

Spirent AION

Spirent TestCenter Routing and Switching Bundle

Overview

Spirent AION is a flexible delivery platform that enables users to achieve improved deployment and provisioning for all their cloud and network testing needs. It is designed to deliver ultimate flexibility in how Spirent TestCenter platforms are purchased and utilized.

The extended platform combines a wealth of industry-leading test solutions with a flexible licensing architecture to support a wide range of next-generation solution-based domain applications.

AION offers a centralized management hub to help leverage software and hardware functionalities across all lab users and locations for a simplified management and decision-making process:

- **Flexible purchasing options** available via subscription, consumption-based, and perpetual plans, with the ability to license different bandwidth, scale, and protocol bundles.
- **Flexible deployment options** offered include cloud-delivery, on-prem, and laptop-hosted licensing services.

Enhanced user serviceability delivers always-on platform services from auto-discovery and inventory management to user and workspace administration, notifications, and log aggregation.

Routing and Switching Bundle

Spirent TestCenter Routing and Switching Bundle is a comprehensive protocol package that includes Unicast Routing, Multicast Routing, Switching and MPLS Technologies, enabling Network Equipment Manufacturers, Service Providers and Enterprises to quickly evaluate and troubleshoot routing functionality, performance and scalability of any routing device or network. Users expose the true performance of a router/switch by stress testing the routing software, data forwarding hardware, and the overall system architecture under both static and dynamic routing conditions.

Unicast Routing protocols in this package help users address the challenge of quickly verifying complex features and applications for enterprise, metro and core routers. The package includes emulation for IPv4 and IPv6 interior and exterior gateway routing protocols (OSPFv2/v3, ISISv4/v6, BGP-4, BGP+, and MP-BGP), with the ability to emulate a wide variety of realistic and worst-case conditions and provide performance measurements.

Multicast Routing protocols in this package help quickly evaluate and troubleshoot Multicast Routing protocols, forwarding behavior, and performance in devices and networks. This package supports emulation of the most common multicast routing protocols, PIM-SM and PIM-SSM for IPv4 and IPv6 Multicast traffic.

MPLS Technologies offered in this package work with the Unicast Routing and Multicast Routing protocols, to emulate LDP and RSVP-TE sessions to test performance and scalability of any MPLS-enabled LSR device or network with traffic engineering or VPN technologies by stress testing the routing, label lookup, binding, and forwarding operations under dynamically changing conditions. This package includes MPLS-TP as well to test IP/MPLS and MPLS-TP interoperability scenarios.

- **Real World Network Topologies**—emulate real world networks and evaluate key performance parameters of routers or networks under typical or extreme traffic load conditions for minutes, hours and days
- **Network/Service Reliability**—verify scale, reliability, performance of Layer 2 & 3 services including data, multicast, and video delivered via unicast routing, multicast routing, switching, and MPLS VPN technologies
- **Increase Productivity**—test and configuration wizards allow quick setup; capture functionality, protocol events and live status views make troubleshooting easy with TestCenter IQ and help save time
- **Cost-Effective Solution**—complete routing protocol emulation suite in a single, affordable package
- **Trusted Partner**—benefit from decades of testing experience with Spirent as your guide through a world of complex testing

BFD Protocol Emulation works with other routing/MPLS protocols to communicate link and protocol state transitions, allowing users to view protocol performance during network events such as session, route, link flap events or network over-subscription. Protocol dependent BFD configuration is automatic with single-click activation. In Control Plane Independent mode, static BFD sessions can be created independent of routing sessions for static or policy routing functional protocol testing, and protocol scale testing.

This bundle is an integrated component of Spirent TestCenter and works with other Spirent TestCenter components to deliver easy, consistent TCL and Perl scripting API and Command Sequencer NoCode automation. Routing and Switching Bundle protocols can also be combined with Access or Segment Routing control-plane over routing/MPLS topology with stateful or stateless data-plane traffic.

Features and Benefits

- Support for dual-stack IPv4 and IPv6 in all routing emulation and traffic generation allows users to test the migration of routed networks from IPv4 to IPv6 under realistic deployment scenarios
- Validate scalability and protocol functionality in the same test by running multiple protocols concurrently on each port
- Quickly emulate large and complex routing/MPLS topologies running broadband access protocols, Carrier Ethernet protocols, or stateful application-layer protocols from a single application interface
- BGP Route Import functionality allows users to import millions of real internet routes for IPv4 and IPv6
- Integrated data-plane traffic enables users to send, receive, inspect, and accumulate statistics at wire-rate; this allows users to test data-plane router convergence and network high availability features like BFD and Graceful Restart; users can also monitor the real time effects that router configurations have on traffic and QoS classes
- Using advanced multi-threading architecture and RouterBlock support, user can scale number of sessions or route scale with multi-dimension
- PWE wizard takes the complexity out of single and multi-segment PWE emulation testing with FEC128/129, PW status signaling, control word and helps tests any mobile backhaul configuration including pseudo-wire redundancy
- Multicast VPN wizard builds GRE-based Rosen-style VPNs. Including Unicast routing, PIM routing, routes, Multicast groups, GRE encapsulated traffic and optional Unicast labeled traffic
- Point-to-Multipoint TE (P2MP-TE) wizard quickly builds any of the five most common P2MP-TE topologies (ingress, transit, branch, bud or leaf), complete with Unicast routing, routes, RSVP sessions, LSPs, sub-LSPs and RSVP options, including the new SERO object and support for OSPF and IS-IS-TE
- RSVP-TE FRR wizard and emulation helps to test high availability and topology convergence. Options include P2P and P2MP make-before-break feature to test reroute and ERO route optimization
- Use the Command Sequencer with TCL scripts to send SNMP commands, get SNMP data, configure the device under test, run entire test and generate pass/fail results; advanced command sequencer capabilities allow users to extend Spirent TestCenter to meet their test needs

Technical Specifications

Parameter	Description
Unicast Routing	
OSPF	OSPFv2, OSPFv3
BGP	BGP-4, BGP+, and MP-BGP, BGP Route Import for IPv4 and IPv6
IS-IS	ISIS v4/v6
RIP	RIPv1, RIPv2, RIPng
LISP	Locator Identifier Separation Protocol
Multicast Routing	
PIM	PIM SM, PIM SSM Full Bootstrap Router (BSR) emulation
BIER	OSPF BIER, ISIS BIER, BGP BIER
MSDP	Multicast Source Discovery Protocol
MPLS and VPN Technologies	
LDP	LDPv4/v6, Pseudowire Emulation Edge-to-Edge (PWE3), FEC 128, FEC 129, MLDP P2MP
RSVP-TE	RSVP-TE integration with OSPF and ISIS, RSVP P2MP Make Before Break, ERO and Fast Reroute, Bidirectional LSP, GMPLS
VPN	MPLS IP VPN (RFC 2547bis) for IPv4, 6VPE or 6PE for IPv6, BGP-VPLS, LDP VPLS
Multicast VPN	GRE based Multicast VPN Next Generation Multicast VPN <ul style="list-style-type: none"> • Ingress Replication • RSVP P2MP • MLDP
MPLS-TP	MPLS-TP Static, MPLS-TP BFD, MPLS-TP Y.1731, MPTS-TP Protection Switching, MPTS-TP Performance Monitoring
Connectivity	
BFD	Control Plane Independent and Protocol Dependent, Integrated with Unicast Routing and MPLS protocols, GenTX mode for high performance (3.33ms interval), Micro-BFD for LAG, BFD for MPLS LSP
Spanning Tree	STP/RSTP/PVST+, MSTP (Up to 64 MSTI)
Link Aggregation	
LACP	IEEE 802.3 AD
LAG	Port Grouping
Multi-homing	Active/Stand-by, Active/Active (BGP)
Convergence	
Unicast Routing Convergence	Data Plane based Convergence Test, Advanced Control Plane Convergence Test with BGP, OSPF, ISIS, MPLS
BFD Convergence	BFD Control Plane Convergence Test for BGP, OSPF, ISIS

Ordering Information

Product Number	Description
AOL-DL-RTSW	Routing and Switching Bundle

About Spirent Communications

Spirent Communications (LSE: SPT) is a global leader with deep expertise and decades of experience in testing, assurance, analytics and security, serving developers, service providers, and enterprise networks. We help bring clarity to increasingly complex technological and business challenges. Spirent's customers have made a promise to their customers to deliver superior performance. Spirent assures that those promises are fulfilled. For more information visit: www.spirent.com

Americas 1-800-SPIRENT

+1-800-774-7368 | sales@spirent.com

Europe and the Middle East

+44 (0) 1293 767979 | emeainfo@spirent.com

Asia and the Pacific

+86-10-8518-2539 | salesasia@spirent.com