

AI-04686 Bench-Test Dell Poweredge R710 without the Case

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On Dell Poweredge R710, Can I run and removed all the hardware from the case and run it on the bench for training. I can improvise the cooling myself. I want to bring my old Dell Poweredge R710 from TX to Cebu and place it in my checked luggage. Search the web of anyone doing these.

Yes. **You can absolutely turn the R710 into an open-bench training server**, and for your TX → Cebu move, I actually think **stripping the R710 down is a much better idea than transporting the complete 2U chassis**.

I searched specifically for people running/bench-testing R710 hardware outside the normal chassis. There is good evidence that the concept works, although I did **not** find a strong example of someone permanently operating an R710 motherboard on a completely bare tabletop with all OEM cooling removed.

What I found

Dell itself documents the R710 being serviced with the system board removed from the chassis. Dell's minimum-POST guidance for the R710 is essentially:

- System board
- Risers
- CPU 1 + heatsink
- Power supply
- One DIMM in A1
- Control-panel assembly/cable

Dell users have also specifically discussed getting an R710 to **minimum-to-POST configuration** for troubleshooting. ([Dell](#))

Dell's documentation also confirms that the R710 motherboard can be removed from the chassis as an assembly. ([IBM](#))

More importantly, Dell's current troubleshooting documentation explicitly recommends using a **test bench/work bench** when troubleshooting certain PowerEdge hardware. ([Dell](#))

I also found numerous R710 homelab users running these machines as learning/lab platforms, including people running virtualization and networking labs. ([Reddit](#))

So your idea is technically sound.

My recommendation for YOUR R710

I would **not bring the entire R710 chassis to Cebu**.

The R710 is a huge amount of steel surrounding a relatively small amount of electronics.

Dell lists the R710 at:

44.3 cm × 68.1 cm × 8.6 cm

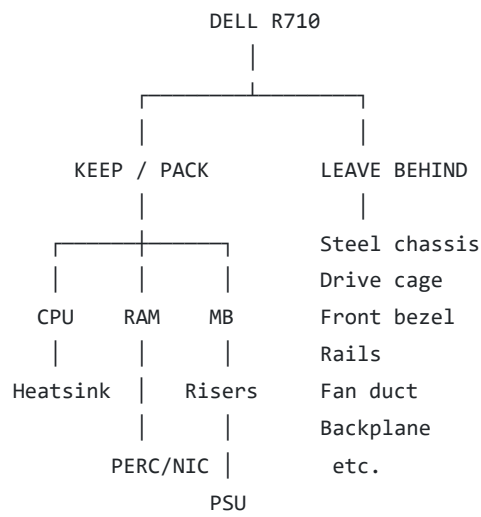
and up to **26.1 kg / 57.5 lb** in maximum configuration. ([Dell](#))

That's a terrible piece of luggage.

Instead:

TX → Cebu

Strip it down:

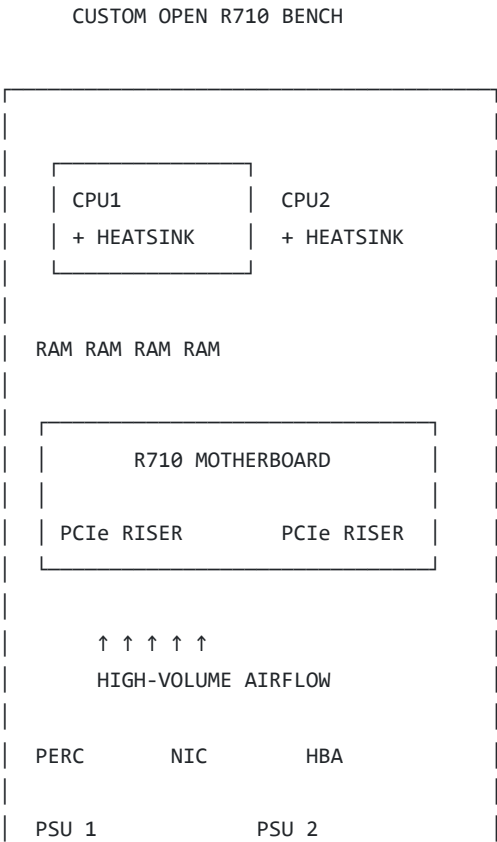


Then reconstruct it in Cebu as an **open-frame R710 laboratory**.
That could actually be much more useful for your DockerLab / virtualization / networking training.

The important distinction: "bare motherboard" vs "bare server"

I would **not** remove everything and just put the motherboard on a table and start it.
Instead, make an **open-air R710 platform**.

Something like:



You can build the frame from aluminum extrusion, plywood, acrylic, or even a properly insulated metal equipment shelf.

The big issue is cooling

This is the one part where I would **not simply improvise casually**.

The R710 was designed around a very specific airflow path.

Dell specifies **four fans for a single-CPU configuration and five fans for a dual-CPU configuration**. ([Dell Downloads](#))

And Dell explicitly warns against operating the R710 without its cooling shroud because the shroud directs airflow across the processors and other components. ([Dell Downloads](#))

That doesn't mean you cannot make your own cooling arrangement.

It means:

You need to reproduce the airflow, not merely blow a fan somewhere near the motherboard.

Your idea can actually be BETTER for training

For your purposes, I'd build an **R710 Training Bench**.

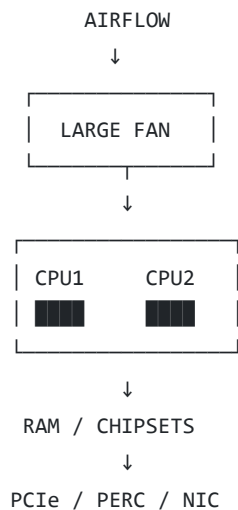
You could have:

CPU cooling

Use the original Dell heatsinks.

Then mount large external fans blowing directly across them.

For example:



I would actually prefer **large, slower fans** over tiny screaming server fans for a training bench.

But don't forget the PERC

This is important.

The R710's storage controller and various motherboard/PCIe components were designed assuming significant airflow.

One R710 reference specifically notes that some storage-controller/chipset components depend on the airflow generated by the R710's fan system. ([Cool Electricity](#))

So don't just cool the CPUs.

You want airflow across:

- CPU heatsinks
- RAM
- chipset
- PERC
- PCIe cards
- voltage regulators

I would KEEP the OEM fan assembly

Here's where I would modify my initial idea slightly.

Don't throw away the R710 fan assembly.

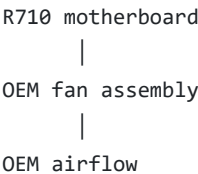
Bring it to Cebu.

You can remove the entire fan assembly from the chassis and mount it on your custom bench.

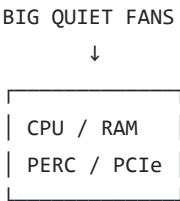
Dell documents the R710 fan bracket as a removable assembly. ([Scribd](#))

Then you can experiment with:

Configuration A — OEM



Configuration B — modified



Then compare temperatures.

That's actually a **great server-training experiment**.

You don't necessarily need the chassis

The chassis itself contributes very little electrically.

The important parts are:

KEEP

- Motherboard
- CPU 1
- CPU 2
- CPU heatsinks
- RAM
- PCIe risers
- PERC
- NICs
- PSU(s)
- Control panel/cable
- Fan assembly
- Backplane if you want to use the original drive bays
- Drives
- RAID battery/cache module
- iDRAC Enterprise if installed

OPTIONAL / LEAVE IN TEXAS

- Steel chassis
- Rack rails
- Bezel
- Rack handles
- Chassis covers
- Cosmetic pieces

The R710 motherboard is explicitly designed to be removed from the chassis for service. ([IBM](#))

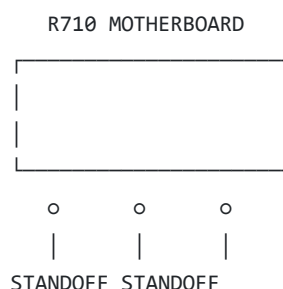
VERY IMPORTANT: Don't put the motherboard directly on metal

This is one of the easiest ways to destroy it.

Use:

nonconductive bench + proper standoffs

For example:



PLYWOOD / ACRYLIC

A general motherboard bench-testing guide recommends a clean, static-safe, nonconductive work surface and preferably raising the board on standoffs. (Tom's Hardware Forum)

You can even start with minimum POST

This is where the R710 becomes a really good training machine.

Start with:

- Motherboard
 - +
- CPU1
 - +
- Heatsink
 - +
- 1 × RAM
 - +
- PSU
 - +
- Riser
 - +
- Control Panel

Then:

Stage 1

POST

↓

Stage 2

Add second CPU

↓

Stage 3

Add RAM

↓

Stage 4

Add PERC

↓

Stage 5

Add drives

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Stage 6

Add NIC

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Stage 7

Install hypervisor

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Stage 8

Build VM infrastructure

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Stage 9

Build network

↓

Stage 10

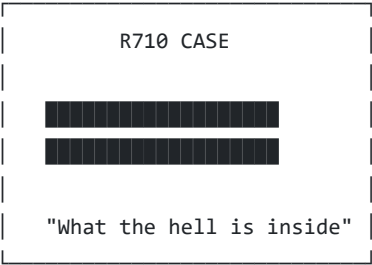
Build DockerLab

That's a **much better learning exercise** than simply plugging in an intact server.

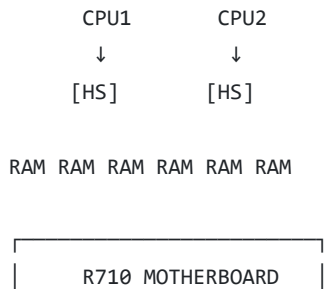
And there is another advantage

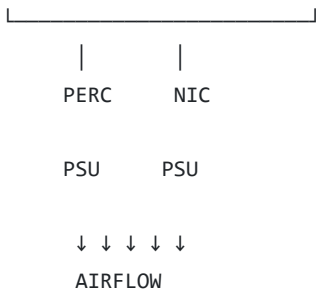
You can see everything.

Instead of:



you have:





Perfect for learning **enterprise hardware architecture**.

What I would do with your R710 specifically

Given that you're bringing it from Texas to Cebu, I would do this:

Before leaving Texas

Photograph everything.

Especially:

- cable routing
- PSU connections
- PERC cables
- backplane cables
- control-panel cable
- fan connections
- risers
- DIMM population
- drive order

Then label cables:

P1
P2
FAN1
FAN2
FAN3
PERC
BP
CTRL

Take dozens of pictures.

Then disassemble

Remove:

1. HDDs
2. PCIe cards
3. risers

4. fan assembly
5. PSUs
6. backplane
7. control panel
8. motherboard
9. CPUs/heatsinks
10. RAM

I'd leave the CPUs **installed on the motherboard** unless you have a particular reason to remove them.

Packaging is critical

For the motherboard:

ESD bag → rigid protection → foam → hard suitcase

Not:

bubble wrap → suitcase → checked baggage

The motherboard is probably the most valuable/fragile component.

I'd actually put the motherboard in a **rigid plastic project box** inside your luggage.

Same concept for:

- PERC
- NICs
- risers
- RAM

RAM should be in ESD bags.

One thing I would NOT check loosely

Hard drives.

If you have valuable data on the R710 drives, I would **not use checked baggage as the only copy**.

Make backups first.

If they're merely old lab drives, that's different.

Weight advantage

This is where your plan really makes sense.

The complete R710 can reach **26.1 kg / 57.5 lb.** ([Dell](#))

A stripped collection of:

- motherboard
- CPUs
- RAM
- heatsinks
- PSUs

- risers
- PERC
- NIC
- fans

should be dramatically easier to distribute between luggage pieces.

And you eliminate the huge 68 cm-long steel chassis.

My verdict

YES — do it.

In fact, **I would specifically recommend this approach for your Cebu DockerLab/training environment.**

But I would modify your idea from:

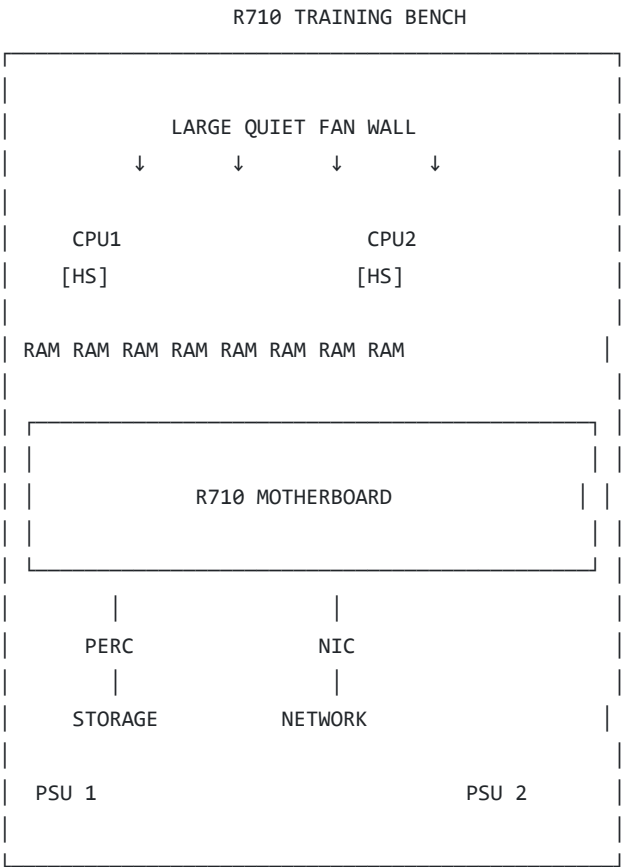
"Remove everything from the case and improvise cooling."

to:

"Convert the R710 into a purpose-built open-frame enterprise-server training bench while retaining the critical Dell cooling/control components."

That's a much safer and more useful project.

The architecture I'd build:



Then you can use it as your **physical server-training platform** for VMware/Proxmox, Linux, Windows Server, AD, DNS, DHCP, VLANs, routing, Docker, Kubernetes, storage, RAID, monitoring, networking, and eventually connecting it to your existing DockerLab architecture.

One caveat: Dell's official documentation says the R710 should not normally be operated without its cooling shroud, so your custom cooling needs to be deliberately designed to provide equivalent airflow rather than simply removing the shroud and relying on ambient airflow. ([Dell Downloads](#))

If you tell me **your exact R710 configuration (CPU ×2, RAM, number/type of drives, PERC, NICs, PSU wattage)**, I can design a **Cebu Open-Bench R710** around the hardware you already own, including the cooling layout, minimum components, bench dimensions, and exactly what I would put in your checked luggage versus leave in Texas.