



MSCs and SPA Product Overview

This chapter provides an introduction to the modular services cards (MSCs) and shared port adapters (SPAs). It contains the following sections:

- [Introduction to MSCs and SPAs, page 1-1](#)
- [MSC and SPA Compatibility, page 1-2](#)
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For software details for the specific MSCs and SPAs that are supported on the Cisco 7304 router, refer to the companion publication, *Cisco 7304 Router Modular Services Card and Shared Port Adapter Software Configuration Guide*.

Introduction to MSCs and SPAs

MSCs and SPAs are a carrier card and port adapter architecture to increase modularity, flexibility, and density across Cisco Systems routers for network connectivity. This section describes the MSCs and SPAs and provides some guidelines for their use.

Modular Service Cards

The following lists describes some of the general characteristics of an MSC:

- An MSC is a carrier card that inserts into a router slot like a line card. It provides no network connectivity on its own.



Note The MSC-100 is the only carrier card currently available for SPAs on the Cisco 7304 router. However, SPAs can be inserted into other carrier cards on other router platforms. For information on carrier cards on other platforms, see the documentation for those platforms.

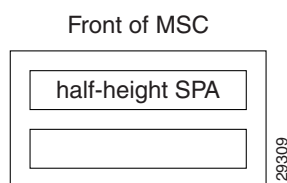
- The only MSC currently available is the MSC-100, which contains two subslots used to house SPAs. The SPA provides interface ports for network connectivity.
- During normal operation, the MSC should reside in the router fully populated either with functional SPAs in all subslots, or with a SPA blank filler plate inserted in any empty subslots.
- An MSC supports online insertion and removal (OIR) with SPAs inserted in its subslots. SPAs also can be inserted or removed independently from the MSC.

Shared Port Adapters

The following list describes some of the general characteristics of a SPA:

- A SPA is a modular type of port adapter that inserts into a subslot of a compatible MSC carrier card to provide network connectivity and increased interface port density.

Figure 1-1 SPA Sizes for the Cisco 7304 Router



- Each SPA provides a certain number of connectors, or ports, that are the interfaces to one or more networks. These interfaces can be individually configured using the Cisco IOS command-line interface (CLI).
- Either a SPA blank filler plate or a functional SPA should reside in every subslot of an MSC during normal operation.
- SPAs support online insertion and removal (OIR). They can be inserted or removed independently from the MSC. MSCs also support online insertion and removal (OIR) with SPAs inserted in their subslots.

MSC and SPA Compatibility

Table 1-1 shows the MSC that is supported in the Cisco 7304 router and the SPA that it supports.

Table 1-1 MSC and SPA Compatibility on the Cisco 7304 Router

SPA	MSC-100
4-Port 10/100 FastEthernet SPA (SPA-4FE-7304)	Yes
2-Port 10/100/1000 Gigabit Ethernet SPA (SPA-2GE-7304)	Yes
2-Port OC-3c/STM-1 POS SPA (SPA-2XOC3-POS)	Yes
4-Port OC-3c/STM-1 POS SPA (SPA-4XOC3-POS)	Yes
1-Port OC-12c/STM-4 POS SPA (SPA-1OC12-POS)	Yes
2-Port T3/E3 Serial SPA (SPA-2XT3/E3)	Yes
4-Port T3/E3 Serial SPA (SPA-4XT3/E3)	Yes

Modular Optics Compatibility

Some SPAs implement small form-factor pluggable (SFP) optical transceivers to provide network connectivity. An SFP module is a fiber optic receptacle device that mounts flush with the front panel to provide network connectivity.

Cisco Systems qualifies the SFP modules that can be used with SPAs.



Note

The SPAs will only accept the SFP modules listed as supported in this document. An SFP check is run every time an SFP is inserted into a SPA and only SFP modules that pass this check will be usable.

Table 1-2 shows the types of optics modules that have been qualified for use with a SPA:

Table 1-2 SPA Optics Compatibility

SPA	Qualified Optics Modules
2-Port Gigabit Ethernet SPA	• SFP-FCGE-S • SFP-FCGE-L • SFP-GE-Z
2-Port and 4-Port OC-3c/STM-1 POS SPA	• SFP-OC3-MM • SFP-OC3-SR • SFP-OC3-IR1 • SFP-OC3-LR1 • SFP-OC3-LR2
1-Port OC-12c/STM-4 POS SPA	• SFP-OC12-MM • SFP-OC12-SR • SFP-OC12-IR1 • SFP-OC12-LR1 • SFP-OC12-LR2

