

Spirent Communications

Spirent TestCenter Software and Hardware Release Notes 5.02

This release notes document is for the latest Spirent TestCenter software base packages, test packages, and hardware.

Note: The Known Issues list for products listed here is available as a separate document on the Spirent Knowledge Base portal. Sign in to Spirent [Customer Service Center](#) with your login credentials and search for FAQ17352.

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New Products and Features

The new products and features are described in detail in a separate document – **Spirent TestCenter Software and Hardware New Features** – the document is included as a Related Resource on the Customer Service Center (CSC) Application *Downloads* page.

The *New Features* document includes detailed descriptions of each new feature and many helpful GUI screen captures. This is a partial list of new content that is being introduced in this release.

Hardware

- C50-KIT-11AX-3

Software

Protocols

- VxLAN IPv6 underlay (initial release)
 - Add VM traffic and IRB symmetric support
- TSN Protocol
 - IEEE1588v2 Timespan view IL filtering
 - IEEE1588Enhancement: Improve 1-step accuracy via TS feedback NIC-47 10G
 - AUTOSAR Tsync Enhancements

WiFi

- Line Rate Selection in 802.11ax
 - The default line rate remains at 10G for any 802.11ax ports, and now with 1G, 2.5G and 5G line rate available to select
- Protected Management Support (PMF)
 - 802.11w (PMF) is now supported with all 802.11ac Wave-1 and Wave-2 gears and is available for both multi-client and multi-AP emulation applications.
- 802.1x Enterprise Authentications EAP-AKA/ AKA' and EAP-SIM
 - These EAP types are now supported on all 802.11ac Wave-1 and Wave-2 gears and are for both multi-client and multi-AP emulation applications.

Enhanced L4-7

- Add support on MX2-1G test modules (i.e. MX2-1G-S16, MX2-1G-S12, MX2-1G-S8)
- Add support on the following C50 kits:
 - AUTO-C50-KIT-11/12/17 and C50-KIT-11AX-3
 - Add support on LabServer
 - Add Enhanced L4-7events on TestCenter IQ chart
 - Allow single endpoint on client for application scenarios

Spirent TestCenter IQ

- Added PCEP view
- Added EVPN view

Spirent Telemetry Service

The Telemetry service allows Spirent to perform analytics of anonymous usage data in order to improve our products and services. From release 4.86 forward, telemetry will be enabled by default on all Spirent LabServer and Spirent TestCenter installations, unless users choose to opt-out.

Users are prompted for their opt-out preference via the Spirent TestCenter Windows installer and shell-based Linux installers.

Telemetry is automatically enabled or disabled on Spirent LabServer test sessions based on the opt-out preference of the client that initiated the session. This means that some users can create test sessions with telemetry enabled while others might have it disabled. However, since REST API users will not be using an automation client provided by Spirent, they can specify their opt-out preference via a new optional “AllowAnalytics” argument in the CStestSessionConnect command:

```
stc::perform CStestSessionConnect -Host $labServerIp -CreateNewTestSession TRUE -  
AllowAnalytics FALSE
```

Spirent LabServer administrators who prefer to disable telemetry for all users, regardless of their client opt-out preferences, can do so by setting the ALLOW_SPIRENT_ANALYTICS environment variable to **false**. For customers using our Virtual LabServer, this can be accomplished by logging in to the Spirent LabServer admin console, selecting “Configure Container” and then using the “Set environment variables” option:

```
[1] Configure System  
[2] Configure Container  
[3] System Information  
[4] System Status  
[5] View Journal  
[6] Shell Access  
[7] Exit  
(waiting 30 seconds) Select option [7]: 2
```

```
>>>>> Container configuration <<<<<<
```

```
[1] Load image from registry  
[2] Load image from file  
[3] Reset container  
[4] Set environment variables  
[5] Set License Server  
[6] Cancel
```

Select option: 4

>>>> Set environment variables <<<<<

Env 1: ALLOW_SPIRENT_ANALYTICS=false

Env 2:

ALLOW_SPIRENT_ANALYTICS=false

Is this correct? (y/n): y

>>>> Container configuration <<<<<

- [1] Load image from registry
- [2] Load image from file
- [3] Reset container
- [4] Set environment variables
- [5] Set License Server
- [6] Cancel
- [7] Apply change and start new container

Select option: 7

----- APPLYING CHANGES -----

Running docker image: fa59f501973c

Setting the environment variable will force a restart of the container from the current image and all existing test sessions will be torn down. To see which environment variables are set, the user can log in to the admin console, select "Shell Access" from the Admin menu and then type "echo".

Product Obsolescence

The following small form factor test modules are not supported in this Spirent TestCenter release:

CPR-1001A	Series 1000: 8 Port 10/100 Copper RJ45 Test Module
CPR-1001B	Series 1000: 8 Port 10/100 Copper RJ45 Test Module
CPR-2001A	Series 2000: 8 Port 10/100 Copper RJ45 Test Module
CPR-2001B	Series 2000: 8 Port 10/100 Copper RJ45 Test Module
CPR-2002A	Series 2000: 8 Port 10/100 Copper RJ45 Test Module
CPR-2002B	Series 2000: 8 Port 10/100 Copper RJ45 Test Module
EDM-1001A	Series 1000: 4 Port 1G Dual Media Test Module
EDM-1001B	Series 1000: 4 Port 1G Dual Media Test Module
EDM-2001A	Series 2000: 4 Port 1G Dual Media Test Module
EDM-2001B	Series 2000: 4 Port 1G Dual Media Test Module
FBR-1001A	Series 1000: 8 Port 10/100 Fiber SFP Test Module
FBR-1001B	Series 1000: 8 Port 10/100 Fiber SFP Test Module
FBR-2001A	Series 2000: 8 Port 10/100 Fiber SFP Test Module
FBR-2001B	Series 2000: 8 Port 10/100 Fiber SFP Test Module
XFP-1001A	Series 1000: 1 Port 10G XFP Test Module
XFP-1001B	Series 1000: 1 Port 10G XFP Test Module
XFP-2001A	Series 2000: 1 Port 10G XFP Test Module
XFP-2001B	Series 2000: 1 Port 10G XFP Test Module

- If you attempt to upgrade a chassis that contains one of these modules to this release, you will get an error message requesting that you remove the modules from the chassis before you install the firmware. You cannot upgrade a chassis to this release if one of these modules is in the chassis.
- If you insert one of these modules into a chassis that has already been booted with this release, the module will not boot, and it will not appear in the GUI. The status LED will illuminate, but it will be solid amber indicating the module is not booted.

Discontinuance Notifications

Discontinuance Notification – Linux in .tar.gz format

Effective June 30, 2019, Spirent no longer provides Linux downloads in .tar.gz format. Customers should use the .sh format installers. Refer to *Getting Started with Spirent TestCenter* for instructions on how to use the .sh installers.

Discontinuance Notification – all 32-bit Linux Environments

Effective at the end of December 2019, support was discontinued for Spirent TestCenter on **all** Linux 32-bit environments, including using 32-bit enabled mode on 64-bit Linux operating systems.

Customers using Spirent TestCenter on 64-bit Linux Operating Systems are encouraged to download and use “Spirent TestCenter Application, v4.XX for Linux 64-bit”.

Discontinuance Notification – Microsoft Windows 7 Support

Effective January 14, 2020, Spirent will discontinue support for Windows 7 for **all** Spirent TestCenter releases. Please move to a supported operating system.

Transceiver Support

Spirent has a rigorous process for selecting and qualifying transceivers to operate with its test modules. This ensures the highest quality test results and seamless operation for end users. Refer to the Spirent Knowledge Base (<https://support.spirent.com>) and search for *Supported Transceivers* to access the current list or contact Spirent Support Services for a list of qualified transceivers.

The use of unqualified transceivers may cause intermittent link issues, FCS errors, dropped packets, auto-negotiation issues, and other Layer 1 problems. Even rebranded transceivers based on those included in Spirent's supported list may not be fully compatible.

In cases where Spirent qualified transceivers are not used, Spirent Support Services will troubleshoot those situations where a valid support contract is in place. However, in situations where compatibility with unqualified transceivers is suspected, Spirent Support Services may ask the customer to replace them with transceivers on our official list.

System Requirements

System Test	Recommended System
General Functional Testing at low port (< 20) and stream density and/or low protocol scale (100s of emulated endpoints)	<ul style="list-style-type: none"> ▪ Intel i3 CPU (or equivalent) <ul style="list-style-type: none"> ○ 2.9 GHz or better ▪ 3GB RAM ▪ 50GB of free disk space
Scaling Testing with higher ports and/or single or multi-dimensional protocols scale	<ul style="list-style-type: none"> ▪ Intel i7 CPU (or equivalent) <ul style="list-style-type: none"> ○ 2.9 GHz or better ▪ 8 GB RAM ▪ 100GB of free disk space

Spirent TestCenter Hardware and Software Requirements

1. Spirent TestCenter SPT-N12U, SPT-N11U, SPT-N4U, SPT-C1, SPT-C50, or PX3/DX3-QSFP-DD-8 chassis/appliance with one or more ordered test modules and blank panels installed. Chassis firmware must be as follows:
 - Firmware v4.00 or greater for SPT-C1
 - Firmware v4.30 or greater for SPT-N11U
 - Firmware v4.33 or greater for SPT-N4U
 - Firmware v4.52 or greater for SPT-C50
 - Firmware v4.93 or greater SPT-C50-S2-RX
 - Firmware v4.93 or greater for PX3/DX3-QSFP-DD-8
 - Firmware v5.01 or greater for SPT-N12U
2. Spirent TestCenter Application
3. License for BPK-1001A (Packet Generator and Analyzer Base Package A) software is a minimum requirement.
4. A single instance of Spirent TestCenter is supported per PC when using the graphical user interface.

Important Information Common to all Chassis

It is important to follow proper environmental procedures when using any Spirent TestCenter chassis. Make sure that all empty slots are covered with slot covers – PN ACC-2022A for the SPT-N12U, SPT-N11U, and SPT-N4U chassis.

Failure to follow proper procedures and **use slot covers** may result in a major loss of chassis functionality or a system crash.

Operating System Requirements

Any of Windows operating system variants listed in the table below can be used with the Spirent TestCenter GUI and API. The Linux/UNIX operating systems in the table below can be used with automation only.

Note: For Windows installations of the Spirent TestCenter Application, all Important Windows Updates should be installed.

For automation users, it is necessary to work with a combination of operating systems and scripting languages. The table below show Spirent supportability matrix. Windows operating systems are supported for the following languages: English, French, German, Japanese, Korean, Chinese (traditional and simplified), and Italian.

		GUI	C/C++	C#	Java	Perl			Python				Ruby	Tcl & HLTAP I		
Operating System			VS6/g++ 4.02 or later	VS6/g++ 4.02 or later	1.6	5.8.8	5.8.9	5.14	2.6.6	2.7.5	3.4.4	3.5.2	1.86	8.4.13, 8.5.9, & 8.5.14	REST	
Windows	Server 2016	✓ ₂														
	Server 2012 R2 DataCenter (64-bit only)	✓ ₂														
	Server 2012 R2 Standard (64-bit only)	✓ ₂														
	10 Pro 32-bit / 64-bit	✓ ₂												✓ ₂	✓ ₂	
	8.1 Pro 32-bit / 64-bit	✓ ₂														
	7 Professional 32-bit / 64-bit	✓ ₂	✓ ₂		✓ ₂	✓ ₂				✓ ₂	✓ ₂	✓ ₂		✓ ₂	✓ ₂	✓ ₂
	Server 2008 R2 Enterprise	✓ ₂	✓ ₂	✓ ₂	✓ ₂	✓ ₂				✓ ₂		✓ ₂		✓ ₂	✓ ₂	
	Server 2008 R2 Standard	✓ ₂	✓ ₂	✓ ₂	✓ ₂	✓ ₂				✓ ₂		✓ ₂		✓ ₂	✓ ₂	
Linux	CentOS 6.3 x86_64 GNU/Linux								✓	✓	✓					
	CentOS 6.8 x86_64 GNU/Linux													✓		
	CentOS 7.1 x86_64 GNU/Linux									✓						
	SUSE Linux Enterprise Server (x86_64)				✓			✓								
	Ubuntu 10.04 64 bit									✓	✓					
	Ubuntu 10.10 64-bit					✓ _{1,2,3}	✓ _{1,2,3}		✓		✓					
	Ubuntu 12.04 64-bit									✓	✓					
	Ubuntu 14.04 64-bit						✓ ₁								✓	
	Ubuntu 16.04 64-bit											✓			✓	

1. Multi-threaded
2. Running as a 32-bit application
3. Requires LabServer
4. Requires openssh-client package

Spirent TestCenter Enhanced L4-7

In addition to all Spirent TestCenter requirements, the Spirent TestCenter Enhanced L4-7 GUI requires a supported Web browser to be installed on the system.

Currently supported Web browsers:

- Mozilla Firefox
- Google Chrome

Supported Test Modules:

- MX3-100GD-T2
- MX3-100GO-T2
- MX3-100GQ-T2
- MX3-100GQF32-T2
- MX3-100GTL-T2
- MX3-100GTN-T2
- MX3-100GTNF32-T2
- MX3-QSFP28-4-100A
- MX3-QSFP28-4-125A
- MX3-QSFP28-4-150A
- MX3-QSFP28-4-175A
- MX3-QSFP28-4-225A
- MX3-QSFP28-4-40A
- MX3-QSFP28-4-50A

Supported Appliances:

- C50-KIT-11-START
- C50-KIT-11AX-1
- C50-KIT-11AX-2
- C50-KIT-11AX-3
- C50-KIT-15-START
- C50-KIT-22-START
- C50-KIT-25-START
- AUTO-C50-KIT-11-START
- AUTO-C50-KIT-12

Limitations:

- IP addresses in device blocks can only be incremented by 0.0.0.1.
- List modifiers for addressing are not supported.
- Only one instance of Enhanced L4-7 can be run at a time on a single computer.
- Launching the Enhanced L4-7 web UI takes up to 10 second to load, sometimes showing that the UI is unable to connect (localhost refused to connect), but finally loads.
- A total of 500 endpoints (devices or routes) per port are supported (500 endpoints in a single device/route block, 500 device/route blocks of 1 endpoint, or any combination thereof). More than 500 endpoints will cause significant lost traffic or failure to start the test.
- Client association Results view still displays protocols and application scenarios after they are removed from the test configuration.
- Configuring a mismatched device count per device block may cause inconsistent traffic patterns. For example, a client device block of 5, with a server device block of 3, does not result in all 5 clients communicating with all 3 servers. It is recommended to configure matching device counts per device blocks.

Virtual LabServer (vLS)

These are the recommended system requirements for vLS:

- 4 core CPU
- 32 GB RAM
- 100 GB disk (SSD or better)

A maximum of 5 concurrent RFC 2544 benchmark tests of 90 ports each were tested on this system configuration.

Important: You must "migrate" (new install, not an upgrade) to the new 64-bit Virtual LabServer VM image. The new 64-bit Virtual LabServer is not an upgrade from the previous 32-bit Virtual LabServer.

Refer to Appendix A in *Getting Started with Spirent TestCenter* for installation and configuration instructions for the Spirent Virtual LabServer (vLS).

Starting with release 4.81, Virtual LabServer includes a 64-bit application for improved performance.

To summarize the changes:

- The 32-bit Virtual LabServer installs were distributed in 2 file formats: OVA and Raw.
- The 64-bit VMs are released in OVA and QCOW2 formats. These are two the most commonly used formats in current virtual ecosystems.
- With the 64-bit Virtual LabServer, there is also a new containerized image (gzipped tar file) for bare metal installs. This artifact is also used to upgrade a 64-bit LabServer in a VM deployment.

LabServer

Without LabServer, customers may connect to Spirent TestCenter using any of the supported operating systems as clients.

Spirent TestCenter Virtual - Supported Hypervisors

This table provides a list of hypervisors that are supported for Spirent TestCenter Virtual.

Hypervisor	Distribution / Version
VMware ESXi	<ul style="list-style-type: none"> ▪ 4.0, 4.1, 5.1, 5.5, 6.5
QEMU/KVM	<ul style="list-style-type: none"> ▪ Fedora 20 ▪ CentOS 6.5 ▪ Ubuntu 14.04

Spirent TestCenter Anywhere - Supported Linux Distributions

This table provides a list of Linux OS that are supported for Spirent TestCenter Anywhere.

Distribution / Version
Fedora 20, 23
CentOS 6.5, 7
Ubuntu 14.04, 16.04

License Server 4.0

This table provides a list of hypervisors that are supported for Virtual Controller VM 4.0.

Hypervisor	Distribution / Version
VMware ESXi	<ul style="list-style-type: none"> 6.0, 6.5
QEMU/KVM	<ul style="list-style-type: none"> Ubuntu 16.04

Product Alert: SPT-C50

Subject

The SPT-C50 appliance is being replaced by the SPT-C50-S2 that contains a new motherboard and CPU. It is not being marketed as a new product. The SPT-C50-S2 will look the same as the current SPT-C50 and requires Spirent TestCenter release 4.78 or higher.

Problem Description

Software on Spirent appliances is pre-installed. Therefore, users will already have the correct software. If the user accidentally downgrades the appliance to a release older than 4.78 by mistake, they will need to recover the system. See **Resolution** below.

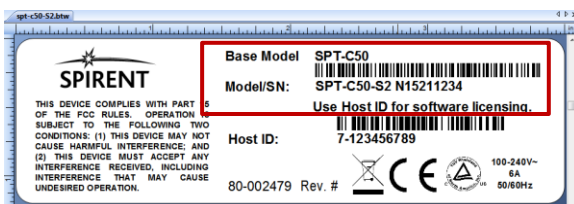
Product(s) Affected

SPT-C50-S2

How can I tell if I have an SPT-C50-S2?

On the back of the appliance you will see both the Base Model and Model/SN numbers:

1. Base Model: SPT-C50
2. Model/SN label: SPT-C50-S2



Resolution

To recover the system please refer to document **SOL13559** in the Knowledge Base on Spirent's **Customer Service Center (CSC)** web site at:

https://support.spirent.com/SpirentCSC/SC_KnowledgeBrowse?channel=Solutions

Note: You must first log in to the CSC with your user credentials, to access the article.

Please contact Spirent Technical Support if you have any comments or questions regarding this Product Alert. Complete contact information is available at the end of these *Release Notes*.

Installation Instructions

Getting Started with Spirent TestCenter (DOC10032) provides hardware set up, software and firmware installation, and licensing instructions for Spirent customers who are receiving and installing a new Spirent TestCenter system.

This document is included in the Documentation folder on the installation DVD and is available in the current Documentation download file (.exe) on the Spirent Communications Customer Service Center (CSC) website (<https://support.spirent.com>).

User Documentation

Spirent TestCenter user documentation is available in PDF and Webhelp formats.

PDF documents support Spirent TestCenter product installation, Spirent TestCenter Virtual, Spirent TestCenter automation, and provide testing methodology information.

Tip: The newest versions of these documents are available on the Spirent Communications Customer Service Center (<https://support.spirent.com>) in the *Knowledge Base* area.

Spirent TestCenter Automation HLTAPI user documentation is also included on the Spirent TestCenter installation DVD and is available in the Spirent TestCenter Documentation installer (.exe) on the Customer Service Center (<https://support.spirent.com>) from the *Downloads* page and in the *Knowledge Base* area.

The **Spirent Hardware Reference** (DOC10031) is available on the Knowledge Base.

- The *Spirent Hardware Reference* provides information about Spirent TestCenter chassis, modules, module LEDs, multiple chassis connections, cables, and chassis commands. It includes basic information about system administration functions and diagnostics.
- Navigate to the Spirent Communications support website (<https://support.spirent.com>).
 - Click the Knowledge Base icon in the left panel.
 - Type **spirent hardware reference** or **DOC10031** in the search box. Click **Search KB**.
 - Click the *Spirent Hardware Reference* link in the results list.

Spirent TestCenter Help files

Help files, included within Spirent TestCenter applications, provide reference information and context sensitive user support.

Tip: Launch a Help file by pressing **F1** in an open application or by clicking the **Help** button displayed in the menu bar or on a dialog box.

For your convenience, the current Help file is also available as part of the CSC Knowledge Base (DOC10335). This stand-alone Help file is fully functional. Use the Table of Contents to navigate through the file or click the **Search** tab and enter a search string to find the information you need.

Spirent Support

To obtain technical support for any Spirent Communications product, please contact our Support Services department using any of the following methods:

Americas

E-mail: support@spirent.com

Web: <https://support.spirent.com>

Toll Free: +1 800-SPIRENT (+1 800-774-7368) (North America)

Phone: +1 818-676-2616

Hours: Monday through Friday, 05:00 to 17:00 Pacific Time

Europe, Middle East, Africa

E-mail: support@spirent.com

Web: <https://support.spirent.com>

Phone: +33 (1) 6137 2270 (France)

Phone: +44 1803 546333 (UK)

Hours: Monday through Thursday, 09:00 to 18:00, 9:00 to 17:00 Friday, Paris Time

Asia Pacific

E-mail: support@spirent.com

Web: <https://support.spirent.com>

Phone: +86 (400) 810-9529 (toll-free mainland China only)

Phone: +86 (10) 8233 0033 (China)

Operating Hours: Monday through Friday, 09:00 to 18:00 Beijing Time

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The latest versions of user manuals, application notes, and software and firmware updates are available on the Spirent Communications Customer Service Center website at <https://support.spirent.com>.

Information about Spirent Communications and its products and services can be found on the main company website at <https://www.spirent.com>.

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