

## Cisco ASR 1000 Series SPA Interface Processors (SIP10 and SIP40)

### General

**Q. What are the main functions of the Cisco® ASR 1000 Series SPA Interface Processors (SIP10 and SIP40)?**

**A.** The SIP10 and SIP40 provide the physical and electrical termination for the shared port adapters (SPAs). In addition, both the SIP10 and SIP40 support ingress packet classification and buffering to allow for oversubscription. The SIPs also provide network-clocking distribution from the routing processor to the SPAs. The SIP10 and SIP40 do not participate in forwarding decisions.

**Q. What are the main differences between the SIP10 and SIP40?**

**A.** The main difference is that the SIP40 enables 40 Gbps aggregate bandwidth per slot, while the SIP10 provides 10 Gbps of aggregate bandwidth per slot.

**Q. What interface technologies do the SIP10 and SIP40 support?**

**A.** The SIP10 and SIP40 support a wide range of interface types, including Ethernet, ATM, Packet over SONET/SDH (POS), and serial. Please refer to the [Cisco ASR 1000 Series SPA data sheet](#) for the detailed support matrix.

**Q. Are the Cisco ASR 1000 Series SIP10 and SIP40 supported on all of the Cisco ASR 1000 Series Routers?**

**A.** The Cisco ASR 1004 and ASR 1006 Routers support SIP10 as a modular component. The Cisco ASR 1004, Cisco ASR 1006 and ASR 1013 Routers support the SIP40 as a modular component. The Cisco ASR 1002 Router does not support the SIP40.

**Q. What is the bandwidth capacity of the Cisco ASR 1000 Series SIP10 and SIP40 and the backplane of the Cisco ASR 1000 Series Router?**

**A.** The SIP10 enables 10 Gbps of aggregate bandwidth per slot and SIP40 enables 40 Gbps of aggregate bandwidth per slot. The SIP10 connects to the Cisco ASR 1000 Series Embedded Services Processor (ESP) through the passive midplane with 10 Gbps point-to-point links. The SIP40 connects to an ESP in the same way. The ESP module in the chassis determines the forwarding capacity of Router. For example, ESP40 has 40 Gbps forwarding capacity, ESP20 has 20 Gbps forwarding capacity; ESP10 has 10 Gbps forwarding capacity.

**Q. What is the bandwidth capacity of the SIP40 operating in the Cisco ASR 1013 chassis?**

**A.** The slot bandwidth of the SIP40, while plugged into a Cisco ASR1013 chassis, is determined by slot location. In slots 0 to 3, the SIP40 provides 40 Gbps per slot, but in slots 4 and 5, it operates at 10 Gbps.

**Q. What SPA form factors do the SIP10 and SIP40 support? Can you mix different form-factor SPAs in the same SIP?**

**A.** Both the SIP10 and SIP40 support the single-height and double-height SPAs, but they do not support double-wide SPAs. Mixing and matching of various form factors are possible in the same Cisco ASR 1000 Series SIP.

**Q. Can you mix SIP10 and SIP40 in the same chassis?**

**A.** Yes, you can mix both in the same chassis, but the ESP in the chassis determines the slot bandwidth.

**Q. What port density do the SIP10 and SIP40 support?**

**A.** Both SIP10 and SIP40 support up to four single-height SPAs and two double-height SPAs and any combinations of the two SPA heights.

## Software

**Q. What is the minimum software release that supports the SIP10 and SIP40?**

**A.** The SIP10 is supported in all Cisco IOS® XE Software Releases. The minimum software release supporting the SIP40 is Cisco IOS XE Software Release 3.1S.

## SPA Support

**Q. Which SPAs do the SIP10 and SIP40 support at the time of first availability?**

**A.** Please refer to the Cisco ASR 1000 SPA supportability matrix.

**Q. Do the Cisco ASR 1000 Series SIP10 and SIP40 support platform-specific SPAs?**

**A.** Yes. Only the SPAs shared across the Cisco Carrier Routing System platforms are supported. Platform-specific SPAs, such as the Cisco 7304 platform-specific SPAs, are not supported.

## Functions

**Q. Do the Cisco ASR 1000 Series SIP10 and SIP40 participate in forwarding decisions?**

**A.** No. The Cisco ASR 1000 Series ESP makes all forwarding decisions. However, the SIP10 and SIP40 support ingress classification and buffering to allow interface oversubscription.

**Q. Will the upgrade of one SPA driver affect the operations of other SPAs in the same SIP? How about other SPAs in the same platform?**

**A.** No. The modular design of the Cisco ASR 1000 Series Aggregation Services Router allows each SPA driver to operate as an isolated entity. Each driver is individually upgradeable and does not affect other SPAs in the same SIP, nor will it affect other SPAs in the same platform.

**Q. Is online insertion and removal (OIR) supported on the Cisco ASR 1000 Series SIP10 and SIP40?**

**A.** Yes. Both the Cisco SIP10 and SIP40 support OIR, as do the SPAs housed by the SIPs.

**Q. What are the functional differences between the SIP10 and SIP40?**

**A.** The SIP40 allows up to 40 Gbps of bandwidth capacity between the SIP carrier card and the ESP forwarding engine, as opposed to 10 Gbps for the SIP10.

## For More Information

For more information about the Cisco ASR 1000 Series Router, visit [www.cisco.com/go/asr1000](http://www.cisco.com/go/asr1000) or contact your local Cisco account representative.



Americas Headquarters  
Cisco Systems, Inc.  
San Jose, CA

Asia Pacific Headquarters  
Cisco Systems (USA) Pte. Ltd.  
Singapore

Europe Headquarters  
Cisco Systems International BV Amsterdam,  
The Netherlands

Cisco has more than 200 offices worldwide. Addresses, phone numbers, and fax numbers are listed on the Cisco Website at [www.cisco.com/go/offices](http://www.cisco.com/go/offices).

Cisco and the Cisco Logo are trademarks of Cisco Systems, Inc. and/or its affiliates in the U.S. and other countries. A listing of Cisco's trademarks can be found at [www.cisco.com/go/trademarks](http://www.cisco.com/go/trademarks). Third party trademarks mentioned are the property of their respective owners. The use of the word partner does not imply a partnership relationship between Cisco and any other company. (1005R)