

Pure SDN Data Planes



CORSA PRODUCT OVERVIEW DP64xx Data Plane Family



OpenFlow Scale for Real World Networking

The Corsa DP6400 series is the industry leading data plane solution for WAN scale Software Defined Networks. Designed to drive cost and complexity out of the network, the DP6400 delivers the features that set the standard for OpenFlow data planes: full support for OpenFlow 1.3, with multiple match/action tables, deep packet buffers and fast flow-mod update capability in a fully programmable platform. Corsa's advanced implementation delivers the performance that enables OpenFlow SDN deployments to solve real world problems at scale.

Adaptive and Programmable

The Corsa architecture features a reconfigurable data path which enables the system to evolve with changing network needs and OpenFlow standards. This makes it possible to program difficult use case scenarios that might not be anticipated by the present OpenFlow protocol without needing new product releases. The result is a flexible data plane that offers full line-rate forwarding performance for any scale of OpenFlow deployment.

Corsa data planes have embedded OVS based OF 1.3+ and OVSDB SDN controller interfaces and feature ultra-fast control plane communication. An internal X86 motherboard supplies superior processing power to remove any local flow modification bottlenecks.



DP6410 10G OpenFlow Data Plane
24 x 10G OpenFlow 1.3+

OR

DP6420 10G/40G OpenFlow Data Plane
48 x 10G + 4 x 40G OpenFlow 1.3+



DP6430 100G/10G OpenFlow Data Plane
2 x 100G + 24 x 10G OpenFlow 1.3+

OR

DP6440 100G/10G OpenFlow Data Plane
4 x 100G + 24 x 10G OpenFlow 1.3+



Corsa Data Plane Overview

The Corsa DP64XX family is a series of high performance OpenFlow forwarding engines. They are designed to be flexible and programmable for multiple use cases that require OpenFlow at scale.

Corsa Scales SDN	
FLOW TABLES	>10 PROGRAMMABLE
ACTIVE FLOWS	>MILLION
FLOW MODS/SEC	>10,000
PACKET BUFFER	20GB
PORT BANDWIDTH	640GBPS
PROGRAMMABLE TTPS	YES
100G CFP2 PORTS	YES
OPENFLOW 1.3+	YES

- Multiple match/action tables:** These allow network architects to intelligently and reliably set up flow rules that implement the full scope of OpenFlow and create an optimal processing pipeline. Whether very deep with narrow fields, or shallower and wide, anywhere from one to more than 10 tables are possible with Corsa’s flexible implementation. For MAC address learning, VPN termination, or L3 forwarding, the Corsa data planes deliver on quantity and size of match action tables required.
- Handling over a million active flows:** To scale reliably, WAN applications such as BGP, IP routing and MPLS, need millions of active flows. The same is true for service aggregation in data centers, VoIP and cellular IMS systems with 100G links. The raw number of active flows supported (scale) is a result of how these flows are processed through cascaded flow tables of varying sizes (flexibility). The Corsa

DP64XX platform has a processing pipeline of variably sized tables that, depending on the required pipeline, can support over a million flows. This offers the full spectrum of scale/flexibility options and allows large-scale SDN networks to implement more flow rules and be effectively free of flow limitations.

- 10,000s of flow mods/sec:** A flow modification corresponds to entering a new flow rule into the flow tables. OpenFlow controllers in scaled deployments will need the flow mods/sec speed of the DP64XX data plane to keep pace with application demands. This is especially true in WAN aggregation, and NFV deployments, when millions of flows need to be set up or re-programmed in the case of link or device failure in large service provider or enterprise networks.
- Large packet buffers:** 20GB of packet buffer can be configured as a shared pool or in a fixed per port configuration. This means large-scale, high bandwidth WAN applications can survive transients and fast failover recovery.
- Non-blocking line-rate performance:** DP64XX data planes can handle packet flows at wire speed on all ports to provide throughput of 640Gbps of bidirectional bandwidth.
- OpenFlow 1.3:** Full-featured OF 1.3 support, including packet-in / packet-out for implementation of Control Protocols.
- Flexible pipeline:** OpenFlow requires tremendous flexibility built-in to the hardware data plane. Corsa has implemented a platform that performs optimally in a broad range of applications, including router bypass/replacement, BGP gateway, and WAN aggregation. By offering multiple levels of programmatic control to the application, Corsa’s pipeline can be fine-tuned for a specific use.