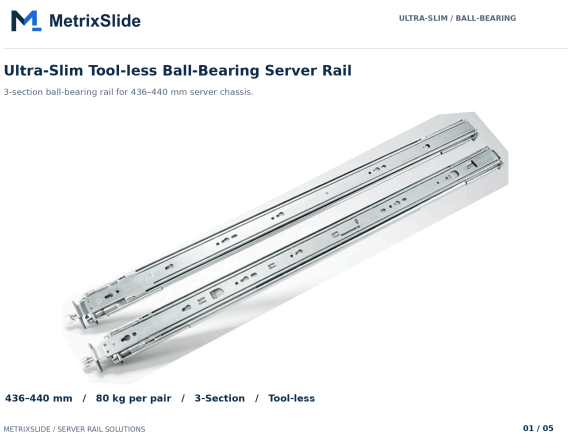
MetrixSlide

Engineering Solutions 006: Ultra-Slim Rail Selection for 440 mm Network Equipment



Product reference only. This image does not show a project-specific sample, delivered equipment or a validated customer assembly.

> **Documented status: customer requirements reviewed and a preferred rail architecture selected.** The engagement did not proceed to completed CAD approval, samples, physical validation or production. A selected direction is not presented as an approved installation.

Application and challenge

A manufacturer needed an ultra-slim rail direction for rack-mounted network equipment with a 440 mm-wide chassis in a standard 19-inch rack. The available side envelope constrained rail selection, while the desired sliding behavior still needed to be matched to the equipment's service requirements.

The chassis had no existing rail mounting holes or mounting pins. The customer could add a screw-mounted interface after selecting a rail direction. That changed the engineering question: the team did not have to force an existing chassis interface to fit a catalog rail. It could first choose a plausible architecture, then derive the necessary chassis-side mounting arrangement.

Compare the rail directions

MetrixSlide reviewed three architecture directions with the customer. These were candidate approaches, rather than three configurations already validated for the equipment.

Direction	Selection consideration	Recorded result
Ultra-slim ball-bearing	Sliding service access within a width-constrained family	Selected as the preferred direction
Ultra-slim friction	An alternative friction-sliding approach	Not selected for this engagement

Direction	Selection consideration	Recorded result
Tool-less friction-mount	Another mounting and sliding concept	Modification feasibility remained an evaluation question

The customer selected the ultra-slim ball-bearing direction. That selection supports the recorded architecture decision. It does not establish final mounting geometry, load performance or successful installation.

Engineering approach

Define the equipment envelope and service need

The initial review separated chassis width, approximate configured weight, available side space and the desired sliding behavior. Width identified a candidate family; it could not by itself establish an assembled fit.

Agree the architecture before defining the chassis interface

Because the chassis had no fixed rail interface, the selected rail direction would become an input to the future screw mounting arrangement. Rack-side tool-less installation and chassis-side screw attachment were treated as separate interfaces.

Keep the next design gates explicit

The intended next steps were to define the chassis mounting interface, confirm rack-side geometry and rail length, review the project CAD, then agree samples and physical validation. Required extension, rack adjustment and the final installation configuration still needed project-specific confirmation.

Verified project progress

The available correspondence records the requirements, candidate comparison and the customer's preferred architecture selection. The engagement concluded at that selection stage. It did not produce a released MetrixSlide mounting configuration, completed CAD fit approval, a delivered sample or a physical performance result.

If the project restarts, its current equipment and rack requirements must be reviewed again; the historical direction is a starting point for discussion.

What this case demonstrates

- Rail architecture can be selected from the chassis envelope and required service behavior before a new chassis interface is defined.
- A missing chassis-side interface can become a co-design task when the customer permits equipment changes.
- Rack-side mounting and chassis-side attachment need separate review.
- Requirements, architecture selection, CAD review, samples and physical validation are distinct stages.

The ultra-slim tool-less ball-bearing rail family provides product context for this architecture direction. Its stated product parameters are not proof of fit or load validation for this case. The cover is a product reference, rather than a project sample or installed system.

Customer confidentiality

The public application context uses the minimum chassis-width information needed to explain the selection problem. Customer identity, original CAD, exact mounting geometry, supplier model numbers, commercial terms and correspondence remain private.

Discuss width-constrained equipment

Start with non-confidential equipment width, depth, U height, total weight, mounting options and service-access needs. MetrixSlide can help review a rail architecture and identify the interface information needed for the next stage.

Request a rail architecture review · Engineering confidentiality