:** A dashboard sever for device management data analysis and statistics reports, which can be accessed via Web. It provides an intuitive and graphical user interface for customers to implement control action policies according to analysis results.



Key Capabilities

- **Model setting.** Sets up report templates based on different business requirements.
- **Data storage.** Stores the original xDRs and other third-party source data, builds a distributed storage system and provides backup redundancy for data storage, file compression and data management.
- **Distributed scheduling.** Performs various distributed computing tasks, schedules distributed data based on metadata tables, assigns them to clusters for multi-dimensional analytics and outputs analytics results.
- **Association analytics and multi-dimensional statistics.** Generates various statistics reports according to requirements. Reports can be based on dimensions such as location, network element, user, APN and SP, or based on granularity such as hour, day, week and month.
- **Master-slave mode.** The master node manages data nodes and data block mapping, clients' read/write requests, policy duplication, task scheduling and database system namespace. If the Master fails, the slave takes place.



Features

Real-Time Analytics

A real-time dashboard of network traffic with 15s refresh and drill down to the application and connection level details. A real-time query engine provides accurate and visual answers to engineering and operations teams. The information can be sorted by subscriber's location, device, service, server hostname, content category, shaping priority, service category, etc.

Massive Data Storage

Signal-plane detail records, user-plane detail records, CDR, VoIPDR, security DR, logs and others data storage enable quick responses to query requests. DeepAnalytics can store data on demand and can be scaled up to PByte.

Intuitive Display

A variety of dashboards, each focusing on a specific business perspective, facilitate operators to view particular performance of the network by aggregated metrics, searching methods and network hierarchical tree. Analytics of network traffic volume, traffic direction, subscriber online behaviors and quality of experience are provided to enhance network value and realize easy management.

Traffic Analytics

Traffic analytics gives insight into the traffic, packets or data passing through a network. The entire traffic, specific traffic and application traffic analytics are supported to provide behavior analysis of specific users.

Traffic Management

Policies of blocking, releasing, redirecting, and speed limiting can be quickly created and issued to Netdominator through DeepControl. The traffic policies are based on the URL, domain name, IP address and so on.

DDoS Attack Analytics

Vulnerabilities and break-in tactics, and sensitive data can be identified. A wide range of application attacks can be isolated, intercepted and prevented to protect all network applications, users and resources .

Malware Threaten Analytics

Malicious applications such as bots, Trojans and worms can be monitored and critical events can be analyzed. This helps quickly assess malware penetration capabilities and generate detailed reports on network traffic and file activity.

Awareness Analytics

This feature defines an awareness evaluation system according to operators' standards. It provides refined analytics and improves subscribers' quality of experience (QoE).

Services Quality Analytics

Professional analytics tools are provided for operators and maintainers to locate faults. Different network interfaces and signaling procedures allows statistical analytics of failure type, time, proportion and cause.

Resource Library

Common applications, protocols, threat URLs, strategic events and other resource libraries are pre-set. GreeNet's R&D experts have summarized the identification rules by analyzing the characteristics of various data and Internet behaviors. Libraries can be customized by decision makers for policy creation, to ensure network security and improve network quality.

- **Application Library**

Thousands of common applications built-in

- **Protocol Library**

About 50 common L4-L7 protocols

- **Event Library**

Over 20 events built-in

- **Domain/SNI/URL Library**

Customization supported

- **Threat Intelligence Library**

Integration of Threat Intelligence libraries from third parties supported