

# Junos Video Focus

## Product Overview

Delivering video over carrier-scale IP networks is complicated, and network issues can easily diminish a consumer's video experience. While network operators use specialized appliances to monitor video quality, this approach is expensive to deploy, and manually intensive to operate.

Juniper Networks overcomes the limitations of traditional video monitoring approaches with Junos Video Focus, a standards-based solution that fully integrates with the MX Series 3D and Junos OS. This innovative solution provides the scale and automation needed to cost-effectively identify and avoid network issues before they impact the customer's viewing experience.

## Product Description

Delivering managed video over an IP network is quite complex—encoders are used to format, compress, and packetize the video stream before encapsulating it in IP for forwarding over the network. The video must then traverse multiple different network layers, elements, and media before it is decoded for viewing at the customer premise. A myriad of issues can occur that negatively impact viewing quality, including packet loss and jitter.

Typically, network operators use highly skilled technicians and specialized appliances to identify and troubleshoot video-specific problems, but it is prohibitively expensive to deploy probes at every point in the network that the video traverses. Probes also consume precious space and power resources, and getting video traffic to the probes imposes additional operational complexity, like port mirroring. Furthermore, the costly deep MPEG analysis capabilities available on probes are largely wasted, as MPEG formatted video is encrypted for transport across the network.

Juniper Networks® Junos® Video Focus for the Juniper Networks MX Series 3D Universal Edge Router overcomes these limitations. Deployed inline on the programmable Junos Trio chipset, Junos Video Focus can be broadly implemented without adding the cost and complexity imposed by specialized video probes. It utilizes IETF RFC 4445 Media Delivery Index (MDI) as well as MPEG and RTP header analysis to assess video quality, triggering alarms when configurable delay, loss, and jitter thresholds are exceeded to alert you to problems before they impact your customers. Custom scripts can be created to allow automated network reconfiguration when thresholds are exceeded, proactively preventing impairments from impacting video quality and user experience.

## Architecture and Key Components

Junos Video Focus is a licensed application that runs inline on programmable Junos Trio chipset-based MX Series platforms and Modular Port Concentrators (MPCs) for Juniper Networks MX240, MX480, MX960, MX2010, and MX2020 Universal Edge Routers. No span ports, dedicated service cards, or additional video-specific probes are required.

To ensure maximum efficiency and scale, only video streams are monitored as they traverse the network, Junos Video Focus monitors and assesses video quality at the ingress and egress ports, using RFC 4445 MDI to measure Delay Factor (DF), Media Loss Rate (MLR), and Media Rate Variation (MRV). Junos Video Focus also analyzes MPEG headers for CRC errors, and to identify the specific video streams impacted by network issues.

## Features and Benefits

Feature	Benefit
Advanced capabilities	<ul style="list-style-type: none"> <li>Assures accurate video quality assessment via industry standard RFC 4445 MDI to measure Delay Factor (DF), Media Loss Rate (MLR), Media Rate Variation (MRV)</li> <li>Provides header monitoring with dynamic RTP or native MPEG stream detection</li> <li>Offers bidirectional visibility into video streams, capturing detailed statistics that enhances troubleshooting and reduces time to repair</li> <li>Customization: supports automatic switching between primary and back-up video streams when impairments are detected and thresholds are exceeded, based on custom scripts</li> </ul>
Router integration	<ul style="list-style-type: none"> <li>Protects space and power resources: no need for dozens or hundreds of appliances</li> <li>Preserves expensive router slots and ports, runs inline on the Junos Trio chipset</li> <li>Improves operations:               <ul style="list-style-type: none"> <li>Single OS to qualify and maintain, single release train for feature enhancements</li> <li>Single management system for routing and video monitoring; opportunity to correlate network issues with service-layer impacts</li> </ul> </li> <li>Offers high performance: no impact to router forwarding</li> </ul>
Simple and efficient	<ul style="list-style-type: none"> <li>Simplifies network design: no span ports required or additional design complexity</li> <li>Reduces risk: added to MX Series platforms via software license</li> <li>Increases capital efficiency: no dedicated cards or probes</li> <li>Increases operational efficiency: no additional probes or service cards to spare, no additional operating systems to maintain, no additional vendors to manage</li> <li>Simplifies configuration and reduces burden on technical staff               <ul style="list-style-type: none"> <li>Wildcards enable broad classification of traffic</li> <li>Templates simplify configuration</li> </ul> </li> <li>Delivers industry-leading video monitoring performance</li> <li>Provides high scale: only selected video streams are monitored, all other traffic bypasses video quality analysis</li> </ul>

## Specifications

- Provides IETF RFC 4445, Media Delivery Index (MDI) monitoring on ingress and egress interfaces for compressed and uncompressed Standard Definition (SD) and High Definition (HD) unicast and multicast video
- Supports priority 1 elements of ETSI TR101: Digital Video Broadcasting (DVB); measurement guidelines for DVB systems
- Provides automatic detection of native MPEG and RTP, and support for MPEG2-TS and MPEG4-TS, over UDP and RTP
- Offers support for constant bit rate (CBR) traffic per SMPTE specification for both SPTS and MPTS

## 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 net-

work to maintain required levels of performance, reliability, and availability. For more details, please visit [www.juniper.net/us/en/products-services](http://www.juniper.net/us/en/products-services).

## Ordering Information

Model Number	Name
JVF-VM-1G	Enables 1Gbps of inline video monitoring
JVF-VM-5G	Enables 5Gbps of inline video monitoring

Junos Video Focus is implemented on the MX5, MX10, MX40, MX80, MX104 Universal Edge Routers, and MPCs for the MX240, MX480, MX960, MX2010, and MX2020—each sold separately.

## 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](http://www.juniper.net).

Corporate and Sales Headquarters  
 Juniper Networks, Inc.  
 1133 Innovation Way  
 Sunnyvale, CA 94089 USA  
 Phone: 888.JUNIPER (888.586.4737)  
 or +1.408.745.2000  
 Fax: +1.408.745.2100  
[www.juniper.net](http://www.juniper.net)

APAC and EMEA Headquarters  
 Juniper Networks International B.V.  
 Boeing Avenue 240  
 1119 PZ Schiphol-Rijk  
 Amsterdam, The Netherlands  
 Phone: +31.0.207.125.700  
 Fax: +31.0.207.125.701

Copyright 2014 Juniper Networks, Inc. All rights reserved. Juniper Networks, the Juniper Networks logo, Junos and QFabric are registered trademarks of Juniper Networks, Inc. in the United States and other countries. All other trademarks, service marks, registered marks, or registered service marks are the property of their respective owners. Juniper Networks assumes no responsibility for any inaccuracies in this document. Juniper Networks reserves the right to change, modify, transfer, or otherwise revise this publication without notice.

**JUNIPER**  
 NETWORKS