



Moving the Chassis

This chapter describes the things to consider as you move the Cisco NCS 6000 Series chassis from the loading dock to the mounting location at the site.

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Important Notice

A fork lift or pallet jack can be used to transport a crated chassis only.

Throughout this document we refer to the dolly (supplied by Cisco) as the required means to transport the uncrated chassis from the shipping dock to the chassis final location.

In the event that the dolly supplied by Cisco is not the appropriate method of transportation, consult with Cisco support to determine a method of transportation appropriate for the site. Ensure that the alternate moving device is capable of supporting the weight of the chassis, moving the chassis safely, and preventing the chassis from tipping too far and falling during transport.

Guidelines

When you use the dolly to move the as-shipped Cisco NCS 6000 Series chassis, follow these guidelines:

- When using the dolly to move the as-shipped chassis between locations, ensure that the chassis is free of RP cards, FCs, LCs, fan trays, and power components (to reduce weight). Cisco strongly recommends that you do not move a chassis while it is fully populated.



Note

The Cisco NCS 6000 FCC ships with two shelf controller cards (SC-SW or SC cards) preinstalled in the chassis. Do not remove these cards.

**Caution**

The crated Cisco NCS 6000 Series chassis is tall and heavy. Handle it carefully to reduce the risk of tipping the chassis over too far so that it falls to the floor and causes injury. We recommend that at least two people move the chassis together to better support its size and weight.

- When raising or lowering the chassis, follow these guidelines:
 - Make sure that you have at least one person on each side of the chassis to turn the lifting cranks on the dolly as simultaneously as possible.
 - Raise or lower the chassis only on a level surface.
 - Make sure that the caster brakes and anti-rotation pins are in the locked position.
 - Keep the casters on the floor at all times when you are raising or lowering the chassis.
 - Attempt to keep the chassis itself as level as possible when raising or lowering it with the dolly.
 - Use the height label on the dolly to make sure that you have the correct amount of ground clearance. The label shows the recommended transport chassis engagement height, the height that is not to be exceeded, and to ensure correct alignment between both dolly wheel assemblies.
- When moving the chassis in a hallway (a standard hallway is 5 feet wide) or through aisles using a dolly, follow these guidelines:
 - Make sure that you have at least two people to transport the chassis. Never transport the chassis by yourself.
 - Use the dolly in the 180-degree configuration whenever possible when you move the chassis. This configuration requires you to have passageways at least 50 inches in width to accommodate the combined dolly and chassis width.
 - Use the dolly in the 90-degree configuration if your site restrictions require it. If hallway constraints require you to use the 90-degree dolly configuration (24 inches), the chassis is more likely to tip, so use extra care when transporting the chassis in that configuration.
 - When the dolly is used to transport the chassis, to reduce the risk of dolly instability, chassis damage, or personal injury, do not raise the equipment more than 1 inch (2.4 cm) above the floor during transportation.
 - The dolly can be used to transport the chassis over thresholds up to 1.5 inches.
- When transporting the chassis on a ramp, follow these guidelines:
 - Make sure that you have at least three people to transport the chassis up and down a ramp. One person in the rear pushing, one person at the front pulling, and one steering the chassis.
 - The dolly is optimized to move the chassis on flat surfaces. It is not designed to move the chassis on ramps greater than 1 inch of rise for every 6 inches of run. If the ramp exceeds this maximum limit, consult with Cisco support.
 - Exercise extreme caution when moving chassis up an incline of any angle.

**Caution**

Use the recommended 180-degree configuration to transport a chassis. If the 90-degree configuration is used, then the chassis is more likely to tip. Use caution and take extra care in rolling the chassis up a ramp. Always follow proper safety practices whenever moving a Cisco NCS 6000 Series chassis.

**Warning**

This dolly is designed only for the temporary transportation of the Cisco equipment listed here. Do not use it with any other device or for any other purpose. Cisco equipment designed for use with the dolly: Cisco NCS 6000 Series Chassis. Statement 356

**Warning**

Do not permanently locate the equipment on the dolly. Safely store the dolly after use. Statement 357

**Warning**

To reduce the risk of dolly instability, chassis damage, or personal injury, do not raise the equipment more than 1 inch (2.4 cm) above the floor during transportation. Statement 358

**Warning**

This dolly is designed to transport the equipment over short distances only. Statement 359

**Warning**

In order to reduce the risk of chassis damage or personal injury when replacing a fully-loaded, existing chassis, do not move the chassis in a configuration that is greater than the as-shipped chassis. Before attaching the dolly and moving the chassis, remove the power system, fan trays, RP cards, fabric cards, and line cards from the LCC. Remove the entire power tray assembly and associated components and any fabric cards from the FCC (Do not remove the SC-SW or SC cards). Statement 367

**Warning**

To reduce the risk of dolly instability, chassis damage, or personal injury, do not transport the equipment with the dolly raised higher than the maximum transport height shown on the dolly label, and do not raise the equipment higher than required to remove the shipping pallet. For information about maximum dolly heights, see the dolly instructions in this document. Statement 368

**Caution**

Dolly wheel casters and anti-rotation pins should be in the locked position when the dolly is not in use.

Verifying the Move Path

Before moving the Cisco NCS 6000 Series chassis, it is critical that you verify that the path that you are planning to use to move the chassis to its final location can accommodate the chassis size and weight and the restrictions of the chassis when using the dolly.

See the following table for a list of the restrictions for your move path, and verify that you have sufficient room for the *entire* move path prior to moving the chassis.

Table 1: Cisco NCS 6000 Series Chassis Move Path Specifications

Specification	Value
Height (on dolly, with recommended 1 inch raise)	82 in. (208.3 cm)
Depth (on dolly, 90-degree dolly position)	70 in. (178 cm)
Depth (on dolly, 180-degree dolly position)	48 in. (122 cm)
Width (on dolly, 90-degree dolly position)	23.6 in. (60 cm)
Width (on dolly, 180-degree dolly position)	44 in. (112 cm)
Weight of chassis (as shipped, packaging removed)	775 lb (352 kg)
Weight of dolly	126 lb (57.3 kg)
Maximum recommended height from floor (for chassis on dolly)	1.5 in. (3.8 cm)

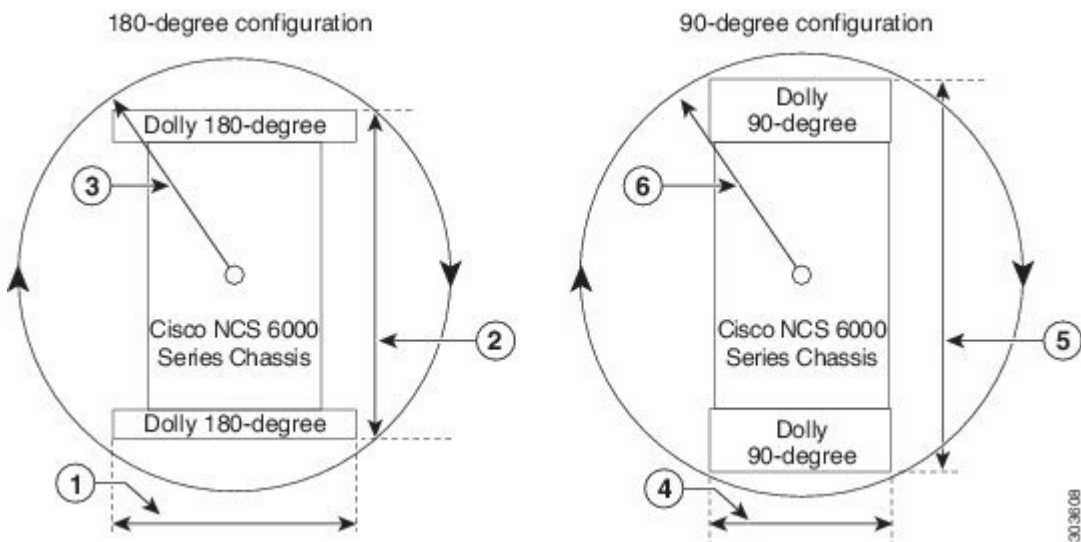


Note

Allow a minimum gap of between 4 to 6 inches (10 to 15 cm) on each side of the combined chassis and dolly when moving it.

The following figure shows the recommended minimum space to turn the chassis on the dolly in its 90-degree and 180-degree configuration.

Figure 1: Recommended Turning Diameter of Dolly



1	Width (on dolly, 180-degree position) 44 in. (112 cm)	4	Width (on dolly, 90-degree position) 24 in. (60 cm)
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2	Depth (on dolly, 180-degree position) 48 in. (122 cm)	5	Depth (on dolly, 90-degree position) 70 in. (178 cm)
3	Turn radius (on dolly, 180-degree position) 33 in. (83 cm)	6	Turn radius (on dolly, 90-degree position) 37 in. (94 cm)

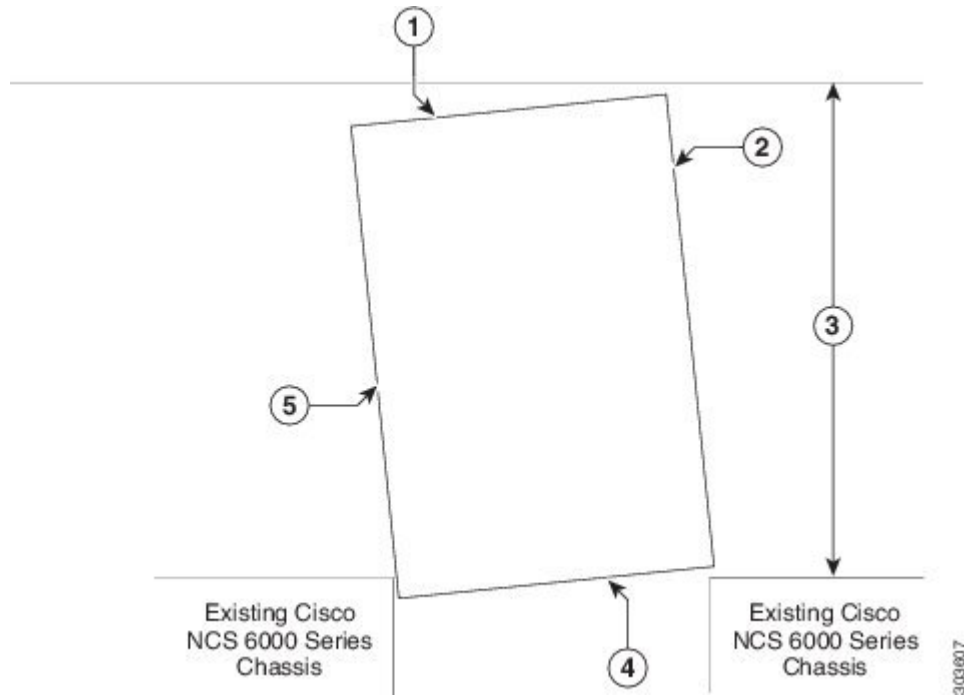
The following table provides the dolly width and the recommended aisle width turning radius for the 90-degree and 180-degree dolly configuration.

Table 2: Chassis Turning Recommendations

Dolly Configuration	Width of Dolly	Recommended Aisle Width
90-degree dolly position	24 in. (60 cm)	32 in. (81 cm) Aisle width may be different when transporting the chassis around a corner.
180-degree dolly position	44 in. (112 cm)	52 in. (132 cm)

The following figure shows a top view of the minimum aisle space required to install the Cisco NCS 6000 Series chassis without using the dolly supplied by Cisco. This space is exclusive of both the PDU brackets (mounted on both sides), and the router cosmetics.

Figure 2: Minimum Aisle Space Requirements to Install the Cisco NCS 6000 Series Chassis—Top View (With Dolly Removed)



1	Chassis front	4	Chassis rear
2	Chassis side	5	Chassis side
3	Moving space requirement: 34.7 in. (95 cm)		

Moving the Unpacked Chassis

Prerequisites

Before performing this task, make sure that the dolly is in the correct configuration, is firmly attached to the unpacked chassis, and the dolly brakes are in the locked position.



Note

If a dolly configuration change is required, see the [Modifying the Dolly Configuration](#).

Steps

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- Step 1** With a person on each side of the chassis, turn all four lifting cranks of the dolly slowly clockwise. Lift the dolly to the “Transport” marking on the height label on each lift assembly leg. The dolly can be used to transport the chassis at heights from 0.5 to 3.0 inches; the transport height is 1 inch max and 1.5 inch max for going over thresholds.
- Note** The dolly has four separate lifting cranks, each of which works independently. It is best to turn each lifting crank simultaneously when lifting the chassis to keep the chassis as level as possible so as to not put undue stress on the chassis frame or dolly and to reduce the risk of tipping too far.
- Note** The 180-degree position is the recommended configuration for moving the chassis. If needed because of site requirements, rotate the dolly to the 90-degree position. If you are transporting in a 90-degree configuration, then have at least two people moving the chassis to prevent any transporting hazard. See the [Modifying the Dolly Configuration](#) for further information.
- Note** You must lower the chassis completely to the floor before rotating the outrigger legs. When you have rotated the lifting cranks, raise the chassis again. See the [Modifying the Dolly Configuration](#) for further information.
- Step 2** Unlock the dolly caster anti-rotation and brake systems.
- Note** The dolly is optimized to move the chassis on flat surfaces. It is not designed to move the chassis up stairs, over curbs, up ramps, or over bumps more than 1.5 inches high (such as door thresholds).
- Step 3** Use at least three people to transport the chassis up any ramp. Position one person in the front of the chassis to pull, one person at the rear of chassis to push, and one person steering the chassis.
- Step 4** Carefully roll the chassis into position near its mounting location.
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