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# Server Rack Cheat Sheet

Standards, sizes, and what belongs in every rack

## The numbers that define a rack

**1U**
= 1.75 in = 44.45 mm of vertical mounting space

**19 in**
EIA-310 standard rail width (482.6 mm)

**42U**
the standard full-height data center rack

**45U+**
tall racks for high-density deployments

## Common rack sizes

| Size | Typical use |
|---|---|
| **12U–18U** | Wall-mount and closet racks for offices and edge sites |
| **24U** | Half-height racks for small server rooms |
| **42U** | The standard full-height data center rack |
| **45U and taller** | High-density facilities squeezing more gear per floor tile |

## Open frame vs enclosed cabinet

### Open-frame rack

- Rails without sides or doors
- Easy access and airflow
- Fits network and patching areas
- Lower physical security

### Enclosed cabinet

- Doors, side panels, locks
- Controlled airflow (hot/cold aisle)
- Standard for server rooms
- Physical security per cabinet

## What goes in a rack

### Compute

Rack servers (1U/2U/4U) and blade chassis

### Network

Switches, routers, firewalls, patch panels

### Storage

Disk shelves, arrays, backup appliances

### Power

Rack PDUs and UPS units

### Cooling & airflow

Blanking panels, cable management, fans

### Management

KVM and out-of-band management gear

## Rack planning best practices

- Track every device's U position — records drift fast
- Reserve U space for switches, PDUs, and cable management
- Plan power and cooling per rack, not just space
- Use blanking panels to keep airflow separated
- Balance A/B power feeds across equipment
- Monitor per-rack power draw and inlet temperature

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