EcoBalancer
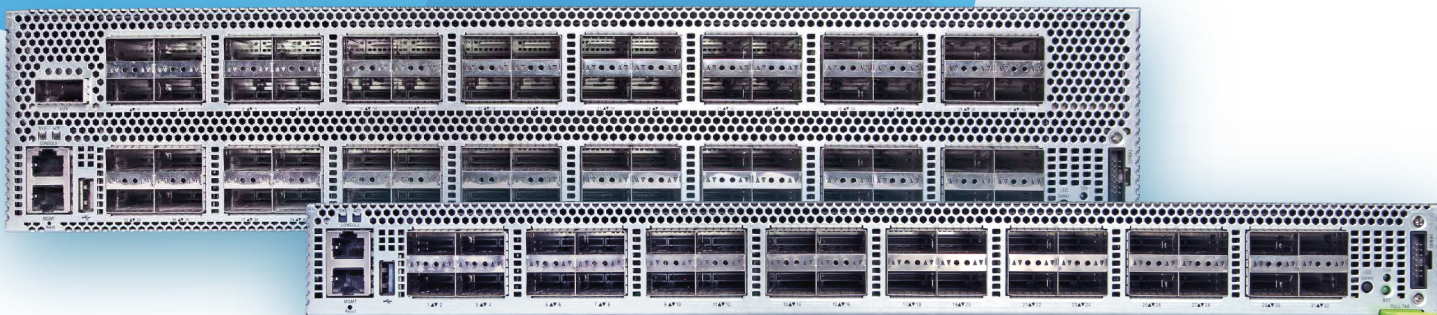
Network packet broker, Load Balancer

In many network management tasks, there is a need to redirect traffic for analysis and processing. Network packet broker is a class of devices that provide access to network traffic for analysis, monitoring, and processing systems. Consumer systems may include: URL filtering and analytics, DPI, performance and quality monitoring, security systems, etc.

RDP's EcoBalancer (Load Balancer) provides customizable batch broker and load balancer functionality.

At the heart of the EcoBalancer is a P4 programmable switch. Traffic processing at terabit speeds is provided. Various signs of L1-L4 OSI layers are used for classification: physical - ports, link, network and transport headers Ethernet / IP / TCP / UDP / ICMP.

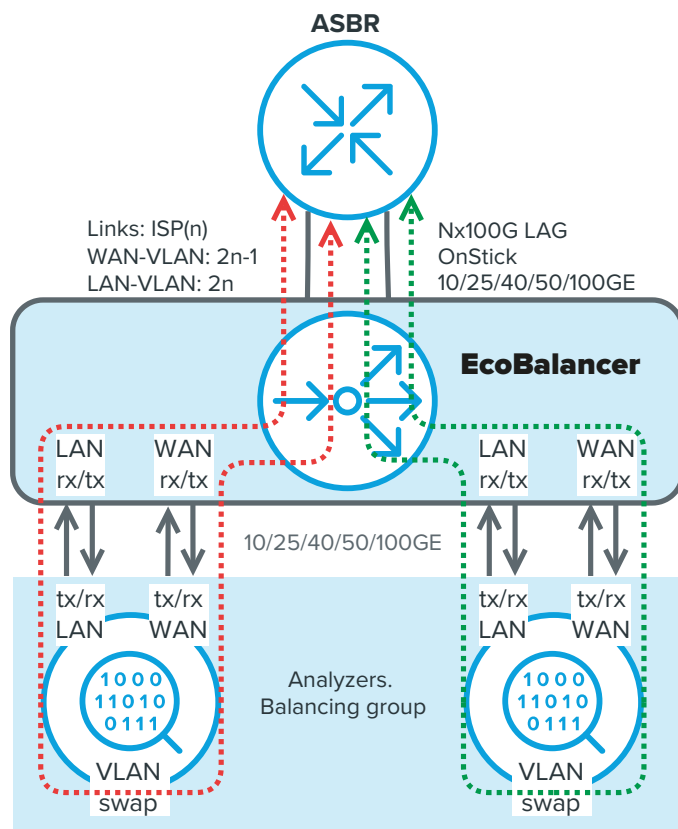## EcoBalancer capabilities and features:

- Transparent device at L2 level.

- Interfaces for external and internal connections - 10/25/40/50 / 100GE.

- Aggregation of traffic received from multiple network sources.

- Ability to connect to multiple clusters of analysis systems.

- NETCONF / YANG control.

- Options for inclusion "in the gap", OnStick, in the LAG, on the copy of the traffic. LACP support.

- Support for working with traffic within VLAN (up to 3 tags) and / or MPLS (up to 6 tags).

- Ability to create several balancing groups.

- Ability to select a hashing algorithm for balancing (layer-3, layer-4, nat-layer-3, nat-layer-4).

- Distribution of traffic between several analyzers so that Upstream and Downstream packets of one session or all traffic of one subscriber are guaranteed to pass through the same analysis system.

- Balancing traffic between individual processor cores.

- Ability to implement balancing of incoming IP packets with complex encapsulation (802.1q / MPLS / PPPoE).

- Sending keepalive packets through analysis systems to determine their health.

- Offloading analysis systems by transparently passing individual flows of transit traffic that do not require processing, for example, IP Multicast traffic.
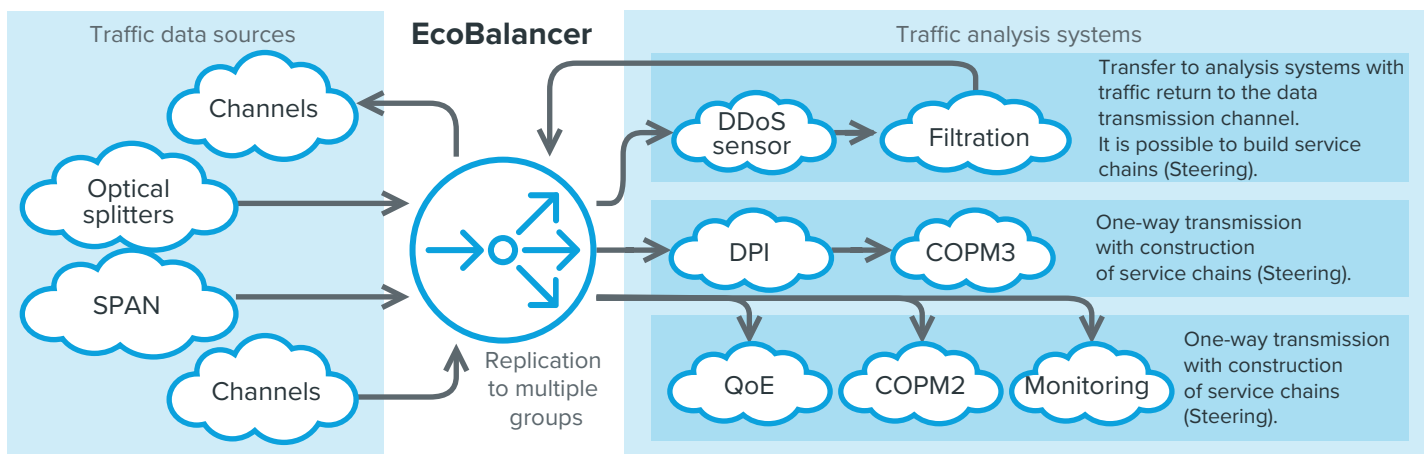
To connect to EcoBalancer traffic analysis systems, QSFP28, QSFP + optical transceivers and QSFP + ➜ 4xSFP + DAC cables can be used, depending on the types of interfaces supported by the analysis systems.

Connection example: towards the network — an aggregate of several 100G links. The direction of transmission is determined by the VLAN number: odd — from WAN, even - from LAN. EcoBalancer sends LACPDU to all unit ports towards ASBR, ensuring unit operation. At the entrance to EcoBalancer, the package is checked for integrity and classified. Part of the traffic returns to the channel bypassing the analyzers. The traffic required for analysis is evenly balanced on the analyzer devices, thus ensuring the symmetry of forward and backward traffic. To monitor the health of devices, keepalive packets are passed through the analyzers. If one of the devices fails, it is excluded from the balancing group. When all devices exit, the bypass mode is activated.

ASBR

Links: ISP(n)
WAN-VLAN: 2n-1
LAN-VLAN: 2n

Nx100G LAG
OnStick
10/25/40/50/100GE

EcoBalancer

| LAN rx/tx | WAN rx/tx | | LAN rx/tx | WAN rx/tx |

10/25/40/50/100GE

| tx/rx LAN | tx/rx WAN | | tx/rx LAN | tx/rx WAN |

1000 11010 0111

Analyzers. Balancing group

1000 11010 0111

VLAN swap

VLAN swap

EcoSwitch Series

	1020	1032	2065
Throughput	Up to 2.8 Tbps	Up to 3.2 Tbps	Up to 6.4 Tbps
Forwarding capacity	Up to 2.0 Bpps	Up to 4.7 Bpps	Up to 9.5 Bpps
Standard 19" rack mount	1U		2U
QSFP28 transceivers cages	8	32	65
SFP28 transceivers cages	48	-	-
Packet buffer	22 MB		
System memory	8GB DDR4		
SD/CF memory	SSD 8-120 GB	SSD 120 GB	
CPU	Intel Xeon D-1527	Intel Pentium D	
Serial console	1 x RJ-45		
Management port	1 x 1000BASE-T		
Redundant power supply	2 x 550W	2 x 600W	2 x 1,100W
Typical consumption with all active ports	504W	476W	1024W
Hot-swappable fans	4	5	10
Operating temperature	0 °C .. 40 °C		
Storage temperature	-40 °C .. 70 °C		
Operating humidity	5 % to 95 % non-condensing		
Operating altitude	0 to 10,000 feet		
Weight	9,5 kg	10.0 kg	14.3 kg