Cabinet and Rack Installation

Cabinet and Rack Requirements

This section provides the Cisco MDS 9000 Series switches requirements for the following types of cabinets and racks in an external ambient air temperature range of 0 to 40°C:

- Standard perforated cabinets
- Solid-walled cabinets with a roof fan tray (bottom to top cooling)
- Standard open racks
- Telco racks

Note If you are selecting an enclosed cabinet, we recommend one of the thermally validated types listed above: standard perforated or solid-walled with a fan tray.

General Requirements for Cabinets and Racks

The cabinet or rack must be a standard 19-in. four-post EIA cabinet or rack, with mounting posts that conform to English universal hole spacing per section 1 of ANSI/EIA-310-D-1992. See the Requirements Specific to Perforated Cabinets and Requirements Specific to Solid-Walled Cabinets sections.

The cabinet or rack must also meet the following requirements:

- The minimum vertical rack space per chassis should be 1 RU (rack unit), equal to 1.75 in. (4.4 cm).
- The width between the rack-mounting rails must be at least 17.75 in. (45.1 cm). This is the distance between the two front rails.
- For four-post EIA cabinets (perforated or solid-walled):
  - The distance between the front door and front mounting posts should be a minimum of 3 in. (7.6 cm) to allow for the bend radius of FC port fibre-optic patch cables.

- The distance between the outside face of the front mounting rail and the outside face of the back mounting rail should be 23.5 to 34.0 in. (59.7 to 86.4 cm) to allow for installation with the Cisco rack mounting kit.
- There should be a minimum of 2.5 in. (6.4 cm) of clear space between the side edge of the chassis and the side wall of the cabinet. No sizable flow obstructions should be immediately in the way of the chassis air intake or exhaust vents.
- The distance between the rear of the chassis and the perforated rear door of the cabinet (required for airflow in the cabinet, if used) should be a minimum of 3.0 in. (7.6 cm).
- The airflow and cooling are adequate and there is sufficient clearance around the air vents on the switch, as described in Technical Specifications. This is particularly important to verify if you are installing the switch in an enclosed cabinet.
- No clearance is required between the chassis and the sides of the rack or cabinet (no side airflow).
- The rack meets the minimum rack load ratings per rack unit (RU) listed in the following table.

Rack Type	MDS 9396T
EIA (4-post)	7.5 lb

Note

- Cisco MDS 9396T switches are compatible with Cisco racks (such as Cisco R42612) and PDUs.
- Optional jumper power cords are available for use in a cabinet.

Requirements Specific to Perforated Cabinets

In addition to the requirements listed in the General Requirements for Cabinets and Racks section, perforated cabinets must meet the following requirements:

- The front and rear doors must have at least a 60 percent open area perforation pattern, with at least 15 sq. in. of open area per rack unit of door height.
- We recommend that the roof be perforated with at least 20 percent open area, unless the cabinet only contains Cisco MDS 9396T switch, in which case the roof does not have to be perforated.
- We recommend an open or perforated cabinet floor to enhance cooling but it is not required.

Reference Perforated Cabinet

A perforated cabinet that conforms to the above requirements is available from Rittal Corporation:

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Rittal Corporation
One Rittal Place
Springfield, OH 45504
Phone: (800) 477-4000
Cabinet P/N: Rittal 9969427
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Cabinet description: PS-DK/OEM Cabinet Assembly, 1998 x 600 x 1000 (H x W x D)
(42U)
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Requirements Specific to Solid-Walled Cabinets

In addition to the requirements listed in the General Requirements for Cabinets and Racks section, solid-walled cabinets must meet the following requirements:

- The rack must have a roof-mounted fan tray and an air-cooling scheme in which the fan tray pulls air in at the bottom of the cabinet and sends it out from the top, with a minimum airflow of 849.5 m3/h exiting the cabinet roof through the fan tray, should be available.
- The front and rear doors, and side panels, must be installed and nonperforated so that air flows predicatably from bottom to top.
- The overall cabinet depth should be 36 to 42 in. (91.4 to 106.7 cm) to allow the doors to close and to facilitate adequate airflow.
- The open area of the floor air intake must be a minimum of 150 sq. in. (968 sq. cm).
- The lowest piece of equipment should be installed at a minimum of 1.75 in. (4.4 cm) above the floor openings to prevent blocking the floor intake.