

GreeNet DeepControl



Subscriber Mapping & Policy Engine

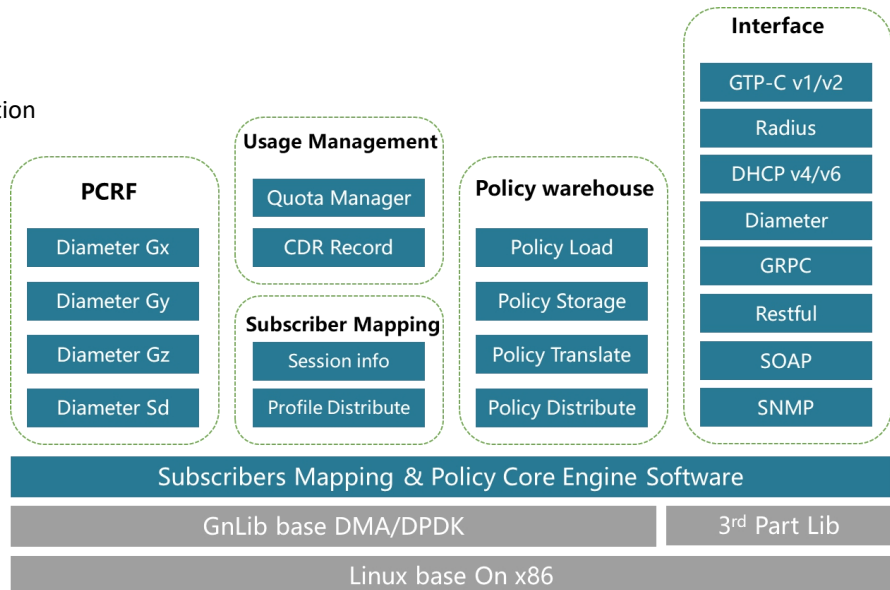
BENEFITS

- ✦ **High Reliability**
 - Advanced policies with great granularity and precision
 - Accurate mapping between an operator identifier of a subscriber and an IP address
- ✦ **Centralized Management**
 - Integrated with surrounding systems to extend subscribers, internet content and security information
 - Integrated with surrounding devices to manage business, data and alarms
- ✦ **High Availability**
 - Active-standby mode
 - Real-time synchronization

GreeNet DeepControl, as the core control node in the entire Deep Packet Inspection (DPI) system, provides a bridge between the DPI and various OSS/BSS. DeepControl is responsible for storing and distributing policies and user info mapping. It quickly caters to more policy control use cases upon your existing third-party Policy and Charging Enforcement Functions (PCEF), including Policy Servers, Packet Data Network Gateway (PGW) and other DPI devices. DeepControl can also take inputs from any Online Charging System (OCS) that supports the 3GPP Gy standard interface.

DeepControl places the policy engine on the control plane and provides required interfaces to implement network policy control solutions in any access network. It can easily translate business policies into network control policies via flexible policy scheduling.

DeepControl is a software-based solution. It runs on the x86 hardware that supports Community Enterprise Operating System (CentOS). The core engine software is deployed upon the underlying hardware and operating system. It consists of many control plane interfaces, such as Diameter and Remote Authentication Dial in User Service (RADIUS).



Key Capabilities

- **Quota Management**

Quota Manager uses the concept of a quota wheel, which maps a subscriber service plan to an associated usage cap that is either byte or time based, to limit the quota volume and manage the billing cycle (daily, weekly, monthly), accommodating as many users as possible with quotas varying from small to unlimited.
- **Subscriber Mapping**

The subscriber mapping program parses and extracts user information (session, location, device, etc.), provides a mapping between an operator identifier of a subscriber and an IP address, and distributes the mapping relationships to the NetDominator.
- **Policy and Charging Control**

Stores various policies in a centralized manner, and distributes them to NetDominator with better granularity and precision. End-to-end solutions are provided for mobile and fixed network operators to deploy a comprehensive usage measurement, subscriber communication, and policy control solutions.

Features

- **Usage-Based Services**

Volume- or time-based quotas are provided for subscribers with fair usage policies. This feature manages massive traffic in constrained networks and enhances the satisfaction and loyalty of subscribers.
- **Flexible Policy and Traffic Management**

Real-time policy control can be achieved on a per-user basis upon multiple service dimensions. Flexible policy and traffic management allows for powerful and agile handling with multiple inputs from different sources.
- **Subscriber Identification**

A subscriber can be mapped with an IP address regardless of the frequent change of a subscriber's IP addresses. This feature ensures that the appropriate policies are applied to the IP address of a specific subscriber and the user's account can be traced back to locate faults and crimes.
- **Online/Offline Charging**

A set of customizable thresholds is used to notify a subscriber, create charging records, or have policy actions applied to manage a subscriber's traffic. A subscriber's quota can be topped up to avoid overages, and the policy actions for over quota situations are provided.
- **Fault Tolerance**

The active-standby redundancy is supported. A virtual IP is shared between the active and standby servers. When the active server fails, services will be automatically switched over to the standby one. The active server synchronizes with the standby in real-time.

Specifications

		DeepControl-10K	DeepControl-30K
Capacity of signaling	Throughput	8 Gbps	16 Gbps
	Number of new connections	160000	300000
	Number of concurrent connections	1200000	2100000
Capacity of subscriber mapping	GTP-C (messages per sec)	80000	120000
	RADIUS (messages per sec)	70000	100000
	DHCP (messages per sec)	65000	80000
Policy control and charging	Gx (messages per sec)	12000	15000
	Gy (messages per sec)	23000	26000
	Sd (messages per sec)	11500	14500
Standards	Ethernet interfaces	4 ports of 10GE (SFP+)	8 ports of 10GE (SFP+)
	Management	2×10GE and 2×GE	
Network standards	Supported IP	IPv4 and IPv6	
	Supported Tunnel	MPLS/GRE/GTP/6RD/DSLITE/QINQ/802.1q	
	Supported access	FTTH/3G/4G/5G	
Physical specifications	Form factor	2U 19"	
	Dimensions	8.68 x 43.4 x 71.55 cm (3.4 x 17.08 x 28.2 in)	
	Weight	63 lbs. (28.6 kg)	
	Power	Dual Hot Plug, Redundant 100/240 V AC or -48 V DC, efficiency of up to 94%, Energy star, 80PLUS 750 W/110 0 W (-48 V)	
	Operating environment	Temperature: 10°C to 35°C (50°F to 95°F); Relative humidity: (%RH) 8% to 90%	
Standard compliance	Safety	UL60950/CE/CB	
	EMC	FCC/CE/VCCI/ICES	
	Environmental	RoHS/ China ROHS/WEEE/REACH	