

FREE GUIDE

Data centres: cloud, colo, **VDC & modular.**

Own it, rent it, virtualise it or go to the cloud? A plain look at the options — **and how to connect** whatever you choose.

Data centres are everywhere

From a 6-rack comms room to vast hyperscale buildings — it's where you store, access and use the data that runs the business. But should you run your own, move to the cloud, or go hybrid? And if you run your own: colo, a virtual data centre, your own comms room, or a modular DC?

1. Moving everything to the cloud

- **Scalability** — expand resources as needed, near-limitless.
- **Cost efficiency** — pay-as-you-go, scale up or down on demand.
- **Maintenance handled** — the provider does procurement, updates, backups.
- **Accessibility** — reachable anywhere with a connection.

SICOM SAYS

A colo gets you many of these too — they handle maintenance, security, connectivity and power (UPS and generators).

Cloud's real edge is **instant scalability** for fast growth or seasonal peaks. But on cost, the jury's out — some cloud customers report unexpected, variable bills far above a DIY/colo solution.

A virtual data centre **isn't the cloud**

Both virtualise and abstract resources from physical hardware, but they serve different purposes. A VDC is software-defined — running multiple virtual machines on a single physical server — typically deployed on-premises or in a private cloud you control.

Control

Own the underlying hardware, networking and security in a private or colo site — for customisation and compliance.

Cost & efficiency

Consolidate servers onto VMs — less hardware, power, cooling and space. Better resource utilisation.

Resilience

Easier disaster recovery — VMs replicate and move between hosts. Live migration gives high availability.

Green IT

Lower energy use and carbon footprint than racks of physical hardware.

SICOM SAYS

A VDC combines the cloud's flexibility with the control of your own data centre. Run the hardware yourself in private or colo sites — we'll help you find the right pair of DCs. Or don't run it at all, and benefit from others' investment in resilient DCs and in-built connectivity. Either way it links to your offices and cloud DC via a **direct, low-latency, high-throughput network — our speciality.**

A hybrid is probably right for most

Keep sensitive or legacy systems on-premises (or in colo) while using the cloud for less-sensitive, scalable workloads. Latency-critical apps stay local; some systems are cheaper to retain in your own racks.

SICOM SAYS — EVERY ORGANISATION IS DIFFERENT

You don't want to spend a lot on cloud to store data that's rarely used but kept for long-term records.

The biggest "scale" use I've seen was the **2021 National Census** — 15–20 million households expected to fill in forms online in a single day, then dropping to nothing. Clearly a cloud job. At the other end, financial or health records that are rarely accessed don't need expensive, flexible infrastructure — on-premises or colo with proper backup. Where an application is common to lots of customers, join the herd and benefit from economies of scale. Legacy, bespoke and sensitive data is the other end of the spectrum.

So a hybrid suits most — but that could be a **cloud/VDC**, a **VDC/data-centre**, or a **cloud/data-centre** hybrid.

Rent the space, or **build your own?**

Rent space in a data centre

- **Cost-effective short term** — no big upfront capital.
- **Scalable** — expand or downsize as needs change.
- **Infrastructure & expertise** — redundant power, cooling, security, skilled staff.
- **Focus on core business** — not on running a DC.

Build your own

- **Specific requirements** — for unique compliance or security needs.
- **Full control** — design, infrastructure and security to your spec.
- **Long-term cost savings** — if your needs are predictable and stable.
- **Customisation** — room for future growth (and you can outsource the build).

SICOM SAYS — WHICH IS CHEAPER?

Renting is usually cheaper short-term (no capital, pay for what you use). But recurring fees add up. The rule of thumb: **over 20 years you can probably build a data centre for half the cost of renting it** — though there are lots of variables and that's a very rough guide. We can help with the costs of colo and self-build, and recommend suppliers of both. A **pre-built modular DC** sits between the two: lower upfront cost, prefabricated, faster to deploy — just check the PUE is as efficient as a colo provider's.

How do I connect to it?

The best method depends on security, bandwidth, throughput, scalability, resilience and where the data centres are. The options, roughly cheapest to most capable:

Internet VPN

Cheap, simple, encrypted tunnel. Performance depends on your internet and the VPN provider's capacity.

Direct Internet Access

Connect over dedicated internet to public-facing services. Less secure / lower performance than the rest.

MPLS

Private, secure, reliable. Connects multiple sites with direct access — good for critical apps.

SD-WAN

MPLS-like, plus bandwidth flexibility, lower cost and centralised management.

SASE

Integrated security in the WAN, cloud-based, Zero Trust. Suits rapid-growth or dynamic needs.

Point-to-point / leased line

Dedicated, private. High performance, low latency, secure — ideal for sensitive, critical apps.

Dark fibre

Lease unused fibre for a private, high-speed link with extensive control, security and scalability.

Dedicated fibre

Dark-fibre benefits with managed hardware — more widely available in the UK. Add wavelengths quickly and cheaply. Expensive above 80km.

Cloud Direct Connect

Dedicated direct connect to AWS, Azure or GCP — secure, high-throughput link to your cloud.

PUE was the whole story. **Not any more.**

PUE (Power Usage Effectiveness) shows how much power the whole DC uses versus just the IT. A PUE of 1 (near-impossible) means no power spent on cooling; 2 means as much on cooling as on the IT — inefficient. With electricity costs trebled, a low PUE keeps costs down. But now there's the ESG question too.

CARBON – THE THREE SCOPES

- 1 & 2** Direct + purchased energy emissions. **Where businesses typically focus** — renewable supply, offsetting.
- 3** Supply-chain and downstream emissions — where a data centre or cloud solution sits. **Account for 70–90% of total emissions, and usually ignored.** New laws require these to be calculated and reduced.

The carbon-negative angle

Renewable supply and offsetting is no longer enough. One way to improve your rating is a carbon-negative solution where waste heat actually heats homes, pools or greenhouses — most easily achieved with **immersion cooling**, where IT runs in a bath of non-conducting liquid and the heat is extracted for reuse.

IT owners now have to weigh the sustainability of the data centre or cloud alongside the PUE and cost of power.

— HOWEVER YOU GO

We bring the buildings together.

Cloud, colo, VDC, modular or self-build — you still have to connect it to your organisation and to the internet and cloud. SICOM provides the duct infrastructure, cabling and external connections to bring it all together.

We can help with colo and self-build costs, recommend suppliers, source modular providers and obtain quotes — then design the low-latency, high-throughput network that ties it together.

[sicom.uk](https://www.sicom.uk)

Richard Auld · 07803 737321 · richard@sicom.uk