Junos Application Aware

Product Overview

Profitably delivering advanced broadband services to mobile and residential customers requires tight control over network resources, even as services grow in complexity. In order to make sound network investments, maintain regulatory compliance, and streamline business operations, service providers need reliable information about how the network is utilized and what applications are being. To meet this need, Junos Application Aware extends the ability to identify applications and take specific actions on them with award-winning Juniper Networks MX Series 3D Universal Edge Routers integration.

Product Description

As new technologies and new applications are developed, service providers are challenged to maintain network control and avoid threats and vulnerabilities. Gaining detailed insight into the applications in use on the network is critical for ensuring quality of service (QoS), security, and planning processes that drive network upgrades and investments; however, it can be very difficult to efficiently collect that information. Traditional routing elements examine Layer 3 IP address information, and largely ignore Layer 4 through Layer 7 (L4-L7) information that can identify an application based on a variety of criteria.

Juniper Networks helps service providers overcome these challenges by offering Junos® Application Aware as a fully integrated optional feature on Juniper Networks® MX Series 3D Universal Edge Routers. Junos Application Aware is based on deep packet inspection (DPI) functions that provide the stateful detection, identification, and analysis of application-layer traffic (L4-L7) on a per subscriber, per session basis.

Junos Application Aware uses stateful monitoring to provide comprehensive details of application-layer traffic patterns and statistics that service providers can use to support revenue-generating mobile and residential broadband services. From a services perspective, Junos Application Aware in combination with Junos Subscriber Aware and Junos Policy Control can identify and enforce premium class services, ensure adherence to service-level agreements, maintain subscriber fairness, and align network resources to application requirements. Product managers can also use this information to design new revenue-generating differentiated service offerings.

Architecture and Key Components

Junos Policy Control

When combined with Junos Application Aware and Junos Subscriber Aware, Junos Policy Control provides dynamic policy and online charging capabilities. Junos Policy Control enables a Gx Diameter interface towards the Policy Charging and Rules Function (PCRF) following the Traffic Detection Function (TDF) model in Third-Generation Partnership Project (3GPP) LTE networks.

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Junos Subscriber Aware identifies the subscriber's association with a flow and classifies traffic based on subscriber privilege, permitting differentiated services based on subscriber policy:

- Dynamically redirects new flows to subscriber identification engine and checks subscriber identity for a policy match
- Configures forwarding plane to forward, rate limit, mark, or drop packets associated with flow based on policy
- Can be used with Junos Application Aware to correlate application usage with subscriber identity

MX Series 3D Universal Edge Routers Portfolio

The MX Series portfolio of Ethernet services routers is the industry leader for carrier Ethernet capacity, density, and performance. Optimized for emerging Ethernet network architectures and services, the MX Series is purpose-built for the most demanding carrier and enterprise applications, and it leverages Juniper Networks Junos operating system to enable carriers and enterprises to seamlessly and cost-effectively deploy Ethernet and accelerate their next-generation network deployments. By combining a best-in-class hardware platform with the reliability and service flexibility of Junos OS, the MX Series delivers a combination of features and capabilities previously unattainable in carrier Ethernet deployments.

Multiservices Cards (MS-MPC)

MS-MPCs are next-generation, advanced service modules for the MX Series. They deliver the performance, services, and scalability that are critical to today's advanced Ethernet services edge and broadband edge networks. MS-MPCs are full slot modules that supply hardware acceleration for an array of packet processing-intensive services for the MX2020, MX2010, MX960, MX480, and MX240 3D Universal Edge Routers.

In addition to supporting Junos Application Aware, Junos Subscriber Aware, and Junos Policy Control, these cards offer flexible support for stateful firewall, Network Address Translation (NAT), IPsec, anomaly detection, flow monitoring and accounting, and tunnel services. This wide array of services enables service providers and enterprises to secure their network infrastructure; collect rich statistics for billing, capacity planning, and security purposes; and create new services, all with a single module.

Features and Benefits
Service Integration

Junos Application Aware is integrated with a wide variety of Junos OS software protocols and applications, such as Junos Subscriber Aware, Junos Network Secure, Junos VPN Secure, Junos Address Aware, and Junos Traffic Vision, to name just a few. These Junos OS services can be layered to create an enhanced, customized service experience; for example, the tight coupling of Junos Application Aware and Junos Subscriber Aware enables granular per subscriber application identification, analysis, control, and reporting, as well as the invocation of policy-based network modification (bandwidth, QoS) based on the dynamically identified presence of an application/subscriber combination. Tight integration with MPLS provides all of the benefits of IP-layer awareness.

Integration with Juniper Networks SRC Series Session and Resource Control Modules will provide call admission control (CAC) and traffic engineering based on true network awareness. It will permit the dynamic modification of system and network resources in response to real-time changes in the application mix, ensuring the quality of video and voice applications—even as subscribers consume other services over the same physical connection. Additionally, policies restricting subscribers or applications to a maximum number of multicast groups or maximum bandwidth can be created to protect downstream facility bandwidth from oversubscription, while flow- and port-based rate shaping policies can be enforced to deliver an assured traffic rate that is independent of line and service speed.

Specifications and Approvals

For a complete list of supported software features, please consult the Junos OS software documentation at www.juniper. net/techpubs/software/.

Juniper Networks Services and Support

Juniper Networks is the leader in performance-enabling services that are designed to accelerate, extend, and optimize your high-performance network. Our services allow you to maximize operational efficiency while reducing costs and minimizing risk, achieving a faster time to value for your network. Juniper Networks ensures operational excellence by optimizing the network to maintain required levels of performance, reliability, and availability. For more details, please visit www.juniper.net/us/en/products-services.

Ordering Information

Model Number	Name
JAPAW	Junos Application Aware
JPC	Junos Policy Control
JSUB	Junos Subscriber Aware
MS-MPC-128G	MS-MPC with 128 GB of memory (32 GB per NPU); occupies a single slot in MX2020, MX2010, MX960, MX480, and MX240 3D Universal Edge Routers

About Juniper Networks

Juniper Networks is in the business of network innovation. From devices to data centers, from consumers to cloud providers, Juniper Networks delivers the software, silicon and systems that transform the experience and economics of networking. The company serves customers and partners worldwide. Additional information can be found at www.juniper.net.

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