



Rack Crate Buyer's Guide

Smart. Packaging. Fast.

Reduce Costs and Damage, Gain Efficiencies,
and Enjoy Flexibility with a True Packaging Partner



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Introduction

We know there are many concerns that go into transporting items as large, expensive, and sensitive as server and storage racks, especially when shipping complete rack systems rather than individual components you integrate yourself at the data center. Shipping complete racks presents a number of unique challenges:

- Ensuring your equipment arrives safely
- Knowing it will work once it arrives and is installed at the data center
- And moving it efficiently without spending a fortune

That's why choosing the right packaging for your rack systems is such an important decision.

This decision is not just about finding a seemingly well-constructed wooden box. It's about finding a provider who offers custom packaging solutions that will protect your valuable equipment, be simple and efficient to use, and fit your budget.

This guide was designed to help companies understand the top considerations when selecting a crating and shipping solution that works for them.

Protecting Your Investment

Extreme Financial Loss is a Serious Threat

When moving servers, storage racks or entire data centers from point A to point B, the journey can be filled with risk. Whether you own and manage a data center or work with someone who does, you know that the potential for extreme financial loss—from catastrophic product damage to the cost of labor and technicians to fix non-working racks—is a serious threat.



So Make Sure Your Crate is Designed and Built for the Job

Due to the realities of the harsh shipping environment, it's important to make sure your rack crate is built for a difficult job. Precisely engineered foam shock absorption and vibration dampening on the base protects it from overwhelming shipping forces and collisions, and custom blocking and bracing keeps your product from shifting during transit.

Loading and unloading mechanisms should be built with performance and durability in mind. If the overall shipping weight is more than 1500-1750 lbs. before loading, ramps and floater bases should be reinforced with metal runners and tips to facilitate loading and unloading and prevent wood failure (and damage to the crate from casters and vibration).

Using Reinforced Ramps

These kinds of heavy-duty ramps may be shipped separately, or be fixtures in the data center, but if you are using a crate with built-in ramps, check to make sure they are not hinged to the floater base and locked to the crate, which will render a portion of the shock/vibration protection system ineffective.



In order to ensure product safety, it's imperative to guarantee your crate is built to withstand the pressures and forces of moving an object that weighs in excess of a ton.



When a Quality Investment Pays Off

A server manufacturer recently purchased rack crates for transportation but did not realize the importance of seeing that their mover properly strapped them into the delivery truck. Due to some rough driving the crates came crashing down into each other and sustained significant damages. But thanks to superior engineering and state-of-the-art foam cushioning, most of the servers were protected and eventually arrived with little or no damage.

That's the kind of difference sturdy design and engineering can make. There is no replacement for quality crating when moving high value merchandise.



Delivering the Product

Getting the Product There is Only Half the Battle

There are other concerns when delivering rack systems, not just related to product safety. The realities of receiving departments in most data centers—limited personnel on hand, and very little time to waste—often indicate a need for simple and efficient unloading mechanisms.



So Make Sure Your Crate is Easy to Use

When your product arrives at a data center, it should be ready to unpack with minimal difficulty in order to increase efficiencies on the receiving end. If your shipment requires special tools to open, or if it's not designed with an intuitive unloading procedure, more time may be lost just getting the server out of the crate itself, and there's a higher risk of personal injury to inexperienced staff members.

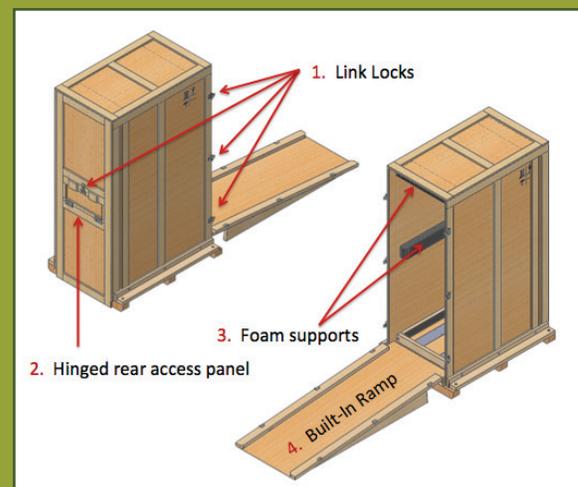
Crates that are designed for simple, efficient and tool-less access and unloading are less risky and will save time and money. And you never have to worry about losing critical tools to open them up. Good design also ensures loose parts won't get lost or misplaced.

Smart Crate Design

Some crates include a hinged door or rear-access panel for quick and safe access to help guide the heavy cargo out of the crate. This usually works better than the alternative use of pulling straps. Heavy-duty twist locks can be used to secure the crate cap and door in transit, allowing for tool-less access on site.

Alternatively, spring clips may be used for cost-savings, but they require tools for removal—which can easily be lost.

Similarly, correct foam design and placement or specialty hold down brackets or blocking can hold the rack in place during shipping and ease its removal. Keeping track of ways to prevent hardware, straps and blocking from being discarded or lost is imperative.



Getting Maximum Value

Quality Crates Mean Quality Results

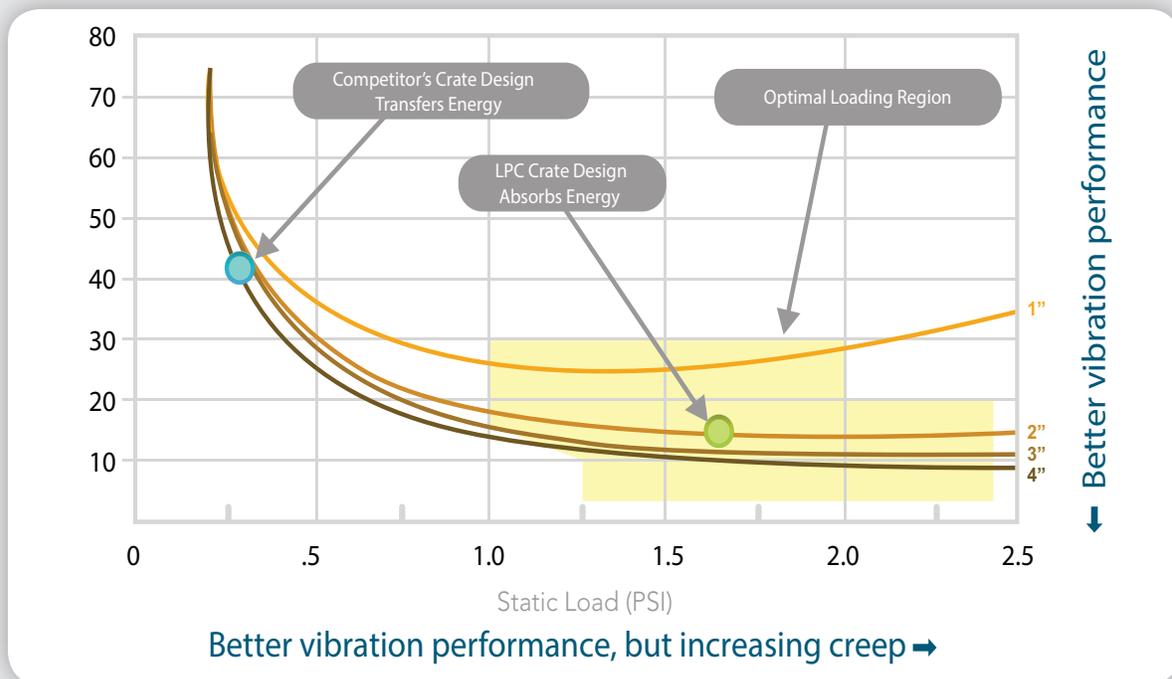
When selecting a rack packaging solution, the cheapest option might be tempting, but is often not the best solution. Crates built to meet a lower price point are usually made with inferior materials or construction methods and are often designed poorly. One minor flaw in packaging can result in damaged hardware. Suddenly the initial savings balloon with expensive back-end costs: server replacement, rack replacement, data replacement, labor and delays.



If your crate isn't built using the right type and quantity of foam cushioning, something as inconspicuous as a pothole in the road could lead to thousands of dollars in damages. Quality crates offer major benefits over seemingly less-expensive ones. Quality crates are:

- Generally more durable, as they are made with better quality lumber, plywood, foam and hardware
- Custom-engineered for the job and not just one-size fits all
- Built to last longer and can be can be refurbished and reused

The Science of Foam Cushioning in Rack Crates



Crate designers utilize a foam cushion curve to determine how much protective cushioning is needed for a product (given the product's fragility and resonant frequency), based on the loading condition, and type and thickness of foam. Too much foam can be too stiff, transferring energy from outside vibrations to the equipment inside the crate. Too little will not support the product. Getting the precise amount of foam cushioning to balance shock and vibration is important, as well as selecting the right type of foam and thickness. Often times too much foam can be worse than too little.

Longer-Term Investments Are More Reliable

A well-built crate can be used multiple times and refurbished for extended life, which is why it makes sense to think not in terms of price-per-crate, but rather cost-per-trip. If you can get multiple trips out of one quality crate, it will likely be a much better mid- to longer-term investment to pay more for durability.

A Higher Quality Investment Pays for Itself

Crates built for a minimum price point are often not built to last for more than one or two trips. Plus, these kinds of crates offer less protection, which leaves you vulnerable to the added cost of repairing broken equipment when things go wrong. Higher quality crates constructed from more durable materials may cost more up front, but they are safer and they last longer. Over time, the initial investment in a higher quality crate pays for itself.

Crate Type	Price	Lasts How Many Trips?					Cost Per Trip
Bargain	\$400	•	•				\$200
High Quality	\$750	•	•	•	•	•	\$150

Don't be caught off guard when you have to pay for disposal/recycling (better for the environment) at the end of your product's life. Once you factor in this expense, the short-term solution makes even less sense from a cost perspective. Paying for disposal after every couple of trips becomes a significant financial burden over time. Make sure you budget for the cost of getting rid of your worn out crates.



It Pays to Purchase Quality Crates

To summarize, here are the three things you should look for when purchasing rack server crates:

Safety and Security

Built to protect your product in transit

Ease of Use

Simple to unload after delivery

Value Advantage

Provides maximum long-term value

What to Look for In a Packaging Partner



Work with a supplier that can not only design and manufacture a sturdy and reliable prototype, but also can build and meet the scale of your project needs. Once a new design is released and built, you might need 200-400 crates within a few weeks. Look for a supplier with access to vendors and the inventory to handle large scale demands on short notice. Make sure they can do the work, and that they'll come alongside you as a partner to facilitate the needs of your supply chain.

Get in Touch Today

Make your life easier and make your packaging dream a reality—partner with Larson Packaging Company to get Smart. Packaging. Fast.

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