

LiveAction Visualization, Management, and Control for Cisco IWAN Overview

Overview

Cisco® Intelligent WAN (IWAN) delivers an uncompromised user experience over any connection, whether that connection is Multiprotocol Label Switching (MPLS) or Internet. The savings from IWAN not only pays for the branch-office infrastructure investments, but can also free resources for new, innovative business services. IT can quickly roll out bandwidth-intensive applications such as video, virtual desktop infrastructure (VDI), and guest Wi-Fi with lower costs and a great user experience.

LiveAction is application-aware network management software with quality-of-service (QoS) control, designed to simplify network management. LiveAction features an innovative visual display, real-time big data analytics, and deep control of routers and switches for unparalleled ease of network administration. At a high level, LiveAction has the following See-Point-Click-Fix features:

- **See:** Visualization
 - Visualize real-time end-to-end network traffic.
 - Examine historical QoS, flow, routing, and IP service-level agreement (SLA) data.
- **Point:** Decision making
 - Analyze hop-by-hop path, devices, interfaces, and queues.
 - Locate and troubleshoot problems.
- **Click:** Control
 - Enable and deploy QoS, Network-Based Application Recognition (NBAR), Flexible NetFlow (FNF), Cisco Application Visibility and Control (AVC), and Cisco Medianet.
 - Create IP SLA probes and Media Services Interface (MSI) endpoints.
- **Fix:** Improve
 - Edit QoS policies, access control lists (ACLs), Cisco Policy-Based Routing (PBR), and IP SLA.

LiveAction is a Cisco recommended management platform for IWAN. It provides GUI-based management and situational awareness for intelligent path control and application performance optimization. LiveAction Release 4.1, the latest release, supports Cisco Performance Routing Version 3 (PfRv3). Specifically, LiveAction offers the following IWAN management functions:

- PfR path control visualization, reporting, and configuration
- AVC visualization, reporting, and configuration
- QoS monitoring and configuration
- PfR dashboard and network health status

PfR Path Control Visualization, Reporting, and Configuration

LiveAction visualizes traffic paths and performance before and after any path changes are made by PfR, so customers can better realize the IWAN return on investment (ROI). In particular, when PfR makes a path change to protect the applications because of an Out-of-Policy (OOP) condition, LiveAction renders the end-to-end path changes graphically from the branch-office master controller or border router through the service provider(s) to the data center where the applications reside, providing more meaningful and actionable information than the standard PfR command-line interface (CLI) outputs. Furthermore, LiveAction shows what OOP condition (for example, delay, loss, or jitter) triggered the path changes and provides specific reporting on those triggers. LiveAction also displays the application traffic associated with those path changes. LiveAction supports full Network Configuration and Change Management (NCCM) functions, which include PfR, Dynamic Multipoint VPN (DMVPN), and other IWAN configurations through CLI templates that can be pushed to groups of devices.

Application Optimization

Intelligent path control not only lowers WAN cost and makes full use of all WAN bandwidth, it also increases application availability and improves application performance by routing around carrier black holes or brown-outs as well as selecting the per-application best path based on real-time measurements of delay, loss, and jitter. Cisco IWAN includes AVC statistics to track and report application flows and performance. With AVC, the flows to an application server can be measured from end to end, giving the network a higher level of application awareness. Using LiveAction, you move directly from the high network visibility provided by AVC to remedy the problems AVC identifies in monitored traffic classes and flows. For example, you can use LiveAction to identify and analyze unwanted applications on the network that are affecting critical business traffic. The feature-rich QoS configuration functions of LiveAction can then be used to mitigate the offending traffic by means of a policing policy incorporating the Cisco NBAR classification.

The end-to-end AVC flow visualization of LiveAction across the network topology can be very useful to ensure that appropriate traffic markings and priority are carried through the network and across service provider clouds. LiveAction also graphically displays response-time statistics and the breakdown of network, server, and application delays provided by AVC. In addition, LiveAction allows you to configure AVC alerts to increase visibility of network delay or retransmission events. When these configurable thresholds are exceeded, LiveAction generates alerts, enabling network administrators to be notified and take appropriate actions.

LiveAction features a dashboard that provides Top-N application performance as well as a series of detailed AVC reports for application performance analysis and troubleshooting. For example, when a user experiences degradation of critical business application performance due to a file-sharing application using most of the WAN-edge bandwidth, LiveAction can quickly visualize the abnormal traffic pattern, troubleshoot, and resolve the performance problem that affects this user. The unique graphical LiveAction QoS configurator then allows the network administrator to adjust the QoS policy through simple points and clicks and apply it to the interface to throttle down the file-sharing traffic in a matter of minutes. Even more useful is the fact that you can then validate the new QoS settings by looking at traffic flows after the changes have been made to ensure application performance returns to normal. LiveAction also has a “Revert” function to back off QoS changes at a click of a button.

QoS Monitoring and Configuration

Cisco IWAN value propositions are centered on optimizing WAN bandwidth and improving application performance. Yet these benefits need to be summarized visually to readily prove their value. With its unique end-to-end visualization capabilities, LiveAction increases the IWAN value by helping customers see and optimize IWAN network performance more clearly and immediately.

Part of understanding and improving application performance is the ability to efficiently monitor and configure QoS. Through its QoS congestion indicator visualization and performance tracking, LiveAction provides extensive analyses and makes it easy for IT engineers to fully understand QoS behaviors on their networks. LiveAction provides proactive QoS monitoring that detects and alerts on critical policy drops before end users report problems. Its real-time QoS graphical reporting at intervals as short as 10 seconds enables quick validation of policy changes. The LiveAction push-button policy and performance audit report analyzes QoS configurations for errors and performance problems and details this information in an easy-to-navigate report.

LiveAction graphical QoS configurator empowers IT engineers of all experience levels to create, edit, and implement highly effective QoS policies on live networks with complete ease and confidence. LiveAction has deep QoS expertise built in based on extensive research of the features, functions, and idiosyncrasies of Cisco devices. With LiveAction, QoS configurations can be created from the beginning or using Cisco best-practice templates with hundreds of device-specific rules and guidelines. After QoS policies have been created, they can be immediately deployed or scheduled on multiple devices or interfaces. For example, LiveAction can create and manage QoS policies on DMVPN tunnel endpoints and then apply them to tunnel interfaces. Each policy can then be assigned to the desired Next Hop Resolution Protocol (NHRP) tunnel interface. Working in conjunction with AVC and NBAR2, LiveAction allows full NBAR2 QoS control on Cisco routers both on a per-application level and at the higher group level. Thus, network engineers can take advantage of the Cisco NBAR2 grouping feature and LiveAction QoS graphical configurator to vastly reduce the complexity and verbosity of the router configuration.

PfR Dashboard and Network Health Status

LiveAction provides overall PfR and network health status for IWAN management including but not limited to:

- PfR dashboard for a quick glance of how PfR performs in rerouting traffic or protecting applications
- Network discovery and network topology
- End-to-end flow visualization
- Networkwide audits of QoS policies
- Network monitoring using NetFlow, IP Flow Information Export (IPFIX), Simple Network Management Protocol (SNMP), and routing and LAN statistics
- Threshold-crossing alert processing
- Dashboard and at-a-glance color-coded status for top application performance, site performance, networking device CPU and memory usage, link usage, and interface up or down
- Top QoS conditions on interfaces, links, and Layer 2 devices: Drops and congestions
- Top applications by volumes, top countries where traffic is coming from or going to, etc.

LiveAction IWAN Management Benefits

LiveAction provides the following significant benefits to customers for IWAN implementation:

- Savings in time and money
 - Faster IWAN troubleshooting
 - Easier justification of IWAN ROI

- Facilitation of IWAN adoption
 - Visual demonstration of Cisco IWAN improvements in performance and availability
 - End-to-end IWAN management solution
- Increased productivity
 - Deep understanding of application traffic with end-to-end flow visibility
 - Ability to find and fix problems faster with graphical QoS control and bulk configuration
 - Robust IWAN reporting
- Ease of operations
 - Clear visualization of path changes
 - Intuitive GUI for faster deployment, configuration, monitoring, and troubleshooting

LiveAction Specifications

LiveAction Release 4.1 provides PfRv3 support and is built on a three-tier architecture with clients, servers, and nodes. Nodes discover network devices, ingest flow and SNMP data, and extend configuration capabilities in a distributed environment by allowing for horizontal scaling of LiveAction. In addition, the clients and servers have been enhanced for massive scalability.

Client Application

The client application can be run through the web directly from the LiveAction web server or installed as a 64-bit client application for Windows or Mac.

Server

LiveAction server runs on a Windows Server or virtual machine. The LiveAction server has a built-in collection node and is fully usable without any additional installations.

Node

The node provides the ability to add additional collection and other capabilities and helps scale horizontally by providing additional processing. The node runs on Linux and communicates to the central LiveAction server.

Customers can choose the following LiveAction deployment scenarios:

- **Single server:** The single-server deployment of LiveAction consists of installing the server on a Windows Server or virtual machine. Because the LiveAction server has a built-in collection node, it is fully usable without any additional installations.
- **Distributed deployment:** In distributed deployments, a single server is deployed as usual but additional nodes can be implemented and associated to the server.
- **Virtual machine:** Servers and nodes can be deployed on a virtual machine as long as the performance requirements for compute, store, and network are met.

The use and location of additional nodes are based on three criteria:

- Performance:
 - Off load performance to another node.

- Location
 - Place node near devices being polled.
 - Place node at a branch-office site so data is not polled across the WAN to the data center where the server exists.
- Security
 - Place node for different security zone or demilitarized zone (DMZ).
 - Node(s) will initiate communication from security zone to server.
 - If communication is lost, the server or node may re-initiate communication.

For LiveAction 4.1 performance and recommended hardware configurations, please refer to the LiveAction user guide.

Ordering Information

LiveAction is a SolutionsPlus partner, and LiveAction IWAN Management software is available on the Cisco Global Price List (GPL) as listed in Tables 1 through 4. You can combine multiple licenses to reach the desired number of devices to be managed. For example, to manage 700 devices, purchase a 500-device license and two 100-device licenses.

Note: LiveAction is neither sold nor supported in China.

LiveAction Enterprise

- LiveAction multinode, multiuser, unlimited historical data, full-function features with flow, QoS monitor, QoS configure, routing, IP SLA, and LAN modules are included.
- In this configuration, routing includes PBR; visualization of Virtual Route Forwarding (VRF), routing, and adjacency tables; and next-hop route tracing. IP SLA includes IP SLA dashboard, GUI-based IP SLA test generation, visualization of IP SLA test status, and all IP SLA reports. LAN functions include Layer 2 QoS monitoring, LAN path visualization, and Spanning Tree Protocol (STP) visualization.

Table 1: LiveAction Enterprise Ordering Information

Cisco PIDS	LiveAction Enterprise, Perpetual License
L-SP-LA-E-25-K9=	LiveAction Enterprise Perpetual License, 25 managed devices, unlimited historical, multi-node, multi-user
L-SP-LA-E-50-K9=	LiveAction Enterprise Perpetual License, 50 managed devices, unlimited historical, multi-node, multi-user
L-SP-LA-E-100-K9=	LiveAction Enterprise Perpetual License, 100 managed devices, unlimited historical, multi-node, multi-user
L-SP-LA-E-500-K9=	LiveAction Enterprise Perpetual License, 500 managed devices, unlimited historical, multi-node, multi-user
L-SP-LA-E-1K-K9=	LiveAction Enterprise Perpetual License, 1K managed devices, unlimited historical, multi-node, multi-user
L-SP-LA-E-2.5K-K9=	LiveAction Enterprise Perpetual License, 2.5K managed devices, unlimited historical, multi-node, multi-user
L-SP-LA-E-5K-K9=	LiveAction Enterprise Perpetual License, 5K managed devices, unlimited historical, multi-node, multi-user

LiveAction WAN

This configuration includes LiveAction multiserver, multiuser, rolling 14 days of historical data with flow, QoS monitor, QoS configure, and routing (Table 2).

Table 2: LiveAction WAN Ordering Information

Cisco PIDS	LiveAction Enterprise, Perpetual License
L-SP-LA-W-25-K9=	LiveAction WAN Perpetual License, 25 managed devices, 14-day historical, multi-node, multi-user
L-SP-LA-W-50-K9=	LiveAction WAN Perpetual License, 50 managed devices, 14-day historical, multi-node, multi-user
L-SP-LA-W-100-K9=	LiveAction WAN Perpetual License, 100 managed devices, 14-day historical, multi-node, multi-user
L-SP-LA-W-500-K9=	LiveAction WAN Perpetual License, 500 managed devices, 14-day historical, multi-node, multi-user
L-SP-LA-U-1K-K9=	LiveAction WAN Perpetual License, 1K managed devices, 14-day historical, multi-node, multi-user
L-SP-LA-U-2.5K-K9=	LiveAction WAN Perpetual License, 2.5K managed devices, 14-day historical, multi-node, multi-user
L-SP-LA-U-5K-K9=	LiveAction WAN Perpetual License, 5K managed devices, 14-day historical, multi-node, multi-user

LiveAction Professional

This configuration includes LiveAction for small and medium-sized businesses (SMBs), single-server, single-user, 5 days of historical data with flow, QoS monitors, QoS configure, routing, IP SLA, and LAN modules. Up to 200 devices can be managed for this single-server LiveAction Professional version. For more than 200 devices on a single server, please use the multiserver licenses listed in Table 3.

Table 3: LiveAction Professional Ordering Information

Cisco PIDS	LiveAction Professional (for SMB)
L-SP-LA-P-25-K9=	LiveAction SMB Perpetual License, 25 managed devices, 5-day historical, single-user, single-server

Table 4: Upgrade from LiveAction WAN to LiveAction Enterprise

Cisco PIDS	Upgrade from LiveAction WAN to LiveAction Enterprise
L-SP-LA-U-25-K9=	Upgrade from WAN to Enterprise, 25 managed devices
L-SP-LA-U-50-K9=	Upgrade from WAN to Enterprise, 50 managed devices
L-SP-LA-U-100-K9=	Upgrade from WAN to Enterprise, 100 managed devices
L-SP-LA-U-500-K9=	Upgrade from WAN to Enterprise, 500 managed devices
L-SP-LA-U-1K-K9=	Upgrade from WAN to Enterprise, 1K managed devices
L-SP-LA-U-2.5K-K9=	Upgrade from WAN to Enterprise, 2.5K managed devices
L-SP-LA-U-5K-K9=	Upgrade from WAN to Enterprise, 5K managed devices



Technical Support

Technical support for LiveAction IWAN Management software is provided by LiveAction 24 hours a day through a support maintenance contract, which you can purchase through a reseller or directly from LiveAction at <http://www.liveaction.com/go/solutionsplus/iwan>.

For more information about Cisco IWAN and LiveAction IWAN Management, please visit: <http://www.cisco.com/go/iwan> and <http://www.liveaction.com/solutions/iwan>.

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