



Buyer's guide: Data centre services

How much do you know about the core elements of operating a data centre? This guide is written to help both colocation and cloud buyers better understand the role of the data centre as a business-critical asset — and to make more informed decisions in their choice of provider.

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Introduction



It's almost impossible to run a business today without making use of data centre services in some shape or form.

Whether you run a single website or manage complex IT environments for multiple customers, it makes smart business sense to keep those assets and data in a facility where security, availability and connectivity are all implemented by design, and maintained to the highest standards. And, more recently, energy efficiency and ESG credentials have become increasingly prominent considerations in the procurement process.

With an array of factors to consider, it is understandable that many buyers will have only a limited understanding of what happens behind the doors of the data centre itself – and how it can have implications that are felt across their business.

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That's why we've put together this data centre services buyer's guide. It's written to help both colocation and cloud buyers better understand the role of the data centre as a business-critical asset, and therefore make more informed decisions in their choice of provider.

■ Buyer's guide: Data centre services

Security & compliance



Running a secure and compliant digital business starts with a secure and compliant data centre. To minimise security and compliance risks, look for a hosting provider that can offer more than the bare minimum.

In a shared data centre environment which will be accessed on a regular basis by both the staff of your hosting provider and other tenants, it's vital to ensure that high standards of security will be maintained at all times.

This is especially true for firms with compliance requirements that demand specific security controls within the data centre (PCI DSS is one example) as well as for IT service providers that intend to sell to those firms. For some resellers, it's not uncommon for customers in regulated industries to ask to conduct their own audit of the data centre environment – something not all hosting providers are able to grant, even if their standards of security are otherwise high.

In order to get a feel for data centre security, a good starting point is to look at your provider's accreditations. ISO27001 (Information security management systems) is the most common and sought-after, and represents a decent benchmark for data centre security in almost any industry. Bear in mind, though: where a good provider will show you their accreditations, a great one will also sit with auditors, explain their security controls, policies and processes, and answer any relevant questions about the facility.

Finally, some colocation buyers may feel the best way to ensure security and compliance in the data centre is to invest in a dedicated caged area. Many providers can do this, but be prepared for some to be selective about who they offer cages to. A caged area will take up a lot of floor space, and this may not be as readily available at some data centres as others.

Security & compliance recommendations



A data centre with world-class security should be proud to show it off. If a hosting provider can't answer your questions about the security of their facility — or attempts to gloss over key points — this may be a sign they're not the right choice for your business.

You should look for a wide range of security controls at the data centre, including — but not limited to — on-site manned security, 24-hour CCTV monitoring, biometric scanners and swipe card access, and perimeter defences such as fencing, infra-red tripwires and mantraps.

But remember: great security isn't just about great infrastructure, but also great people running it, and this will be reflected in their level of expertise and understanding of the risks themselves.

Availability & resilience



Whatever infrastructure services you use and whatever the nature of your business, unplanned downtime can be catastrophic for your productivity, customer satisfaction and more.

However, it's possible to get a good understanding of the level of availability you can expect from a hosting provider by looking at the characteristics of their data centre.

Since the mid-1990s, the industry standard for measuring resilience has been the Uptime Institute's Tier Classification system. This classifies data centres as either Tier 1, 2, 3 or 4 based on their design, and specifically the presence of redundant infrastructure for power and cooling. In the traditional colocation market, it tends to be an organisation's first port of call when it comes to choosing a data centre for specific uptime requirements.

Of course, a classification system with only four tiers will only tell you so much about a particular data centre's resilience, so it's worth asking your provider about the specific characteristics that have earned their facility its classification. In terms of UPS redundancy, for example, Tier 3 can be applied to facilities with N+1 right through to 2(N+N) resilience. That's a massive differential, whereas the jump to Tier 4 – which requires a standby mains power supply – is less meaningful because so few data centres make the grade in the first place.

Secondly, be aware that downtime is most often the result of poor maintenance or a failure to follow best practice. As such, the quality of your data centre provider's staff is something you ought to consider, as is the number of staff in the facility at any given time.

Availability & resilience recommendations



Be sure to ask your hosting provider about their UPS redundancy, environmental monitoring, power and cooling, and how power is fed within the data centre, as well as their contracts and SLAs with any maintenance service providers.

If they cite accreditations, ask for them to be backed up with certifications, and ask to see the scope of said certifications to ensure certain services aren't excluded.

If you're in the market for procuring cloud services, what kind of resilience measures does your provider have in place for their hosting platform? Ask about "active-active" architectures and second-site synchronisation — especially if you're planning on running business critical workloads in the cloud.

On a less technical level, arrange a site visit and get a feel for how the facility is managed, as well as the quality and quantity of staff. Any evidence of cost-cutting or poor housekeeping may be a sign you need to look elsewhere.

Connectivity & network



After security and availability, one of the key factors to consider in your choice of hosting provider is network performance — and this generally comes down to the quality and diversity of connectivity in their data centre.

So, if you choose a data centre with an array of network providers and connectivity options on site, you'll benefit from lower latency and higher performance services across a wider geographical area. What's more, you'll also benefit from greater resilience as a result of the diversity of connections to and from the facility.

Colocation buyers have long known the importance of a provider's carrier list, which is essentially a stamp of quality for the data centre — the greater the number of network providers with a point of presence, the greater the number of opportunities to build their own bespoke networks, work with their business' preferred carriers, and take advantage of lower costs created through competition.

Connectivity is no less important in the cloud. As organisations rely less on on-premises applications and storage and use cloud hosting to support more of their day-to-day, business-critical services, the need for fast and high-capacity connectivity has never been greater.

Connectivity & network recommendations



When choosing a data centre, look for a high-quality carrier list that includes multiple Tier 1 networks and be sure to ask questions about available bandwidth and range of connectivity options.

Do they act as a Point of Presence (PoP) for any of the internet exchanges (e.g. LINX)? Some hosting providers will also own and operate their own direct links to other data centres, making it possible to set up multi-site solutions rapidly.

On the most basic level, more carriers means more options. It also creates competition between different carriers within the data centre, meaning lower costs for your business.

Finally, it means you can be confident that your choice of provider is a savvy one. Establishing and maintaining a PoP in a data centre is a big investment for a network provider. If their due diligence has deemed a facility worthy of that investment, it's a good sign your buy-in is sound, too.

Data centre location



Whether it's to meet a compliance requirement or simply keep engineers' travel time to a minimum, most buyers of data centre services need to pay attention to the location of their facility.

If you're a colocation buyer, you may need to tend to your equipment on a regular basis, so it makes sense to keep your data centre within arm's reach.

As such, your sourcing decision should take into consideration the geographical location of your data centre, public transport links, motorway access and proximity to hubs such as airports and major rail stations. Availability of on-site parking is also important, especially when you're looking to haul heavy and expensive equipment from one place to another with as few logistical headaches as possible.

You should also consider how long it takes to get through the door. Biometric scanners, swipe cards, turnstiles and mantraps may be vital from a security perspective, but it's also important to ensure you won't be held up for half an hour every time you visit your data centre. Without the right balance between security and ease of access, you could end up losing several hours of productive time over the course of a month or even a week.

Even if you never need to travel to your data centre, issues like data sovereignty, connectivity and environmental resilience should be taken into account in your choice of hosting provider – and this can have implications in terms of location. In the UK and the EU, for example, data protection law prevents firms from storing and processing personal information in non-EU territories outside of a few, contested frameworks (such as the EU-US Privacy Shield).

Data centre location recommendations



If you don't plan on travelling to your data centre, your primary concern should be whether the location of the facility has implications for data sovereignty or connectivity.

For firms with high resilience requirements, it may also be worth taking into account the environmental risk profile — and, if you're in the market for a secondary site for disaster recovery, whether the data centre will be exposed to the same risks as your primary facility.

If you will be spending time at the data centre, think of it as an extension of your own premises — a home away from home for your servers and infrastructure, as well as the teams who attend to them. If it's not easily accessible, there may be a number of harmful side effects for your business — from loss of productivity to an inability to fix customer issues within agreed SLAs.

Note that many data centres offer not only hosting, but also additional facilities like workplace recovery (where organisations can relocate members of staff to backup office space if their own premises are ever rendered inaccessible). Be sure to consider whether this is something you need, or may need at some point in the future, before choosing your hosting provider.

Energy efficiency & ESG



With some studies reporting that as much as 3% of the world's electricity goes into data centres, the green credentials of these facilities are increasingly prominent considerations when it comes to the due diligence process of service buyers.

Whether it's for your own sense of personal (or corporate) responsibility, to meet regulatory targets or client requirements, it's important to find out what your data centre provider is actually doing in terms of sustainability and finding energy efficiencies.

The use of renewable energy sources is a great place to start, but then the renewable energy claim is very easy to make — buying renewable energy through your utility contract doesn't always help bring more renewables onto the grid, or take fossil fuel generation off the grid.

Where the energy comes from to power all the servers, air conditioning, UPS infrastructure, lighting, office facilities, and staff amenities is one factor — how carefully it is consumed is equally as important. There's little point claiming to purchase energy from renewable sources if it's then wasted during use.

Energy efficiency & ESG recommendations



When measuring up any provider's green credentials, look for the detail beyond the eco messaging.

Although renewables are a good indicator that some consideration has been made, ask your provider what they're doing to control energy use "behind the meter" — this is where some real efficiency inroads can be made. Metering power usage (renewable or not) allows data centres to make data driven decisions about which areas of their facility are running inefficiently, and shows they're serious about reducing their carbon footprint.

Question your provider's air conditioning infrastructure — how recently was it updated, and do they implement a strict cold aisle containment policy to keep energy usage to a minimum? Are intelligent Building Management Systems (BMS) used to help maximise the air conditioning efficiency and flag non-optimal situations?

Ask about their Power Usage Effectiveness (PUE) — a measurement of power effectiveness calculated by dividing the total power consumption of the data centre by the amount used specifically by IT equipment within the facility. A lower PUE is regarded as preferable with 1.0 being considered the best.

Staff & support



Even with the best technical specifications available, no data centre is worth your time without staff who can support you and your infrastructure through thick and thin.

There's a clear reason to care about the quality of staff who spend time in your data centre on a daily basis: what it means for support. For cloud buyers kept at arm's length from their infrastructure, having access to high-quality support — and, potentially, lines of communication with engineers in the data centre environment itself — can be critical in order to solve performance and availability problems within the shortest possible times. This level of support can be costly, and some hosting providers may be unable to offer direct access to on-site staff, so it's important to find this out before you make a sourcing decision.

In the colocation market, the question of support can be a more complex one. There are, of course, clear benefits to having experts on site who can act as an extension of your team, and will offer a service tailored to you and your auditors' requirements. That said, remember the data centre market is changing fast and some traditional colocation providers are moving away from their core offerings to branch out into managed services, cloud management and consultancy work — which may translate into higher costs for customers who only want rackspace.

If this describes you, look for a provider that is committed to maintaining colocation as a core offering. If someone attempts to discourage you from taking a colocation-only service, it may be because it's not a good fit for their business and their needs — regardless of whether or not it's right for yours.

Of course, your ideal partner should be able to support your evolving IT strategy without pushing you down a particular route. So, if a wide range of data centre services are available, you'll be well-positioned in terms of keeping your options open.

Staff & support recommendations



Even if you're looking for a more hands-off relationship with your data centre services provider, there's value in understanding the cost, quality and accessibility of their support up front.

If your requirements around security and availability demand a level of direct access to staff and management within the data centre environment, check how easily this can be provided. A lot of the time, you can expect an independent provider to be more flexible in this regard.

It's also worth asking about their experience in your industry. Even if you're not looking for a sector-specific service like PCI-compliant colocation, there are obvious benefits to working with a hosting provider that understands the common data centre needs in your industry — both from a service-level and commercial standpoint — and how they can help you meet them.

Datum: unrivalled data centre security

Our multi-layered approach to data centre security provides our clients with confidence in our ability to deliver a robust service. It also has a strong impact on our clients' commitments to their customers and helps to ensure that our facilities will meet and exceed the expectations of an enterprise class data centre facility.

This security resilience has attracted clients to Datum from across IT and cyber security, defence, construction, finance and the public sector. Our security approach is unrivalled and processes across our facilities have been designed to meet the requirements of industry-recognised certifications including ISO 27001, PCI DSS, BS5979, NSI Gold and PASF.

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