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DATASHEET

Spirent Advanced BenchmarkingApp

Application Overview

Spirent Advanced BenchmarkingApp is a web-based test application that provides an intuitive and simplified workflow. It works with current and future Spirent TestCenter products and is available on the Spirent AION platform.

The Advanced BenchmarkingApp includes ITU-T Y.1564 Ethernet Service Activation Test (Y.1564 App), which provides complete validation of Ethernet Service-Level Agreements (SLA) with Service Configuration and Service Performance test methodologies in compliance with the ITU-T Y.1564 standard.

ITU-T Y.1564 Standard Based Ethernet Service Validation

ITU-T Y.1564 is an Ethernet service activation test methodology defined by ITU-T to assess the quality of services, and network performance of Ethernet-based services.

ITU-T Y.1564 test methodology is designed to test the Ethernet service attributes including:

- Connection type (point-to-point E-LINE and point-to-multipoint E-LAN)
- Traffic parameters: QoS (including VLAN Priority Code Point, IP TOS, and DSCP), traffic type (voice, data, video), etc.
- Bandwidth profile: Committed Information Rate (CIR), Excess Information Rate (EIR), Committed Burst Size (CBS), Excess Burst Size (EBS)
- Performance criteria: Frame Loss, Frame Delay, Frame Delay Variation

There are two phases of the Y.1564 methodology, a Configuration phase and a Performance phase:

- **Configuration**: To validate that each Ethernet-based service is correctly configured. Each service is tested sequentially.
- **Performance**: To validate the quality of the services as delivered to the end user under network load over a configured duration of time. Test flows of all services are generated simultaneously at the Committed Information Rate (CIR) for a duration of 15min, 2h, or 24h, or a user-defined interval.

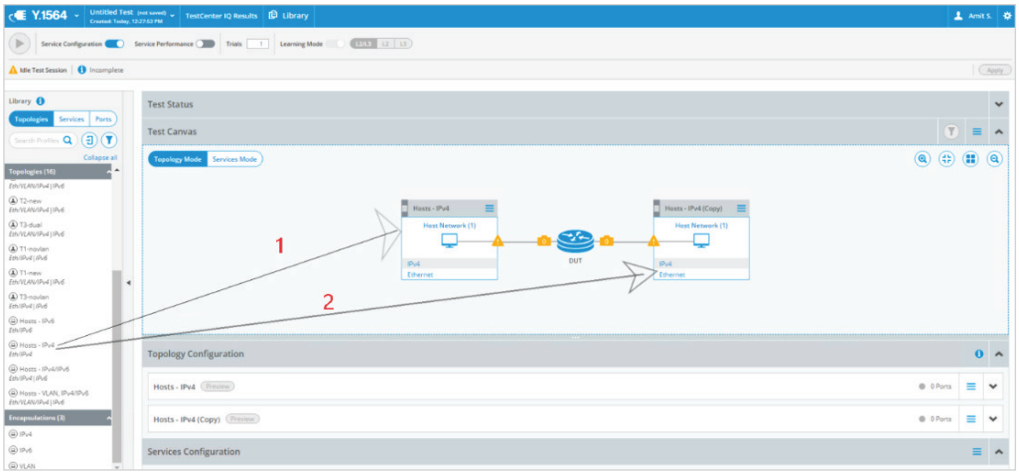
The Y.1564 App enables users to quickly configure and execute Ethernet service activation tests with a visual and simple-to-navigate workflow, and to analyze test results directly from a web browser. It provides user in-app assistance with quick tips, info boxes, and hover tips. Intelligent test results and reports are provided through Spirent TestCenter IQ web application.

- **Complete validation of Ethernet Service-Level Agreements (SLA) with Service Configuration and Service Performance test methodologies in compliance with the ITU-T Y.1564 standard**
- **Increase Productivity—**reduce time-to-test with an easy-to-use intuitive interface for configuration and fast automated execution
- **Cost-Effective Solution—**ITU-T Y.1564 Ethernet Service Activation test is bundled in the Advanced BenchmarkingApp on Spirent AION platform
- **Actionable Analytics—**get data you can act on, not just tables of results
- **Trusted Partner—**benefit from decades of testing experience with Spirent as your guide through a world of complex testing

Intuitive Workflow

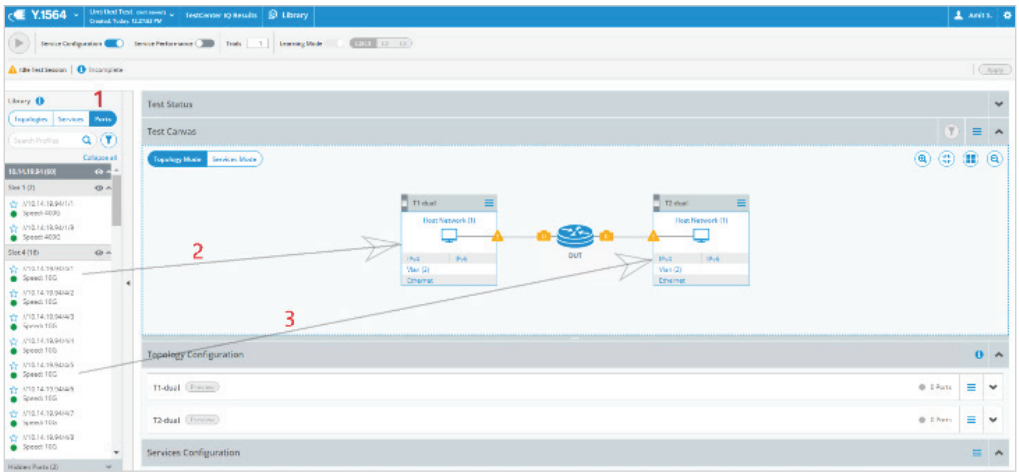
Y.1564 App provides an intuitive and simplified workflow with visual test configuration.

- Drag and drop topologies with various encapsulations from the Topologies library panel onto the test canvas to quickly build a test topology.



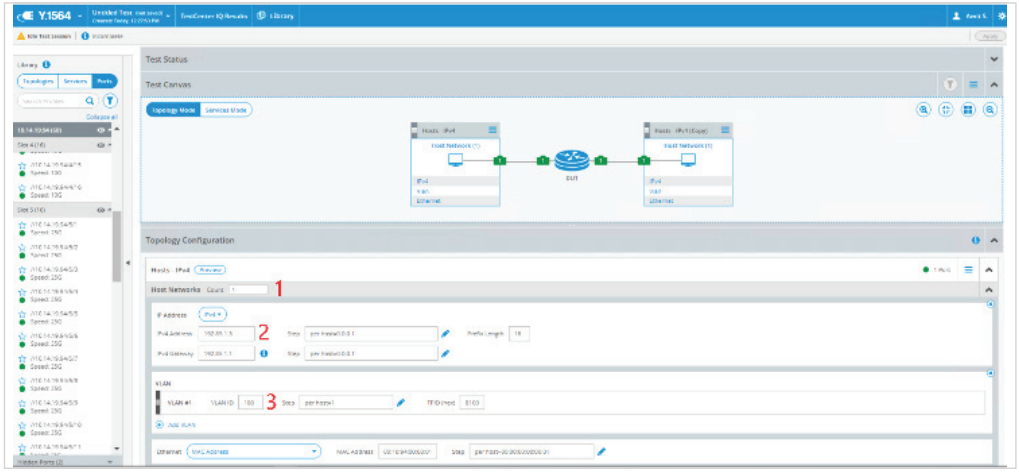
Creating test topology quickly and with ease in the Y.1564 App

- Drag and drop test ports from the Ports library panel and assign to a test topology.



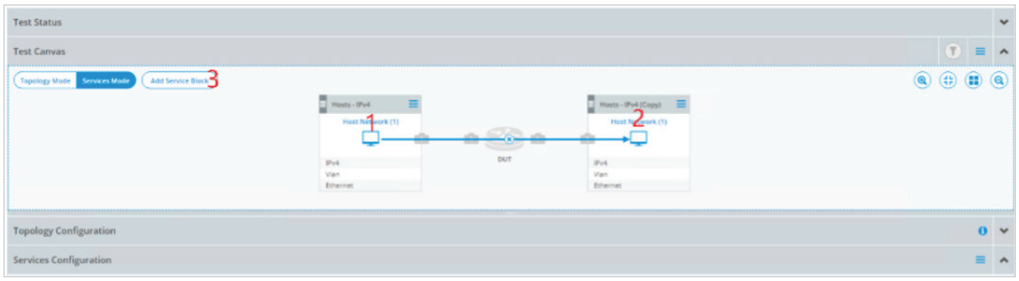
Assign Spirent TestCenter ports to the test topology in the Y.1564 App

- Click a host device block to configure the host network count, MAC/IPv4/IPv6/gateway addresses, and VLANs.



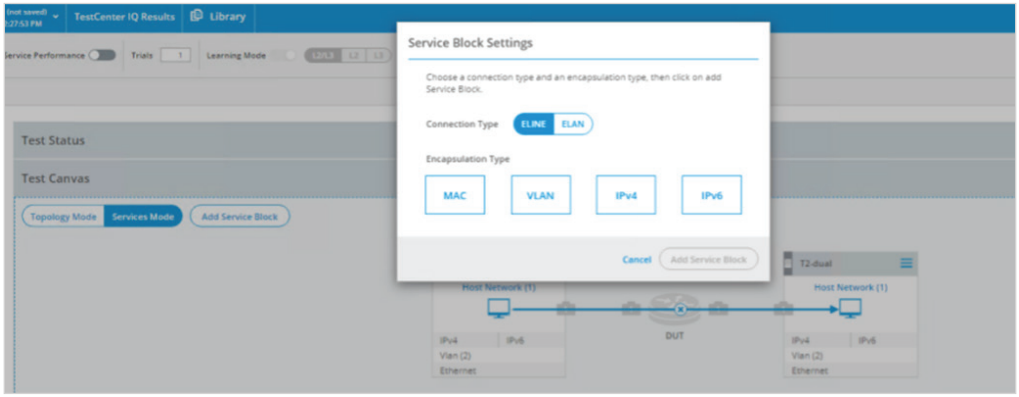
Configure host networks in the Y.1564 App

- To create unidirectional service blocks, first click a host device block, drag a line that represents the service block to another host device block, and then click the Add Service Block button.



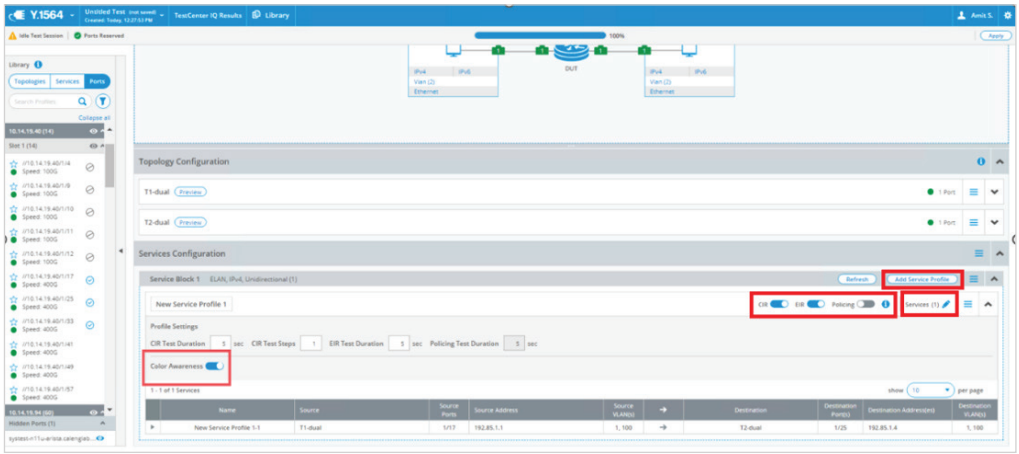
Create service block in the Y.1564 App

- In the Service Block Settings pop-up window, users can configure the connection type (point-to-point ELINE or point-to-multipoint ELAN) and encapsulation type (Ethernet, VLAN, IPv4, or IPv6) of the service block. Create bidirectional service blocks in a similar way by holding the Shift key first.



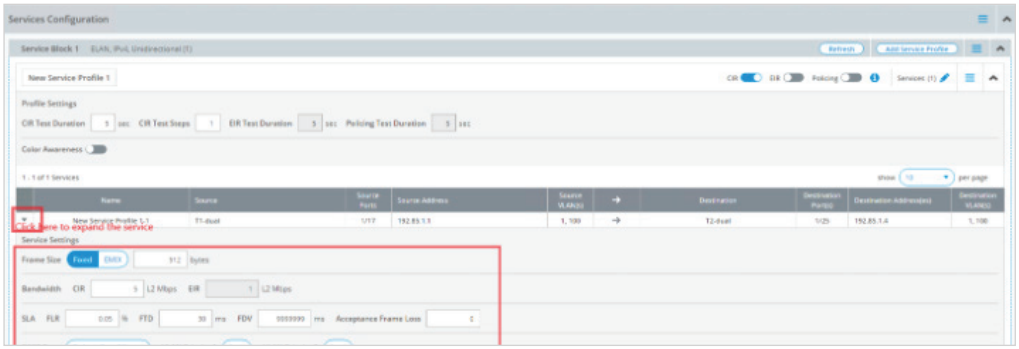
Configure service block connection type and encapsulation

- To create Service profiles under a service, click the Add Service Profile button or drag and drop service profiles from the Services library panel.
- Users can enable/disable the CIR/EIR/Policing subtests, enable/disable color aware test mode, configure test duration, and CIR Test Steps at the service profile level.
- Users can increase or decrease the number of services in a Service profile.



Create service profile. Configure sub-tests, color awareness, and number of services

- For each service, users can configure frame size (Fixed or Ethernet Mix), bandwidth (CIR and EIR in Mbps at layer 2), service acceptance criteria (SAC) parameters – FLR (in percentage), FTD (ms), FDV (ms), Acceptable frame loss (number of packets), M factor for policing test (percentage of CIR+EIR), IP TOS or DSCP value, and VLAN priorities



Configure frame size, bandwidth profile, service acceptance criteria, and QoS parameters for a service

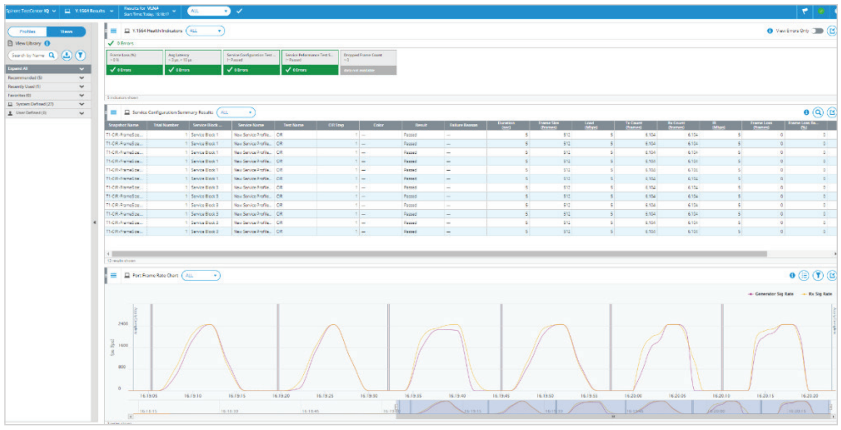
- After completing the test configuration of the topology, service blocks, service profiles, and services, users can click the Apply button to apply the configuration changes to Spirent TestCenter test ports and then click the Play button to start the tests.
- During the test execution and after test completion, users can click the TestCenter IQ Results button to launch the TestCenter IQ web application to view and analyze the test results.

Apply the configuration, run the test, and view results

Configuration steps are very flexible; when a test topology is set up, assigning ports, adding service blocks/service profiles/ services, editing the topologies, service blocks, service profiles or services can be done in any order that suits the user. Any customized topology and service profile can be saved to the library and used later in another test. The entire configuration can also be saved for later use. Users can also configure and save details of a DUT in a test and use it later. The test controls and status notifications at the top of the app always keep the user informed about test progress.

Actionable Analytics

Y.1564 App is integrated with Spirent TestCenter IQ for intelligent results analysis. Leveraging TestCenter IQ, users can quickly view and analyze measured KPIs (throughput, latency, jitter, and frame loss rate) and frame rate charts for each service. Users can also sort and filter data, and easily drill down to identify problems for a specific service under test. These capabilities dramatically simplify trouble-shooting. User-defined service acceptance criteria thresholds for health indicators help to automatically isolate and present relevant data for easy analysis.



TestCenter IQ Results for ITU-T Y.1564 Ethernet Service Activation Test

Features and Benefits

Ease of Use

- Intuitive, easy-to-use web interface to get you started quickly
- Easily configure complex ITU-T Y.1564 Ethernet service activation tests using visual topology and simple-to-navigate workflows
- Customize, save, and reuse test configurations including topology, DUT, port, and service profiles
- Intelligent test results and reports available in Spirent TestCenter IQ
- Configure, execute a test, and analyze test results directly from a web browser
- In-app user assistance provided in UI quick tips, info boxes, hover tips
- Seamless integrated experience with application, licensing, chassis/test ports (HW/virtual) management in Spirent AION platform
- Recent tests can be viewed and loaded for rerun or to check status even after closing the browser session.

Extensive Functionality

- Supports Service Configuration and Service Performance test methodologies in compliance with the ITU-T Y.1564 standard
- Complete validation of Ethernet Service-Level Agreements (SLA) in a single test
- Supports the following KPI measurements:
  - Throughput - CIR, and EIR
  - Latency - Frame Delay (FD)
  - Jitter - Frame Delay Variation (FDV)
  - Frame Loss Rate (FLR)
- In Service Configuration tests, supports the following sub-tests:
  - CIR (Simple and Step Load)
  - EIR
  - Traffic Policing
  - CBS (Committed Burst Size)
  - EBS (Excess Burst Size)
- Supports both unidirectional and bidirectional service blocks
- Supports service blocks with ELINE (point-to-point) or ELAN (point-to-multipoint) connection types
- Supports service blocks with Ethernet, VLAN, IPv4, or IPv6 encapsulation types
- Supports stacked VLAN – C-Tag (Customer Tag) and S-Tag (Service Tag)
- Supports fixed frame size and Ethernet Mix (EMIX) at service level
- Supports both color aware and non-color aware test modes at service profile level
- Supports color marking based on VLAN PCP, IP TOS, and IP DSCP
- In color aware test mode, generates green/yellow color marked traffic at the configured rates, and provides separate KPI measurements for green and yellow traffic
- Supports enable/disable CIR, EIR, or Policing sub-tests at service profile level
- Supports one-arm loopback test
- Supports up to 64 services
- In Service Performance tests, supports simultaneous validation the service acceptance criteria (SAC) of all services over time (15 min, 2h, 24h, or any duration configured by the user)

Technical Specifications

ITU-T Y.1564 Ethernet Service Activation Test (Y.1564 App)	
Key Tests	Service Configuration and Service Performance test methodologies in compliance with ITU-T Y.1564 standard • Service Configuration sub-tests: – CIR (Simple and Step Load) – EIR – Traffic Policing – CBS (Committed Burst Size) – EBS (Excess Burst Size) • Color aware and non-color aware test modes • Up to 64 services • Service Performance test - Simultaneous validation the SLAs of all the services over time (15 min, 2h, 24h, or duration configured by user) • Measure the following KPIs per service – Throughput- CIR and EIR – Latency - Frame Delay (FD) – Jitter - Frame Delay Variation (FDV) – Frame Loss Rate (FLR)
Test Configurations	*At test level:* • Enable/Disable Service Configuration or Service Performance test methodologies and configure performance test duration • Configure test trial counts • Enable/Disable and configure learning mode • Configure test topology and assign ports to test topology • Configure host network count, MAC/IPv4/IPv6/gateway addresses and VLANs • Create unidirectional or bidirectional service blocks with ELINE (point-to-point) or ELAN (point-to-multipoint) connection type and encapsulation type (Ethernet, VLAN, IPv4, or IPv6) *At service block level:* • Create service profiles *At service profile level:* • Enable/Disable sub-tests (CIR, EIR, Policing, CBS, or EBS) • Configure number of services • Configure test duration (1 to 60 seconds) and CIR step count • Enable/Disable color awareness *At service level:* • Configure frame size – Fixed, Ethernet Mix (EMIX) • Configure bandwidth profile – CIR and EIR (Mbps at layer 2) • Configure service acceptance criteria (SAC) parameters – FLR (in percentage), FTD (ms), FDV (ms), Acceptable frame loss, M factor for policing test (percentage of CIR+EIR) • Configure IP TOS or DSCP value, or VLAN priorities

Supported Platforms and Modules

Supported on most flavors of Spirent Appliances - A1-400G, DX3-400G, PX3-400G, and Test Modules - MX3-100G, FX3-100G, PX3-100G, DX3-100G, MX2/FX2-10G. Please contact your Spirent Sales Representative to find the best hardware for your testing needs.

Ordering Information

Product Number	Description
AON-PB-BM-ADV	AION BenchmarkingApp Advanced